

The UKRI logo consists of the letters 'UK' stacked above 'RI' in a white, bold, sans-serif font on a black background.The logo for the Biotechnology and Biological Sciences Research Council features a stylized, overlapping shape in shades of purple and pink to the left of the text.

Biotechnology and
Biological Sciences
Research Council



EASTBIO

SYMPOSIUM 2023

12-13 JUNE 2023

John McIntyre Conference Centre Pollock Halls 18
Holyrood Park Rd Edinburgh, EH16 5AY

TABLE OF CONTENTS

CONTENTS

| | |
|--|----|
| Day 1 Schedule | 2 |
| Day 2 Schedule | 4 |
| Welcome | 6 |
| Important information | 7 |
| Keynote | 10 |
| Applied problem solving Sessions | 11 |
| Networking Events | 16 |
| Academia vs Industry Panel | 18 |
| Student Perspectives on Industry | 20 |
| Student Poster Presentations: PIPS And Case | 20 |
| EASTBIO Alumni Panel Discussion | 20 |
| Careers Fair | 23 |
| Scoping out Skills! Exploring how to make your PhD experiences Count | 23 |
| Tailoring your CV for purpose - academia vs industry..... | 23 |
| Making the most of LinkedIn | 23 |
| Problem Statements..... | 25 |
| Acknowledgements..... | 33 |
| Delegate Profiles | 35 |

MONDAY 12TH JUNE 2023

| | | |
|---|--|--|
| 10:30 – 11:00 | Registration & Refreshments | Foyer |
| 11:10 – 11:40 | Welcome to Symposium Professor Gerben van Ooijen Introduction of EASTBIO sub-committees, student reps, and Mental Health First Aid group | Pentland |
| 11:40 – 12:20 | Keynote: Dr Caroline Barelle – CEO Elasmogen, Aberdeen | Pentland |
| 12:20 – 12:40 | Introduction to Problem Solving Sessions | Pentland |
| 12:40 – 14:00 | Lunch | Centro |
| | Wellbeing Walk Optional - Meet at 13:10 Leads: Sannie Fu, Fiona Bunn | Foyer |
| 14:00 – 16:30 Break 15:00-15:30 Refreshments available throughout. | Applied Problem Solving Sessions Dr Paul Davies, Dr Stefan Pulver, Dr Jacob Francis, Dr Caroline Barelle, Matteo Cese Chairs: Cathrine Baungaard, Tesni Houlston, Max Charles Vallarino, Carys Redmond | Breakout rooms: Prestonfield, Salisbury, Duddingston, Holyrood |

4 parallel sessions presenting industrial scenarios to be discussed and presented to a panel of judges.

| | | |
|----------------------|--|--------------|
| 16:30-16:45 | Short Break | Centro |
| 16:45 – 17:30 | Networking events | |
| | Keyword Networking | Pentland |
| | Chairs: Temitayo Ademolue, Yuxin Shen | |
| | Film Discussion: Picture a Scientist | Salisbury |
| | Chairs: Jack Horne, Cathrine Baungaard | |
| 16:45 – 18:30 | EMG Meeting | Prestonfield |
| 19:00 – 20:30 | Dinner | South Hall |
| 20:30 – 22:00 | Ceilidh | South Hall |
| | Quiet room activities | Kirkland |

TUESDAY 13TH JUNE 2023

| | | |
|----------------------|--|--------------|
| 9:00 – 9:30 | Arrival and Registration for day 2 attendees | Foyer |
| 9:30 – 9:40 | Short Welcome | Pentland |
| 9:40 – 10:45 | Academia vs Industry Panel Discussion Professor John Newbold, Dr Stefan Pulver, Dr Julian Pietrzyk, Dr Jennifer Wardle, Dr Paul Davies Chairs: Cristina Ponce-Lilly, Andrew Nicoll | Pentland |
| 10:45 – 11:15 | Break | Centro |
| 11:15 – 13:00 | Student Perspectives on Industry | Pentland |
| 11:15 – 12:00 | Student poster presentations Chairs: Yuxin Shen, Tesni Houlston | Prestonfield |
| 12:00 – 13:00 | EASTBIO Alumni Panel Discussion Dr Svetlozara Chobanova, Dr Scott Dillon, Dr Jennifer Harbottle, Dr Zandile Nare, Dr Julian Pietrzyk, Dr Courtney Aitken, Dr Jennifer Wardle Chairs: Dr Sam Miller, Dr Jo Stevens | Pentland |
| 13:00 – 14:00 | Lunch Group photo | Centro |

14:00 – 16:30

Careers Fair

Stalls, talks and workshops

Concourse

Pentland

16:30 – 17:30

Conclusions and Drinks Reception

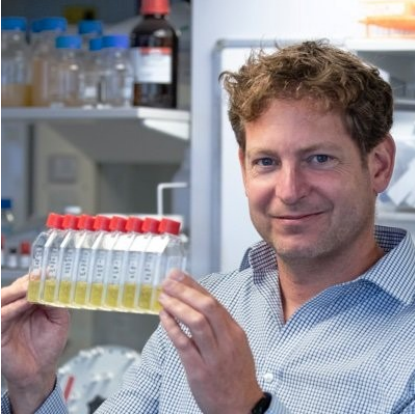
Dr Gerben van Ooijen

Including awards for the Applied Problem
Solving session

Pentland

WELCOME

DR GERBEN VAN OOIJEN, UNIVERSITY OF EDINBURGH



A warm welcome to attendees of the 2023 Annual Symposium of the BBSRC-funded EASTBIO Doctoral Training Partnership. The Symposium has been planned by volunteer student organisers and the DTP Manager and Support Officer. The Annual Symposium is one of the highlights on the EASTBIO calendar, so join me in a very special thanks to all of our organisers for making this event possible!

The Symposium brings together our four cohorts of PhD students with guest speakers and panellists to discuss industry engagement with the broad range of research conducted across the Partnership. We look forward to learning more about industry-academia transitions and skills development, and let's have a lot of fun while doing so!

Have a wonderful day!

Professor Gerben van Ooijen (he/him)

University of Edinburgh

IMPORTANT INFORMATION

EMERGENCIES

MEETING POINTS

FIRST AID

EMERGENCY CONTACTS

Hazel and Maria are your main points of contact on the day. Hazel can be reached on 07527366767 or by emailing hharop@ed.ac.uk. We will also monitor the bioeng@ed.ac.uk inbox. There will also be a representative from the venue available on both days.

ARRIVAL

PARKING

There is free parking available at Pollock Halls on a first come, first served basis, we are unable to reserve spaces. Alternatively, charged on-street parking can be found throughout the city.

STORAGE

Luggage storage will be available in boardroom 1, by the registration area of the symposium. Items stored here are left at your own risk.

REGISTRATION

Registration will take place from 10:30am on 12th June, and from 9am on 13th June in the entrance area to JMCC. We understand that some guests may be attending later in the day and so will aim to have someone in this area at all times to provide your name badge. Boardroom 2 will act as a meet and greet space throughout the event for the session organisers to meet and brief their speakers.

There will be preferred pronoun stickers available, as well as traffic light cards to indicate whether you wish to be approached by others, with a red card indicating that you wish to be left alone for the time being, and green indicating that you are open to socialising.

PHOTOGRAPHY CONSENT

There will be a photographer present throughout the event, capturing sessions and networking activities both to commemorate the event and to be used on the EASTBIO website, for news items by partner institutions, and EASTBIO promotional activities. For further information about Edinburgh University's approach to data protection and your rights go to: edin.ac/privacy. If you **do not** wish to be photographed for these purposes, please complete this form: <https://forms.office.com/e/WgqHFgQE8K> and be sure to collect a discreet sticker from the registration desk so that the photographer can identify you.

ACCOMMODATION CHECK-IN

Accommodation will be provided in Chancellors Court, the Scott Hotel and the Scholar Hotel. Your allocation will be shared with you in the information email, but if you are uncertain please get in touch with bioeng@ed.ac.uk. Those arriving on day 1 staying in Chancellors Court will collect a check-in form from EASTBIO during registration and can collect room keys from the registration desk during the problem solving session break on day 1 (15:00-15:30). Those staying in the Scott Hotel, Scholar Hotel, or arriving on day 2, are welcome to check-in individually at their hotel from .

VENUE

TOILETS

There are gender neutral toilets available opposite the Prestonfield room, as well as standard gendered toilets throughout the venue. An accessible toilet can be found in the Foyer.

FLOORPLAN

A floorplan on the venue can be found at this link: <https://drive.google.com/file/d/1CAzjLL-Dnzq6Q2-7llmzRHr-PIFhx4gQ/view?usp=sharing>

ACCESS

The venue is fully accessible and hearing loops can be provided if required. Please contact bioeng@exseed.ed.ac.uk to arrange this, or any other access requirements.

STUDENT REPS

Look out for our students reps helping on the day who will be wearing blue EASTBIO t-shirts. We will do our best to have someone available at the registration desk or boardroom 2 throughout the event if you do have any questions.

WELLBEING

SAFE SPACES AND QUIET ROOM

We want the Symposium to be as accessible and inclusive as possible. If you need some space away from other delegates, you are welcome to use boardroom 2 as a quiet room. Please note that student reps may come in and out of this room every so often, but it will be less busy than the rest of the venue. Kirkland room in South Hall will act as a quiet space during the dinner and ceilidh.

Mental Health First Aiders will be around throughout the event. If you would like to talk to someone, please either approach one of the MHFA who were introduced at the beginning of the symposium or speak to Maria or Hazel.

TRAFFIC LIGHT CARDS

In your lanyard pack you can find 2 'traffic light' cards. You can use these to indicate whether you wish to interact with other delegates. If you are happy to be approached by others you can display the green card, and if you are feeling less chatty, you can display the red card. Please be aware of other people's traffic light colour.

WELLBEING WALK

12th June 13:10-13:40.

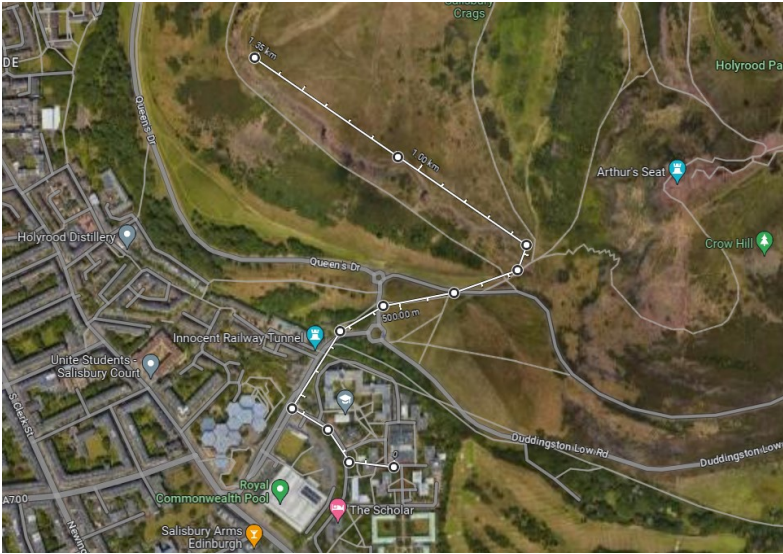
Led by Sannie (Z.Fu-6@sms.ed.ac.uk) and Fiona (fiona.bunn@ed.ac.uk)

Meet us in the Foyer to head out to enjoy some fresh air and views over Edinburgh, with some easy chats about anything. The route will go from the JMCC to Salisbury Crags.

This is a relatively easy route in Holyrood Park. It will be bit rocky and involve some uphill/downhill, but with amazing views. Adaptations can be made to use an alternative paved footpath if required. Please get in touch if you have any mobility requirements!

This will be a weather dependent activity – to be decided and announced on the day.

Please see proposed route below.



FEEDBACK AND COMPLAINTS

There is a feedback wall by the registration desk where you can post feedback which will be considered as the event goes on. There is also a QR code linking to an anonymous feedback form should you feel more comfortable using this, this form can also be found here: <https://forms.office.com/e/qSASZAsvEE> and be used to submit feedback after the event. Any immediate concerns or verbal complaints on the day can be directed to Maria or Hazel.

KEYNOTE

DR CAROLINE BARELLE, CEO ELASMOGEN

A LIFE IN LIFE SCIENCES FROM ACADEMIA TO BIOTECH TO BIG PHARMA AND BACK

ABSTRACT

In my life sciences career to date, I have been fortunate to experience this sector through the lens of academia and industry; from University to biotech to big pharma and back to founding my own biotech company. There is a broad and diverse skill set required to deliver on the process of new drug design and development which is where I have focussed my career and as we move in this fast paced field where innovation is critical, career opportunities for different types of expertise expand accordingly. I will aim to touch on my experience, the value of transitioning skills between academia and industry and expanding opportunities that arise through new technologies and the combining of cross disciplinary technologies.

BIOGRAPHY

Caroline is CEO and founder of Elasmogen, a company that discovers and develops soloMER biologics for the treatment of inflammatory diseases and cancer. She has successfully led teams at Wyeth and Pfizer in Global Bio-therapeutic Technologies progressing early platform technologies to late-stage clinical development. She has been awarded a prestigious Royal Society of Edinburgh Enterprise Fellowship, is a doctoral graduate from the University of Aberdeen in Biochemistry and an MBA (distinction) from Robert Gordon's University, Business School. Caroline is a member of the Opportunity North East Life Sciences Board, a member of the GVV board committed to investing in women's health, is a Senior Associate for the Entrepreneurial Business School, Edinburgh and an honorary Professor at Queen's University Belfast.

APPLIED PROBLEM SOLVING SESSIONS

WHAT ARE THE APPLIED PROBLEM-SOLVING SESSIONS?

These sessions are inspired by business case competitions where a group of participants compete to research and develop a solution for a realistic problem from a corporation. Participant groups then present their solutions to a group of judges and the 'best' solution wins. This is an activity that allows participants to use their collaboration, analytical and critical thinking skills, applying them to an area outside their usual field of study.

The EASTBIO June 2023 Symposium will have an applied problem-solving session on the first day. All EASTBIO PhD students joining the symposium will be assigned to a group of six and given one of four business problems. All students will have received an email from EASTBIO regarding their group number and the problem statement prior to the symposium (please check your email or session chairs for confirmation). The problem statements will also be presented by the respective industry representatives on the first day of the symposium. These problem-solving sessions will run in parallel to each other, student groups will compete against each other within their respective problem-solving sessions.

PIs are welcome to form their own groups to consider the problems, or can use this as an informal networking opportunity in Pentland and Centro.

Further information on what is required from delegates is on page 12 and judging information can be found on page 14.

PROBLEM STATEMENTS

The problem statements have been developed in collaboration with industry experts. Further information can be found on pages 24-31.

STATEMENT 1: PRESTONFIELD ROOM

“The Cost of Drug Development – Is there a way to reduce it?”

SESSION CHAIR: CARYS REDMAN-WHITE (UNIVERSITY OF EDINBURGH)

SESSION JUDGES: DR PAUL DAVIES (MRC PPU, UNIVERSITY OF DUNDEE),

STATEMENT 2: SALISBURY ROOM

“How do you estimate the carbon and environmental costs of an iCASE PhD student on EASTBIO and how do you offset/minimise those costs, exactly.”

SESSION CHAIR: CATHRINE BAUNGAARD (UNIVERSITY OF ABERDEEN)

SESSION JUDGES: DR STEFAN PULVER (SCHOOL OF PSYCHOLOGY AND NEUROSCIENCE, UNIVERSITY OF ST ANDREWS) & DR JACOB FRANCIS (CAIRN RESEARCH LTD)

STATEMENT 3: DUDDINGSTON ROOM

“Map out what a budding biotech entrepreneur, who has a great idea for a new antibody (or like) drug against a disease target, would need to think about to take this opportunity forward.”

SESSION CHAIR: MAX CHARLES VALLARINO (UNIVERSITY OF ABERDEEN)

SESSION JUDGES: DR CAROLINE BARELLE (CEO ELASMOGEN, ABERDEEN)

STATEMENT 4: HOLYROOD ROOM

“Provide a strategy for the safe containment of bacteriophages in a bioprocessing facility.”

SESSION CHAIR: TESNI HOULSTON (UNIVERSITY OF ABERDEEN)

SESSION JUDGES: MATTEO CESE (CO-FOUNDER OF CEXAL LIMITED)

AGENDA FOR THE PROBLEM SOLVING SESSION

| | |
|--|---|
| 12:20-12:40 | Introduction to problem-solving session from chairs, 5 min industry pitches from each industry expert in the order above and room delegation. |
| 12:40 - 14:00 | Lunch <i>Students are encouraged to get to know team members during lunch.</i> |
| 14:00 - 16:00 (refreshments throughout break) | Work on solving case |
| 16:00 - 16:30 | Group pitches (2 mins pitch, 2 mins for questions) |
| 16:30 - 16:45 | Judges deliberate, write up feedback and hand rubrics to session chairs |

INFORMATION FOR DELEGATES

Your team must work together to analyse the problem and propose an innovative solution. Your team will then present your solution to a panel of judges. The judges will decide on the winning team for each problem. The winning teams will receive a prize (an EASTBIO water bottle).

TEAM FORMAT

Students will be placed in groups of 6 and will receive an email prior to the symposium from the EASTBIO management team regarding their group and problem-solving session. The organising committee has tried their best to diversify student groups based on expertise, PhD projects and university.

WORKING STRUCTURE SUGGESTIONS

To maximise the couple of hours you have as a group to develop a proposed solution, you may want to consider splitting the time up into the following sections:

| | |
|-----------------------|--|
| 5 – 10 minutes | Team introductions – focus on what skills you can bring to the table |
|-----------------------|--|

| | |
|----------------------------|---|
| 10 – 15 minutes | Read over the case and discuss with team members about what you read and consider potential recommendations |
| Time in between | Working on the content of the problem using SCQA methodology |
| Final 15-20 minutes | Last minute changes & write up SCQA and proposed solution on paper, organise, choose presenter and prepare for presentation |

PROBLEM SOLVING METHODOLOGY

To help structure the sessions, teams may want to use the SCQA method. This method is often used for case competitions to understand the context, challenges and key questions of the case and a good tool to make a compelling communication tool to use as an executive summary.

1. *Situation – Set the Scene*
Must be indisputable and relevant to problem stated
2. *Complication – Describe the problem*
Must be biggest tension in your storyline
3. *Question – Make it clear what you are solving*
Must be connected to the complication and try to make it SMART
4. *Answer – Present your recommendations*
Must answer the question logically and propose a realistic solution

Example of SCQA from [Copenhagen Business School Toolbox](#):

Example of SCQA

- We possess a number strongholds today which have been the backbone of our performance, namely
– ...
- However, lately performance has been declining ... due to
– ...
– ..., having resulted in unsatisfactory sales and profit performance, as well as ...
- Therefore, the key question we have to answer is...

Focus on XYZ will be essential to our future success

- Several possible directions have been considered and matched with current business strengths
– ...
- Given our current business strengths, our future goal should be
– ...
- We will, therefore, build up our business model around ...

Situation

Complication

Question

Recommendation

PRACTICALITIES

Each team is allowed to use an unlimited number of reference material items, internet resources and computers. Reference materials can be any form of notes, collection of articles and the like. The teams must use their **own computers, phones or tablets**.

Teams will be supplied with paper and pens of which they are free to use as much to sketch out proposed solutions and ideas. However, all teams must have their proposed solution written in the SCAQ (can be bullet points) on a clean sheet of paper provided for the final presentation.

PRESENTATIONS

Teams will choose one student to present the solution to the panel of judges for a 2-minute pitch. The judging panel will then have 2 minutes to ask questions. The other team members should be present for this session so they can also answer any questions.

TIPS FOR PROBLEM-SOLVING COMPETITIONS

1. Don't spend too much time identifying the perfect solution, it can be easy to get caught up in the insurmountable number of possibilities.
2. Don't be afraid to make assumptions – don't get too caught up in the details but if you do make any remember to mention them.
3. Use SMART goals and ask SMART questions (see below)
4. Stand out e.g. use humour, catchy punchlines or a sticky metaphor.

SMART GOALS AND QUESTIONS

To make sure you are setting goals and defining the appropriate problem statements, your team may want to use the SMART framework: Specific, Measurable, Achievable, Relevant and Time-bound. Below is an example of a SMART problem statement/goal.

| | | |
|-------------------------|---|--|
| Business setting | <i>Not SMART Problem Statement/goal</i> | <i>SMART Problem Statement/goal</i> |
| | <i>What should Pandora do in Latin America?</i> | <i>How can Pandora increase revenues in Latin America by 15% annually between 2016 and 2018, while retaining current profit margins?</i> |
| Everyday setting | <i>Do well in school.</i> | <i>Complete the BRM exam before January 2020 and receive at least a 7 grade.</i> |

INFORMATION FOR JUDGES

The industry representatives have developed the business problem in collaboration with EASTBIO student volunteers and written this up in a 1-page resource to share with the students. On the day of the symposium industry representatives are expected to briefly present the case study in a 5-minute powerpoint presentation (maximum 3 slides). Additionally, the industry representatives will sit on the judging panel with one or two EASTBIO supervisors and listen to the student team's pitches, ask questions and assess the student team's proposed solutions based on a rubric (see table below).

PROBLEM FORMAT FOR PRESENTATION

Industry representatives can develop their problem statement in whichever format they would like, although a few suggestions to include are the following:

- Brief introduction to business/industry/problem
- Any relevant information on products/methods/frameworks/strategies
- Question that you have for the students to address

STUDENT PITCHES AND JUDGING ROLES

Starting at 16:00, one student representative will pitch the group's solution. Students will have 2 minutes to pitch their solution, judges have 2 mins to ask questions. At 16:30, the judging panel will have 15 minutes to decide on a winner, write up the feedback and hand their rubrics to the chair of the problem session. The winners for each problem session will be announced at the end of the second day.

RUBRIC FOR ASSESSING STUDENT TEAM PITCHES

In order to standardise the assessment of the pitches, the organisation committee have developed a rubric for the judging panel to use (4 highest to 0 lowest score):

| | 4 | 3 | 2 | 1 | 0 | Score |
|------------------------------------|---|---|---|---|---|-------|
| Understand problem and client need | | | | | | |
| Appropriate use of SCAQ method | | | | | | |
| Realistic solution presented | | | | | | |
| Presentation and Q&A are clear | | | | | | |
| General comments | | | | | | |

NETWORKING EVENTS

These events are designed to enhance networking across cohorts and institutions. We have produced two options to allow for a more formal networking opportunity, as well as a discussion around a topic of interest.

You can choose to attend whichever event is of more suitable for you.

KEYWORD NETWORKING

The objective of this session is to facilitate meaningful networking opportunities for PhD students, industry professionals, and supervisors, allowing them to connect with others who share similar research interests and expertise. By forming small groups based on research keywords, participants will have the chance to engage in insightful discussions, share knowledge, and potentially foster collaborations.

10 Keywords:

- Modelling
- Immunology
- Plants
- Animals
- Microbiology
- Bioinformatics
- Ecology
- ML & AI
- Neuroscience
- Medicine

SESSION CHAIR: TEMITAYO ADEMOLUE (UNIVERSITY OF EDINBURGH), YUXIN SHEN (UNIVERSITY OF EDINBURGH)

FILM DISCUSSION: PICTURE A SCIENTIST

This session will be an informal discussion about the film *Picture a Scientist* (2020) and the topics it addresses. You can come along have watched the documentary which can be found on Netflix, request a summary document from Jack Horne (j.horne.22@abdn.ac.uk) or just come along with an open mind. We will show the trailer at the beginning of the discussion. You can find out more information about the film here: <https://www.pictureascientist.com/>.

Please note trigger warnings for sexual harassment, sexual assault, racial slurs, and sexist slurs.

FILM ABSTRACT

"Picture a Scientist" is a captivating and eye-opening documentary that delves into the pervasive gender bias and discrimination prevalent in the scientific community. Directed by Ian Cheney and Sharon Shattuck, this 2020 film brings to light the challenges faced by women in STEM. Through the personal stories of three remarkable women scientists, the documentary reveals the profound impact of gender disparities on their careers.

The film explores a range of compelling topics, including the prevalence of gender bias in hiring, promotion, and recognition within scientific disciplines. It sheds light on the systemic issues encountered by women scientists, such as harassment, limited opportunities, and the undervaluation of their contributions. The documentary highlights the importance of mentorship and supportive networks in overcoming these obstacles and fostering success.

"Picture a Scientist" confronts the stark reality of unequal treatment and showcases the efforts of women scientists to challenge the status quo and advocate for gender equality. By amplifying the voices of those affected, the film sparks crucial conversations about the urgent need for change within academia and research institutions. It serves as a catalyst for initiatives aimed at creating inclusive environments where all scientists, regardless of gender, can thrive and contribute fully.

This thought-provoking documentary has received critical acclaim for its poignant storytelling and powerful narrative. It invites viewers to reflect on their own biases, question existing norms, and actively participate in dismantling gender barriers in science. "Picture a Scientist" is an essential resource for conferences, discussions, and initiatives focused on advancing diversity, equality, and inclusion in scientific fields.

We will be discussing the topics covered throughout the documentary in this session, and reflecting on our own implicit biases while discussing how we can create a fairer and more equal environment through our own actions.

You can access the film through Netflix, but it must be stressed for trigger warnings for sexual harassment, sexual assault, racial slurs, and sexist slurs. Alternatively, a document will be made available detailing the key points of the documentary ahead of the session, where the above TWs still apply.

SUGGESTED DISCUSSION POINTS

- What are the challenges faced by women in STEM in your field, industry or university, maybe a personal reflection on how big of a problem this is.
- What are diversity, equality, and inclusion benefits in scientific fields?
- How can gender biases in hiring, promotion, and recognition within scientific disciplines be tackled in academic and industry-oriented spaces environments?
- What practical steps should be taken at individual, group, college, company and discipline levels (for instance mentorship and supportive networks) in overcoming these obstacles
- Are there initiatives aimed at creating inclusive environments where all scientists, regardless of gender, can thrive and contribute fully? What are they how can they be accessed and effectively utilized?

SESSION CHAIR: JACK HORNE (UNIVERSITY OF ABERDEEN), CATHRINE BAUNGAARD (UNIVERSITY OF ABERDEEN)

ACADEMIA VS INDUSTRY PANEL

DISCUSSION ABOUT CAREER PROGRESSION AND PROSPECTS IN UK BIOSCIENCE

This session is an opportunity for current EASTBIO students, supervisors, and industry experts to hear an informed and lively discussion about career progression and prospects in UK bioscience. We are joined by experts in industry and academia who will share and discuss their experiences throughout their careers and engage in a series of debates on the following topics:

- Sustainability in bioscience (with a focus on the circular economy, net-zero objectives, and sustainable development goals)
- Career transitions between academia and industry
- The past, present, and future of academia-industry collaboration

We hope the audience will leave more informed about the role of the UK bioscience industry and academic research in achieving national sustainability targets, as well as understand what opportunities there are for EASTBIO students and supervisors in academia-industry collaboration.

PANELLISTS:

PROF. JOHN NEWBOLD

John is a Professor of Dairy Nutrition at Scotland's Rural College (SRUC) with experience in the international feed industry, and is working to connect science and practice. His research interests include mammary physiology, understanding nutrients in feedstuffs, and calf development and growth. He is currently supervising projects investigating optimising amino acid nutrition in dairy cows and his recent projects include studying the barriers of livestock sustainability and productivity and evaluating various livestock feed supplements.

DR JULIAN PIETRZYK

MiAlgae is an innovative biotechnology firm with a focus on the circular economy. By leveraging cutting-edge scientific and technological advancements, our primary goal is to enhance food security and mitigate humanity's ecological footprint. We achieve this by harnessing the immense potential of microalgae as a sustainable and abundant alternative source of Omega-3 fatty acids. My role is as the Head of Technical Transfer, where I oversee and coordinate the scale-up of exciting new R&D discoveries and collaborations to the commercial scale.

DR STEFAN PULVER

Stefan is the Head of Pulver Lab at the University of St. Andrews, School of Psychology and Neuroscience. Research in the Pulver lab is focused on uncovering principles of pattern generation and action selection in locomotor networks, particularly in *Drosophila*. Pulver lab is also focused on making cutting edge neuroscience accessible for educators and laypeople, adapting their fly work for use in classrooms and teaching laboratories.

DR JENNIFER WARDLE

Jennifer is a research fellow at the University of Aberdeen where she graduated with a PhD in Environmental Science. In 2022, Jennifer was awarded the BBSRC/EASTBIO Doctoral Career Development Fund to work on a project involving the production of an interactive web resource mapping urban food growing locations around Aberdeen based on quantitative and soil analysis (with Professor Jo Smith at the University of Aberdeen). The project established connections with key and periphery participants in urban growing activities and provided laboratory characterisation of soil samples from a range of urban food growing sites. She is currently working on the Sustainable and Healthy Food Systems project in which she has focussed on local and urban food production. Her work is highly interdisciplinary and combines qualitative and quantitative research methods.

DR PAUL DAVIES

Paul is a General Manager and Assistant Director of the MRC PPU @ University of Dundee. The MRC PPU is the world's leading centre for the study of signal transduction pathways relevant in disease. We also host the world's longest running and one of the largest collaborations between pharma and academia, The Division of Signal Transduction Therapy, which I oversee. The DSTT brings together some of the world's largest pharma companies to work with PI's in the School of Life Sciences on some of the biggest biological challenges in pharmaceutical development. My own lab focuses on pharmaceutical collaborations and we are currently working on a wide range of topics including organoid technology development, myocardial infarction, pancreatic cancer and kidney disease.

SESSION CHAIRS: ANDREW NICOLL (UNIVERSITY OF EDINBURGH) & CRISTINA PONCE-LILLY (UNIVERSITY OF EDINBURGH)

STUDENT PERSPECTIVES ON INDUSTRY

The “Student Perspectives on Industry” session includes two parts: (a) the poster session from EASTBIO current students and (b) the alumni panel discussion session from EASTBIO alumni about their working experience.

STUDENT POSTER PRESENTATIONS: PIPS AND CASE

This is a session for students to present posters on either their PIPS or CASE projects. The students will present their reasons for choosing their placements, their experience during it and how the PIPS has aided in their professional development. This is a good opportunity for students to reflect on and evaluate their PIPS experience, as well as being a valuable opportunity for first-year students to get an idea of potential hosts for their own PIPS and to learn more about what they could consider during planning for their PIPS and the skills they can gain during their placement.

Layout of the poster room: (Prestonfield)

| | | | | |
|---|--|---|--|---|
| 1 | | 4 | | 6 |
| 2 | | 5 | | 7 |
| 3 | | | | |

Delegates will be asked to fill in a feedback form on each poster according to criteria such as Presentation content, Visual aids, Performance and General. The forms will be collected by EASTBIO and shared with each presenter after the Symposium.

PRESENTERS:

1. Emma Armstrong (MSD-Animal Health)
2. Inga Barnett (Mole Valley Farmers)
3. Andreas Holmqvist
4. Rochelle Kennedy (Mammal Society)
5. William Smith (Cairn Research Ltd)
6. Alexandra Flora (Roslin Technologies)
7. Martina Dajak (MiAlgae)

EASTBIO ALUMNI PANEL DISCUSSION

In this session, 7 panellists (EASTBIO alumni) are invited to talk about their experience and the value of doing a PIPS during their PhD. Each panellist will introduce their background and industry experience (PIPS/iCASE) during their PhD. Additionally, the panellists who are now working in industry can give their perspective and insights on the move from a PhD to industry. Following this, the panel will discuss two

topics of interest, firstly the job recruitment process and, secondly, what makes a candidate stand out from others. Students will also have the opportunity to ask questions in person at the end of the session. The panel discussion is a great opportunity for students to understand the broader benefits of the PIPS and industry experience for their PhD and future career.

The first 20 minutes will be a brief introduction by the panellists, and then the panel will discuss the topics of interest. The last 15 minutes will be a Q&A session.

PANELLISTS:

DR JENNIFER WARDLE

Jennifer completed her PhD in Environmental Science in 2021 and now works as a post-doctoral research fellow focusing on sustainable food systems at the University of Aberdeen. After initially struggling to find an “industry” that aligned with her ethical values, she completed her PIPS at Scriptoria Sustainable Development Solutions in London. A subsequent research grant she was awarded was directly attributable to the skills she learned on the placement.

DR SCOTT DILLON

Scott is a Research Associate at the University of Cambridge in Professor Melinda Duer’s lab where he studies mechanochemistry in the extracellular matrix using mechanobiology and physical chemistry approaches. Scott completed his PhD at the Roslin Institute, University of Edinburgh, in Colin Farquharson’s group where he studied the role of phosphatases and extracellular vesicles in bone biomineralisation during embryonic development. After establishing the Cambridge Stem Cell Institute Electron Microscopy Facility, Scott undertook a short postdoc before recently joining the Duer group at the Department of Chemistry in Cambridge.

DR JENNIFER HARBOTTLE

'BSc Nutrition and Dietetics (University of Surrey, 2008-2012), MSc Molecular Nutrition (University of Aberdeen, 2012-2013), Ph.D. Human Nutrition/Cell Biology (University of Aberdeen, 2013-2017).

After completing my Ph.D., I worked at Oxford Genetics Ltd. (now OXGENE) as lead scientist to establish their new gene editing platform (Feb 2018-Apr 2019). This was an intense and fast-paced learning environment that gave me the opportunity to 'play' with novel technologies such as base editing very early on in their development, subsequently leading to my next position as senior scientist at Horizon Discovery working on a new base editing platform (May 2019-Jun 2022). Again, I followed my scientific interests during the progression of this R&D project and I began to focus more closely on analysis of on-/off-target editing outcomes (generally in the context of cell and gene therapy), a niche but fast developing area that allowed me to progress to AstraZeneca where I now hold a position as Associate Director. This role involves developing and leading the strategy for pre-clinical safety evaluation of engineered cell therapy products (oncology) with a specific focus on genomic integrity and stability.

DR ZANDILE NARE

I am currently a Senior Scientist in the Biophysical Sciences team at Concept Life Sciences (CLS) in Edinburgh where I work to characterise ligand-macromolecule interactions to help our clients advance their drug discovery campaigns. I received my MSc degree in Drug Discovery and Translational Biology from the

University of Edinburgh where I discovered my interest in target-based drug discovery for neglected tropical diseases. This led me to pursue my PhD in target-based drug discovery for African sleeping sickness and the leishmaniases, also at The University of Edinburgh. Having worked at Piramal, Thermo Fisher Scientific (during my PIPS), Abcam, and now at CLS, I'm keen to leverage my experiences to support the improvement of global health by helping to deliver life-changing products to fight and cure disease. Having also worked as a science communicator at Bitesize Bio, I'm also eager to help other scientists to effectively communicate their research to different audiences. I'm grateful to have completed my PhD on the Eastbio DTP because it gave me access to valuable resources and opportunities that I wouldn't have had access to otherwise. The experiences offered to me by Eastbio have been for my career development so far.

DR JULIAN PIETRZYK

MiAlgae is an innovative biotechnology firm with a focus on the circular economy. By leveraging cutting-edge scientific and technological advancements, our primary goal is to enhance food security and mitigate humanity's ecological footprint. We achieve this by harnessing the immense potential of microalgae as a sustainable and abundant alternative source of Omega-3 fatty acids. My role is as the Head of Technical Transfer, where I oversee and coordinate the scale-up of exciting new R&D discoveries and collaborations to the commercial scale.

DR COURTNEY AITKEN

I completed my BSc(Hons) in Psychology at the University of St Andrews in 2017 and then stayed on to start my EASTBIO PhD in the same year. My doctoral research focussed on memory and metacognitive monitoring and I graduated from the PhD in November 2022. During my PhD, I completed a PIPS policy placement at the Scottish Parliament in 2019 and then worked in industry as a Research Advisor for an EduTech startup. I joined the Scottish Parliament as a Researcher in the Scottish Parliament Information Centre (SPICe) in 2021. My current research interests include post-EU exit policy issues and evaluating public policy.

DR SVETLOZARA CHOBANOVA

SESSION CHAIRS: DR JO STEVENS (UNIVERSITY OF EDINBURGH, ROSLIN INSTITUTE) & DR SAM MILLER (UNIVERSITY OF ABERDEEN)

CAREERS FAIR

This session combines a careers fair with a number of careers focused talks from University careers services across the DTP. There will be a number of stalls with representatives from various companies available to answer your questions.

14:30 – 15:00 SCOPING OUT SKILLS! EXPLORING HOW TO MAKE YOUR PHD EXPERIENCES COUNT

Rhona Gibson – Senior Careers Advisor, University of Aberdeen

PhD students are – by definition – deeply involved in a research project where they can develop an original contribution to knowledge of the research field. But what does this actually mean to the PhD researcher as a person? What skills do you develop in your PhD and placement, and how can we understand what skills employers (in academia or industry) actually want? This short session will allow you to identify the skills you currently have, and explore what skills you might have the opportunity to develop further ahead of applying for post-PhD opportunities.

15:15 – 15:45 TAILORING YOUR CV FOR PURPOSE - ACADEMIA VS INDUSTRY

Carol MacDonald and Kyla Atkinson – Careers Consultants, University of Edinburgh

A brief introduction to CV writing for different purposes, including jobs in academia and external roles.

16:00 – 16:30 MAKING THE MOST OF LINKEDIN

Lynsay Pickering – Senior Careers Advisor, University of Dundee

Lynsay Pickering from the University of Dundee Careers service will introduce you to the benefits of LinkedIn as a Networking and job hunting tool. She will show you how to build an impressive profile and look at different tools within LinkedIn to build your network, explore your career options and search for relevant roles.

STALL HOLDERS:

University of Aberdeen Careers Service

University of Edinburgh Careers Service

University of Dundee Careers Service

Dr David McKean - Rural & Environmental Science and Analytical Services (RESAS), Scottish Government

Dr Shruti Narayanswamy - Entrepreneurial Education Developer, University of St Andrews

Emma Stevenson – RoslinCT, Talent Acquisitions Specialist

Edinburgh Innovations, Venture Builder Incubator Programme

Courtney Aitken – SPICe Researcher

Food Standards Scotland

SESSION CHAIRS: ROSIE GALLAGHER (UNIVERSITY OF DUNDEE) & DR CRAIG SIMPSON (JAMES HUTTON INSTITUTE)

PROBLEM STATEMENTS

STATEMENT 1: THE COST OF DRUG DEVELOPMENT – IS THERE A WAY TO REDUCE IT?

SESSION CHAIR: CARYS REDMAN-WHITE

SESSION JUDGES: DR PAUL DAVIES;

ROOM: PRESTONFIELD

BACKGROUND

The single cost of developing a drug and taking it through clinical trials to market is estimated at between \$1 Billion and \$2 Billion. This is a breathtakingly high figure and it immediately becomes clear as to why the costs of new drugs is so high. It is a difficult pill to swallow, with apologies for the pun, to read news articles where lifesaving medicines are not available because either the patient or the health board cannot afford the costs of treatment. It is, however, reasonable to expect the pharma companies to recoup their investment in drug development and charge the costs they must.

An average clinical trial costs around \$45 million and R&D to bring a drug to clinical trial can be anything around the \$50 million mark. So where are the rest of these costs coming from? The reality is that there are very high rates of failure at every step along the drug development pathway. The most consequential failures are those in late-stage clinical trials where \$100 million of investment can be lost. Failure at the very early stages, for example by de-validating a drug target or accurately identifying adverse pathology from target complications or drug cross reactivity represents a huge opportunity to save these costs. If much fewer drugs destined to fail were to reach clinical trials, the overall cost of drug development would fall and new drugs coming to market would be much cheaper. This could mean drugs for orphan disease or disease associated with poorer countries could be more likely to be developed.

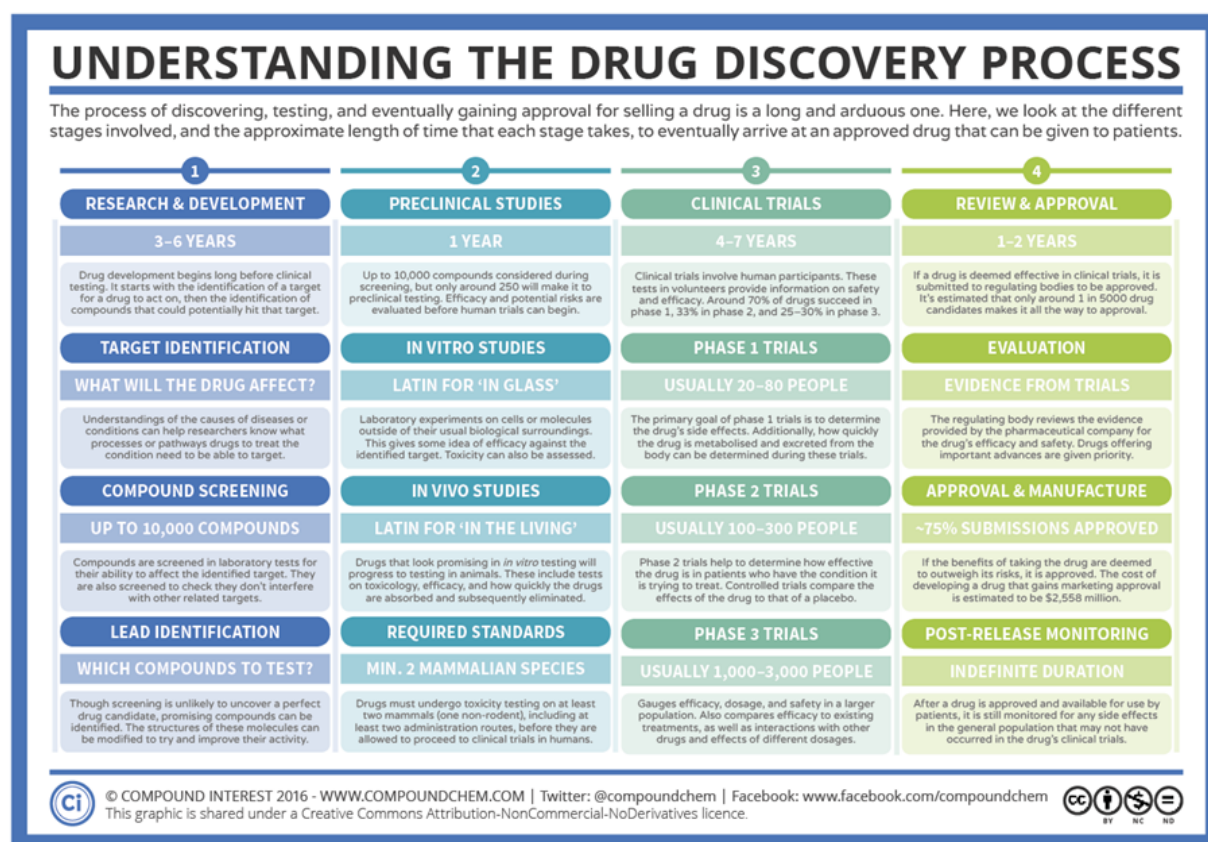
THE TASK

How would you address this issue? While there is a shamelessly inferred hint above around the earlier the solution, the greater the effect – it's the art of the possible that is needed. It is far too easy to say something like 'develop methods to better predict outcomes' as we would have done this already if it was that easy! What I would like is for you to think about the strategy needed to actually solve the problem.

The scenario is you have been instructed by the UK Government, bless them, to produce a report on recommendations aimed at introducing government policies and strategies to bring the cost of drug development down. The Government has said it aims to set aside a budget of £5 Billion over 10 years to implement your recommendations. This should give you a fair bit of creative freedom to come up with some really good ideas!

Obviously in the limited time you have, it would be unreasonable to expect you to produce a body of evidence and supported conclusions equivalent to the Nurse report. All you need to do is have a list of ideas – a bucket list of things that you think could be implemented that would have a positive effect on reducing the costs of drugs. Therefore, dedicate the maximum amount of time possible to brainstorming and then jot down your recommendations. Think about every aspect of the drug development process, how it could be improved and importantly, what would be needed to build evidence for this and make it happen. I have included a nice schematic below that covers every stage of the drug development process. Remember, the major contributor to big financial losses is the failure at every stage of the process below to stop a drug from progressing to the late-stage clinical phases.

Lastly – be as creatively lateral as you like or focus on the obvious solutions but think hard on how you could make them have an impact.



SESSION 2: HOW DO YOU ESTIMATE THE CARBON AND ENVIRONMENTAL COSTS OF AN ICASE PHD STUDENT ON EASTBIO AND HOW DO YOU OFFSET/MINIMISE THOSE COSTS, EXACTLY

SESSION CHAIR: CATHRINE BAUNGAARD

SESSION JUDGES: DR STEFAN PULVER; DR JACOB FRANCIS

ROOM: SALISBURY

INTRODUCTION:

Climate change is impacting all aspects of life on our planet. Climate change is being driven by human activities. Human generated greenhouse gas emissions are major contributors to global warming. The Scottish Government has set 2045 as the target date for net zero greenhouse gas emissions across all sectors <https://www.gov.scot/policies/climate-change/#page-top>. Meeting this ambitious target will require rapid changes in our economy and society. Estimating the carbon footprint of personal and professional activities is a necessary step towards taking action to tackle climate change.

CALCULATING THE GREENHOUSE GAS FOOTPRINT OF RESEARCH IN UNIVERSITIES:

Research in universities can be quite wasteful from an environmental perspective. Traditionally, environmental sustainability of research approaches has not been prioritized. This is beginning to change, however. Multiple recent efforts aimed at estimating the carbon footprint of research in different contexts (For a primer, see <https://www.nature.com/articles/d41586-023-00837-0>).

The EASTBIO DTP supports a wide range of research across multiple institutions. No two PhDs in EASTBIO are the same, even within a given laboratory. EASTBIO students incur both direct and indirect debts in terms of greenhouse gas emissions, but currently we do not have a common framework for figuring out what those costs are and how to mitigate and reduce those costs.

UKRI has articulated a strategy for environmental sustainability that will have impacts on research funding and administration (<https://www.ukri.org/wp-content/uploads/2020/10/UKRI-050920-SustainabilityStrategy.pdf>).

YOUR MISSION IS TO ARTICULATE A STRATEGY FOR CALCULATING, THEN EVENTUALLY MINIMIZING THE GREENHOUSE GAS (GHS) FOOTPRINTS OF EASTBIO PHD STUDENTSHIPS. PLEASE CONSIDER:

- What common activities are likely to be most expensive in terms of greenhouse gas emissions? What activities are likely to be least expensive? (*What activities are worst/best?*)
- What is best practice for accurately calculating greenhouse gas footprints across all EASTBIO disciplines (*How we do standardize carbon accounting across PhDs?*)
- How do we coordinate and implement strategy amongst participating universities (*How do we deal with different universities having different approaches to sustainability?*)
- What should EASTBIO definitely NOT do (*What approaches are likely to fail miserably?*)
- UKRI strategy for environmental sustainability (*How do we align with ongoing efforts of our funding body?*)

THIS IS NOT A DRILL!!! THIS IS A REAL-LIFE PROBLEM ON THE HORIZON FOR EASTBIO DTP.

The EASTBIO DTP programme is coming up for renewal in the next few years. The environmental sustainability of all UKRI DTPs will almost certainly become more and more of an issue as UKRI now that UKRI has articulated a plan for environmental sustainability. Ahead of applying for renewal, it is therefore in our own best interests to think about how to reduce the environmental footprint of our DTP. If we do this now, we can help the planet, but also potentially help our chances of continued funding from BBSRC.

SESSION 3: MAP OUT WHAT A BUDDING BIOTECH ENTREPRENEUR, WHO HAS A GREAT IDEA FOR A NEW ANTIBODY (OR LIKE) DRUG AGAINST A DISEASE TARGET, WOULD NEED TO THINK ABOUT TO TAKE THIS OPPORTUNITY FORWARD

SESSION CHAIR: MAX CHARLES VALLARINO

SESSION JUDGES: DR CAROLINE BARELLE

ROOM: DUDDINGSTON

INTRODUCTION:

Biologics are a successful class of therapeutic drugs both clinically and commercially. Within this class, antibodies and other binding domain scaffolds have had a significant impact with Humira® retaining its position at the top of the revenue generating league table. There are however limitations with these types of drugs and therefore a significant investment in research and development to deliver the next, more effective generation of therapeutics into the clinic.

ANTIBODY AND ANTIBODY-LIKE BIOLOGICS:

Antibodies are inherently selective for target and bind with high affinity thereby reducing off target toxicities and generating a more favourable safety profile. They are also amenable to engineering to optimize biophysical and pharmacokinetic properties, alter binding kinetics and to build different constructs and modalities. Antibody drug conjugates are an example of this where the antibody provides the targeting moiety and the conjugated toxin, the cell killing component. Different technologies have been fed into the development of new antibody drugs to improve upon existing formats to increase positive clinical outcomes but also to differentiate from the competition to facilitate investment to enable clinical development.

ANTIBODY AND ANTIBODY-LIKE DISCOVERY AND DEVELOPMENT;

The above is a long process taking on average 10-12 years and in some cases billions of dollars. Investment into early-stage development to minimise later (and more expensive) stage failures is paramount. Different models have been adopted and have evolved over time as technologies supporting this process have matured. Predicting and modelling antibody-target interactions, for example has supported bench activities such as crystallization and MS which can be challenging to enable rational mutations to be made to increase affinity or yield etc. Constructing antibodies (or antibody-like) molecules that can bind more than one target are gaining pace to counteract redundancy in biologics pathways and/or increase selectivity for diseased tissue over healthy. To achieve this a deep understanding of target biology, regulation, cellular location etc is important. Patient stratification is key – its not just about disease but the fingerprint of that individual's disease. And integral to all of this is the commercial viability of the drug – will it attract enough investment to make it to the clinic*, will it cost too much for the NHS, US payors to treat patients, will it be better than the current first line therapy?

*standard routes to the clinic are for VC based investment for small biotechs or licensing the drug to big pharma for them to take it into the clinic. Both paths require the drug is differentiated with supporting intellectual property in place, has proven data packages to demonstrate likelihood of success and defined clinical opportunity

PROBLEM

Scenario: you are a budding biotech entrepreneur who has a great idea for a new antibody (or like) drug against a disease target.

Task: You are at the start of this journey and need to map out what you need to think about to take this opportunity forward. Importantly who do you need – what kind of skills, knowledge, information and at what stage.

Considerations: as this is a paper exercise, you need not be encumbered by the limitations of money! Imagine you have significant investment to get this off the ground but your investors want to see a de-risked thought out plan to take this idea through to the clinic.

Hint: there is no right or wrong here! It's an opportunity to explore and disrupt the current thinking.

SESSION 4: PROVIDE A STRATEGY FOR THE SAFE CONTAINMENT OF BACTERIOPHAGES IN A BIOPROCESSING FACILITY.

SESSION CHAIR: TESNI HOULSTON

SESSION JUDGES: MATTEO CESE

ROOM: HOLYROOD

INTRODUCTION:

Bacteriophages are viruses that infect bacteria and can be used in various applications such as bacteriophage therapy, food safety, and biotechnology. However, during the production of biologics, bacteriophages can pose a risk to product quality and safety. Therefore, it is essential to implement strategies to safely contain bacteriophages during biologics production.

DESCRIPTION OF BACTERIOPHAGES:

Bacteriophages are viruses that specifically infect bacteria. They have a head containing genetic material, a tail, and tail fibers that allow them to recognize and bind to specific bacterial hosts. Bacteriophages are naturally found in various environments, such as soil, water, and the human body. Bacteriophages are used for various applications, including bacteriophage therapy, which involves the use of bacteriophages to treat bacterial infections in humans and animals.

PRODUCTION OF BACTERIOPHAGES FOR THERAPEUTIC APPLICATIONS:

Bacteriophages can be produced using various methods, such as isolation from the environment, propagation in bacterial cultures, and genetic engineering. For therapeutic applications, bacteriophages are typically produced using bacterial fermentation. This involves growing bacterial cultures, infecting them with bacteriophages, and harvesting the bacteriophages from the culture.

SCALE-UP OF BACTERIOPHAGES PRODUCTION:

The production of bacteriophages can be scaled up using bioreactors. Bioreactors are vessels that provide a controlled environment for the growth and expansion of bacterial cultures. The bioreactor can be equipped with sensors to monitor and control various parameters, such as temperature, pH, and dissolved oxygen. The growth and expansion of bacteriophages in bioreactors can be optimized to maximize production yields.

STRATEGIES FOR BIOLOGICAL CONTAINMENT OF BACTERIOPHAGES:

During the production of biologics, it is essential to implement strategies for the biological containment of bacteriophages. This includes using dedicated equipment and facilities for bacteriophage production, implementing strict cleaning and decontamination procedures, and performing regular environmental monitoring to detect the presence of bacteriophages.

QUESTION:

Please provide a strategy for the safe containment of bacteriophages in a bioprocessing facility. It could be a combination of:

- relevant process and practices
- strategies for physical containment

- manipulation of bacteriophages, either their components and/or other environmental/external factors

You may use resources and suggestions found online as well as proposing your own strategies.

CONCLUSIONS AND ACKNOWLEDGEMENTS

Seeking to explore the interface between life sciences research and industry, the EASTBIO 2023 Symposium has been a truly exciting project in its aims, planning and scope. Set against the successful 2018 Industry Skills School that brought together no less than five different facilities across Scotland and sets of associated expertise, this year's Symposium has adopted the student perspective on this strategic area. EASTBIO DTP funds up to 17% research collaboratively with Industry and encourages students to consider standard placements (PIPS) with industrial organisations and companies. The DTP programme has sought to enhance opportunities for students to broaden their understanding of academia-industry interface as this develops during the PhD life. Relevant provision includes standard student interactions with industry as part of the PhD research, self-selected industrial professional placements, peer interactions and Industry Engagement Group-led initiatives, industry-based skills training and events.

EASTBIO first- and second-year Student Representatives on the Planning Committee have methodically and innovatively processed the sets of goals agreed collaboratively and developed a variety of approaches that illustrate research-industry transitions. It is thanks to their ideas and commitment that the Symposium features the different sessions you will be attending in the next two days: input by both key industry reps and EASTBIO graduates with a role in industry; formal and informal interactions on different priorities and benefits from interlinked perspectives (via the industry panel, judging of presentations, etc.), and a Fair with both stalls & talks from recruiters, companies and university career teams. Catering for non-industry minded participants, the Committee also organised a number of parallel Applied Problem-Solving sessions - a taster in inter-sector collaboration. The schedule our students have developed is underpinned by awareness of the embeddedness of research in industry supply chain and a belief in the value of early exposure to careers outwith academia – a kind of 'collaborative literacy' necessary for funded students to develop. EASTBIO extends thanks to both our Planning Committee for shaping this key event and to the members of the Industry Engagement Committee and Advisory Board who have supported this work.

Maria Filippakopoulou (she/her)

EASTBIO DTP Manager

EASTBIO STUDENT REP ORGANISERS

Many thanks to our student reps who worked so hard to organise this symposium.

Temitayo Ademolue (University of Edinburgh)

Cathrine Baungaard (University of Aberdeen)

Fiona Bunn (University of Edinburgh)

Max Charles Vallarino (University of Aberdeen)

Sannie Fu (University of Edinburgh)

Rosie Gallagher (University of Dundee)

Jack Horne (University of Aberdeen)

Tesni Houlston (University of Aberdeen)

Andrew Nicoll (University of Edinburgh)

Hannah Peaty (Moredun Research Institute)

Cristina Ponce-Lilly (University of Edinburgh)

Carys Redman-White (University of Edinburgh)

Yuxin Shen (University of Edinburgh)

Kallen Sullivan (University of Edinburgh)

Benjamin Thompson (University of St Andrews)

Christoph Wagner (University of Edinburgh)

DELEGATE PROFILES

TEMITAYO ADEMOLUE

Doctoral Student, University of Edinburgh

Immunology | Parasitology | Host-Pathogen Interaction



Studied Veterinary medicine at the University of Ibadan, Nigeria and practiced as a general practice veterinarian in a clinic at the Nigeria Veterinary Research Institute. I then went to study Molecular Cell Biology of Infectious diseases at the West African Centre for Cell Biology of Infectious Pathogens at the University of Ghana. After getting my MPhil degree I worked as a project manager and bioinformatician on SARS-CoV-2 sequencing training and support program for west and Central African Countries at the University of Ghana.

Dream Job: Professor of Immunobiology at Cambridge University

IMPACT STATEMENT

Temitayo is interested in characterising immune responses during helminth and trypanosome co-infection. Pathogens are often studied in isolation, where probable interactions between separate pathogens species in the same host during co-infection were often overlooked. However, co-infections are epidemiologically significant and emerging evidence suggest that such scenarios play a significant contribution to infection outcomes. I believe that Temitayo's work would shed light on this overlooked field of research that we desperately need to understand more about. – *Mr Hou Wei Chook, Friend*

DR COURTNEY AITKEN

SPICe Researcher, Scottish Parliament

Public Policy | Evaluation Research | Academic/Industry Partnership | Research Impact

I completed my BSc(Hons) in Psychology at the University of St Andrews in 2017 and then stayed on to #eastbio23



start my EASTBIO PhD in the same year. My doctoral research focussed on memory and metacognitive monitoring and I graduated from the PhD in November 2022. During my PhD, I completed a PIPS policy placement at the Scottish Parliament in 2019 and then worked in industry as a Research Advisor for an EduTech startup. I joined the Scottish Parliament as a Researcher in the Scottish Parliament Information Centre (SPICe) in 2021. My current research interests include post-EU exit policy issues and evaluating public policy.

MISS HAYA AL SIYABI

She/Her

PhD Student, University of Edinburgh

Aging | Longevity | Hyperplasia and hypertrophy

I began my academic journey when I received a scholarship to study a bachelors degree in Biomedical Science at the University of Strathclyde. I enjoyed the research aspect of the course, centred around longevity and aging in the brains of mice and so I moved on to complete a Masters of Science through research in Biomedical Sciences at the University of Edinburgh. During my masters I completed two projects relating to colorectal cancer research and researching genes linked to adipose tissue function. Once I graduated, I worked as a research assistant at the University of Edinburgh until my eastbio funded PhD began at the same institution, my project focuses on cellular longevity and ageing.

Dream Job: Principal investigator

MISS EMMA ARMSTRONG

She/Her

PhD Student, University of Edinburgh

Immunology | Veterinary | Vaccines

Throughout my life I have had a fascination for both animals and science which lead me to gain a first class Veterinary Biosciences degree at the University of Glasgow. I then attended the Centre for Virus research in Glasgow for my MSci which allowed me to narrow my interests to veterinary vaccinology. Currently, I am at the Roslin Institute in Edinburgh for my EastBio PhD



project which looks at the immunology behind in ovo vaccination. My project is also in partnership with MSD-Animal Health which provides a unique opportunity to experience both research and industry.

Dream Job: Leading my own awesome research group

MISS KATIE ARNTON

She/Her

PhD Student, University of Dundee

Plant science | Microbiology | Bioinformatics | Rhizosphere microbiota | Barley | Synthetic communities

In June 2022, I graduated from the University of Dundee with a BSc (Hons) in Biological Sciences (Bioinformatics). The following September I started my EASTBIO PhD with the University of Dundee, working in the lab of Dr Davide Bulgarelli, based at the James Hutton Institute. My project aims to use synthetic microbial communities to uncover the genetic basis of plant-microbe interactions at the root-soil interface in barley.

DR MUHAMMAD ASSIR

PhD Student, University of Aberdeen

Brain development | Brain organoids | Protein translation | Intellectual disability | Autism Spectrum Disorders

After completing my medical school training, I completed my fellowship training in General Medicine and worked as an Assistant professor of Medicine in Pakistan before starting my EASTBIO PhD at University of Aberdeen. I am working on elucidating the molecular mechanisms of intellectual disability using human brain organoids as disease model.

EDMUND ASTIN

He/Him

PhD Student, University of Dundee

Plant Pathology | Structural Biology | Biochemistry



For my bachelor's degree, I studied Biochemistry at the University of Edinburgh, graduating in 2020. I then took a year away from academia, before starting my EASTBIO PhD at the University of Dundee in 2021, with a project studying interactions between aphid and plant proteins.

MISS GABRIELE BAGUSINSKAITE

She/Her

PhD Student, University of Edinburgh

RNA biology | RNA-binding proteins | MRSA | Post-transcriptional gene expression regulation

I received a BSc degree with First Class Honours in Biological Sciences (Biochemistry) at the University of Edinburgh in 2022. I then started my EASTBIO PhD in Dr Granneman's lab based at the same university. My project focuses on MRSA RNA-binding protein - RNase R - role in host adaptation and infection.

Dream Job: Research

JACK DUXBURY BARBER

He/Him

PhD Student, University of Aberdeen

Evolutionary biology | Microbiology | Antimicrobial resistance | Decolonising

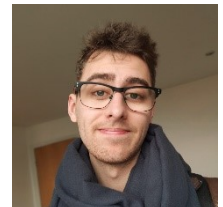
In 2021, I completed a five-year integrated master's degree which included a year-long research placement at HIPS in Saarbrücken where I isolated myxobacteria from soil and tested them for novel bioactive secondary metabolites. That same year, I started my PhD with Dr Tom Vogwill at the University of Aberdeen, aiming to unravel the fitness cost of evolving antibiotic resistance.

Dream Job: Professional Custard Taster

INGA BARNETT

PhD Student, SRUC

Agriculture | Dairy cows | Nutrition | Protein | Amino acids | Transition period | Periparturient | Nitrogen use efficiency



I am a second year PhD student based at SRUC's Crichton Royal Farm in Dumfries and The University of Edinburgh's Royal (Dick) School of Veterinary Studies. I graduated from SRUC Edinburgh in 2020, with a BSc (Hons) degree in Applied Animal Science. My PhD project focuses on protein distribution and utilisation across the transition period of dairy cattle. The project is supported by UK-based feed company, Mole Valley Farmers.

MISS CATHRINE BAUNGAARD

She/Her

PhD Candidate, University of Aberdeen

Sustainable diets | Seafood | Dietary modelling

I completed my bachelor's degree in Nutrition at Liverpool John Moores University in 2019, I worked as a Junior Manager at the European Food Information on sustainable nutrition and food system related EU-funded projects. In 2020, I moved to WWF-UK to work as their Food Service Sustainability Advisor on sustainable diets with food service partners. I started my EASTBIO PhD in 2022, focusing on modelling sustainable seafood choices as part of sustainable diets.

Dream Job: I'm not sure yet!

MISS LAURA BERNAL

She/Her

Venture Builder Incubator
Programme Manager, University of
Edinburgh



Innovation | Entrepreneurship | Creativity

After doing my degree in mass communication and did a masters on Creativity, Innovation and Entrepreneurship at Newcastle University. I then started my own business and today I support PhD students translating their research into impactful business opportunities at the University of Edinburgh.

MRS ELEANOR BIRCH

She/Her

PhD Student, University of Edinburgh

Peat | Enzymes | Metagenomics

I graduated with an MChem in Medicinal and Biological Chemistry from the University of Edinburgh in 2022, having done the early part of my degree with the Open University. I returned to the University of Edinburgh School of Chemistry to do a PhD in the Bell group in 2022. The Bell group aims to understand the molecular basis of peat formation and degradation to facilitate monitoring of restoration intervention effectiveness, especially in relation to carbon capture or release. We do this by analysing near-natural, damaged and restored peatlands in the UK, and elsewhere in the northern hemisphere. My project will approach this from a biochemical perspective.

ALISTAIR BONSAALL

He/Him

PhD Student, University of Dundee

Microbiology | Bacterial Warfare | Triathlete

I have just recently graduated with an integrated master's degree in microbiology from the University of Dundee. My current research interest is that of bacterial 'warfare' i.e., the mechanisms that bacteria have evolved to outcompete their bacterial competitors along with the ways those microbial interactions can be exploited for human good. My EASTBIO PhD project based at the University of Dundee aims to uncover the molecular mechanisms that underpin *B. subtilis*' capacity to dominate competing strains.



BETH BRIDGE

She/Her

PhD Student, SRUC & University of
Edinburgh

Biodiversity | Farming | Agroforestry | Wood Pastures | Bats, Birds and Small Mammals

I completed my Bachelor's degree in Environmental Science at the University of Birmingham, spending a year working in a freshwater science research institute in New Zealand. I then went on to complete a Masters by Research in animal behaviour & ecology at the University of Bristol. After working as a freshwater ecologist for 5 years with the Environment Agency, I went on to work as a research assistant in climate change science at Forest Research in Edinburgh. I am



now working on my PhD project with SRUC & the University of Edinburgh, studying the biodiversity benefits of a wood pasture system for Scottish farms.

Dream Job: Ecological researcher

MISS ALICE BUCKNER

She/They

PhD Student, University of Edinburgh

Rumen microbiologist looking at methane reduction

After graduating with BSc Bioveterinary Science from the University of Lincoln in 2020 I then spent the next year carrying out an MSc by Research in Bioveterinary Science at the University of Lincoln looking at liver fluke infection and management in cattle and sheep, along with the immunological response of the snail intermediate host. In 2021 I started my PhD with the University of Edinburgh and SRUC looking at the characterisation and optimisation of the rumen microbiome.

Dream Job: Cat café owner (though a career in academia is probably more feasible!)

MISS FIONA BUNN

She/Her

PhD Researcher, University of Edinburgh

Synthetic biology | Biotechnology | Circular economy

"After completing a bachelor's degree in Natural Sciences (Biochemistry) at the University of Cambridge in 2017, I moved to Edinburgh to complete an MSc in Synthetic Biology and Biotechnology. I then started my EASTBIO PhD based at the University of Edinburgh in 2021, focusing on biological approaches towards the circular economy of rare earth elements. I am interested in sustainable biotechnology and I am focused on science with real world applications and impact, so I am interested in working in industry, or potentially policy, in the future.



Dream Job: Something that makes a difference in the world.

MISS LAUREN CHAPMAN

PhD Student, University of Aberdeen

Immunology | Fish Biology | Animal welfare



I studied my BSc in Marine Vertebrate Zoology at Bangor University where I became very interested in fish and aquaculture. I then went on to work in the aquaculture industry for 2 years on both freshwater and sea farms, before moving to Marine Scotland Science for 3 years tagging and tracking wild salmonids to study their interactions with aquaculture and their migration journey. I then was lucky enough to secure an EASTBIO studentship in October 2022 which is focussed on understanding how stress and the immune response interact with one another in smolting fish. I hope this leads to me to a career in fish health.

Dream Job: Fish Health Expert

MR MAX CHARLES VALLARINO

He/Him

PhD Student, University of Aberdeen

Genomics | Immunology | Aquaculture

After completing a degree in MSci Biological Sciences at the University of Aberdeen, I started my EASTBIO PhD co-supervised at the University of Aberdeen and the University of Edinburgh. My research focuses on elucidating the genomic basis of energy allocation in Atlantic salmon, with emphasis on the interplay between health and growth pathways.



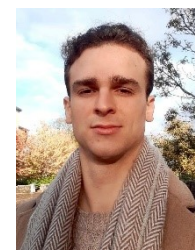
LORENZO CROCE

He/Him

PhD Candidate in Neuroscience, University of Aberdeen

Vitamin A receptor modulator drugs to tackle Alzheimer's disease

Undergrad 5 year MSci Neuroscience with Psychology, including 1 year industrial placement. Placement



thesis: AD mouse model molecular profiling. Final Thesis: The biology of well-being

MSc Cognitive Neuroscience. Postgrad thesis: Learned helplessness, role of kindness meditation in altruism reinforcement learning

Current PhD. Rethinking the role of retinoic acid receptor: Repurposing the molecule of Vitamin A to cure Alzheimer's disease.

Dream Job: Biomedical and health/wellbeing consultant.

OLIVIA CURRY

She/Her

PhD Student, University of Edinburgh



Equine | Behaviour | Welfare | Pain | Discomfort

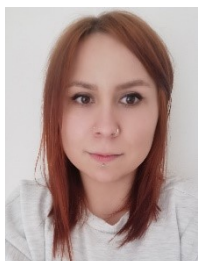
Prior to completing an MSc at the University of Glasgow in Animal Welfare Science, Ethics and Law in 2021, I graduated from Writtle University College in 2020 with a BSc in Animal Therapy (Veterinary Physiotherapy). I commenced my EASTBIO PhD studentship at The Royal (Dick) School of Veterinary Studies in 2022.

Dream Job: Science Policy Advisor

MISS PAULINA CZAPNIK

She/Her

PhD Student, University of Dundee



Cell Signalling Pathways | Intellectual Disability | Phosphorylation | Methylation | Stem Cells

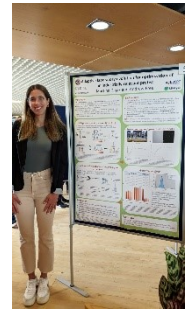
I graduated with a BSc (Hons) Biomedical Science degree in 2019 from De Montfort University, Leicester, while I also worked as a biomolecular technology intern in my last year of studies. Following this, I undertook a MSc by Research (MRes) in Physiology and Pharmacology at University of Bristol, where I worked on a zebrafish cardiac regeneration model. After completing MRes in 2021, I started EASTBIO PhD based at the University of Dundee, focusing research on understanding how signalling pathways dysregulation leads to intellectual disability.

MISS MARTINA DAJAK

She/Her

PhD Student, University of Edinburgh

Microalgae | Biorefinery | Adaptive laboratory evolution | Phenotype improvement | Innovative food solutions



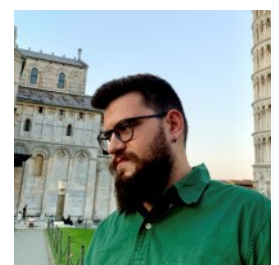
Hi, I'm Martina and I'm a part of Dr Andrew Free Lab at the Institute of Quantitative Biology, Biochemistry and Biotechnology, based at The University of Edinburgh. I am currently in my 3rd year of PhD and my project is looking at enhancing the performance of Omega-3 rich microalgae and developing desired phenotypes through the process of Adaptive Evolution. I obtained my undergraduate degree in "Biotechnology and Drug Research" at the University of Rijeka. Before starting my PhD I did an MSc in "Biotechnology" at The University of Edinburgh, with my final project investigating the structure and composition of microbial communities associated with microalgae in photobioreactors under different cultivation conditions. Following my studies, I worked on a one-year industry/academia joint project investigating the role of CreChar® in Direct Interspecies Electron Transfer (DIET) during Anaerobic digestion. After that, I spent almost two years working in the industry, in the field of algal biotechnology, as a part of a start-up microalgae production company.

Dream Job: Saving the world with microalgae!

MR FEDERICO DE FILIPPI

He/Him

PhD Student, University of St Andrews



Visual perception | Cognition | Animal patterning | Deep learning

I studied Experimental Psychology at the University of Aberdeen (MA 2016-2020, MRes 2020-21). While studying, I worked as a Research Assistant on projects about visual attention (eye-tracking) and the contribution of visual information when grasping objects (motion-tracking). I also worked as a demonstrator on data science courses for cognitive research. I then started my EASTBIO PhD at the University of St Andrews in 2022. In my project, we

aim to characterise the visual features that make animal warning signals (e.g., bright stripes/spots) effective, using behavioural and computational methods.

Dream Job: Data science, teaching and research.

GAURI DEAK

She/Her

PhD Student, University of Edinburgh

Trypanosomes | Chromatin | Structural biology | Cryo-EM



I completed a BSc Hons degree in biochemistry at the University of Edinburgh in June 2021. During that time, I undertook two internships, one focused on immunology research at the Institute of Molecular Biomedicine in Bratislava and the other focused on business skills in AT&T. Being fascinated by structural biology and its potential to explore the physicochemical basis of infectious disease, I joined the MD Wilson Lab for my PhD in October 2021 at the University of Edinburgh.

ROSE DOYLE

She/Her

PhD Student, University of Edinburgh

Bacteria | Infectious disease | Cell culture



I completed my BSc in Biomedical Sciences at the University of Bath in 2021, and moved to Edinburgh that same year to start my PhD in Maddie Moule's lab, investigating bacterial host-pathogen interactions.

Dream Job: I don't know!

MISS SUZANNE DRENNAN

PhD Student, University of Stirling

Machine learning | Recirculation aquaculture systems | Engineering

After completing my bachelor's degree in Biomedical Engineering at the University of Strathclyde in 2018, I worked for 4 years for a start-up aquatech company developing robots for the automated vaccination of fish. I then started my EASTBIO PhD based at the University of Stirling in 2022, focusing on the application of machine learning to improve #eastbio23

management practices in recirculation aquaculture systems.

Dream Job: Founder

KATE DUBARRY

She/Her

PhD Candidate and Startup
Founder, University of Edinburgh

Gene expression | Bioinformatics | Phenotypes | Livestock farming | Sheep | Agtech | Entrepreneurship.



Looking for a change from my first career in beauty therapy, I joined an NC course in Agriculture at SRUC. I caught the learning bug and progressed to an HNC and then BSc in Agriculture. After graduating with First Class Honours in 2019 I spent a year representing students as Student Vice-President at SRUCSA, including through the early months of the pandemic. Later in 2020, I started my PhD with EASTBIO, based at the Roslin Institute. My project involves studying gene expression in sheep, with a focus on circulating immune cells. I hope that my work will define novel molecular phenotypes that could be used within breeding programmes to help breed healthier sheep in the future.

Dream Job: Running my own science focussed startup that provides real impact for farmers!

EMMA DUMBLE

She/Her

1st Year PhD Student, University of Edinburgh

After completing a BSc in Biomedical Science at Cardiff University I moved to Paris to study a two-year Master's in Developmental Biology at the Sorbonne University, where I became enamoured with Neuroscience. I worked for a year as a Research Assistant in the lab of Dr Tim Czopka in the University of Edinburgh, before starting my PhD here. I am investigating the non-myelinating roles of oligodendrocyte precursor cells (OPCs) during brain development. Specifically, I will be looking at OPC:neuron interactions and how OPCs might be regulating the precise connectivity within the visual system. To investigate this, I will utilise Zebrafish as a model organism, as they rapidly develop a functional nervous system and are amenable for genetic and

physiological manipulations of both cell and network function. Zebrafish are also accessible for high-resolution optical and functional imaging in intact living animals.

DAN EDWARDS

He/Him

PhD Student, University of Edinburgh

Biotechnology | Nanopore | Bioconjugation | Chemistry | Ion channels

In 2019, I graduated with an integrated master's degree in Chemistry from the University of Lincoln with a year in industry collaborating with Intertek Pharmaceutical Services Manchester researching biopharmaceutical drug design. I then progressed to my PhD study with EASTBIO at the University of Edinburgh focusing on the investigation of synthetic and modified transmembrane channels. In 2022, I completed a UKRI internship working at the intersection of scientific research and policymaking with the UK Government Office for Science.

Dream Job: Government Chief Scientific Advisor



DR JACOB FRANCIS

He/Him

Developer, Cairn Research Ltd

Neuroscience | Research software engineering | Modelling | Software development | Microscopy

Graduated with a BSc in Computer Science from Swansea University in 2012. Worked as a full stack web developer until 2016. Graduated with an MSc in Computational Neuroscience and Cognitive Robotics from University of Birmingham in 2017. I then started my EASTBIO PhD in Drosophila neuroscience at University of St Andrews in 2017. Here is where I discovered the role of a research software engineer through my PhD CASE placement and my current work is continuing that.

Dream Job: To be a wizard living in the forest with 12 cats

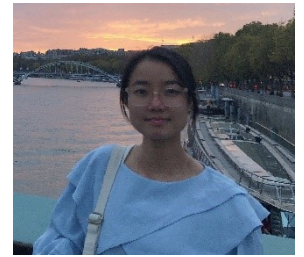


ZISHAN FU

PhD Student, University of Edinburgh

Plant evolution | Ferns | Plant vasculature | Fossils | Public engagement

I am currently a second-year PhD student at the University of Edinburgh. Before this, I completed a bachelor's degree in Horticulture at Zhejiang University and an MRes in Ecology, Evolution and Conservation at Imperial College. I'm working on a project about the evolution of phloem in ferns, one of the coolest groups of plants on the Earth!



MISS ROBYN GREENE

PhD Student (Institute for Adaptive and Neural Computation), University of Edinburgh

Computational Neuroscience | Neural Population Dynamics | Machine Learning for Neuroscience

I graduated from The University of Edinburgh with a Masters in Informatics (MInf) in 2022. I became interested in the applications of computational modelling in neuroscience during my Master's project looking into improving analysis reliability for extracellular neural recordings. I started my PhD with EASTBIO in 2022, working within the Institute for Adaptive and Neural Computation. My current work focusses on analysing complex experimental neuroscience data by identifying low dimensional latent factors. Outwith academic settings, I undertook an internship with EDINA data service consultancy in 2022, as well as a summer Software Engineering placement with JPMorgan in 2023. I have also performed various teaching assistant roles in courses across cognitive science and machine learning.

Dream Job: Researcher/Research Consultant



DR JENNIFER HARBOTTLE

She/Her

Associate Director, AstraZeneca

Novel gene editing technologies (CRISPR, Base Editing, prime Editing,



etc.) | Cell Therapy (oncology) | Gene Therapy | Gene Editing Safety

BSc Nutrition and Dietetics (University of Surrey, 2008-2012), MSc Molecular Nutrition (University of Aberdeen, 2012-2013), Ph.D. Human Nutrition/Cell Biology (University of Aberdeen, 2013-2017). After completing my Ph.D., I worked at Oxford Genetics Ltd. (now OXGENE) as lead scientist to establish their new gene editing platform (Feb 2018-Apr 2019). This was an intense and fast-paced learning environment that gave me the opportunity to 'play' with novel technologies such as base editing very early on in their development, subsequently leading to my next position as senior scientist at Horizon Discovery working on a new base editing platform (May 2019-Jun 2022). Again, I followed my scientific interests during the progression of this R&D project and I began to focus more closely on analysis of on-/off-target editing outcomes (generally in the context of cell and gene therapy), a niche but fast developing area that allowed me to progress to AstraZeneca where I now hold a position as Associate Director. This role involves developing and leading the strategy for pre-clinical safety evaluation of engineered cell therapy products (oncology) with a specific focus on genomic integrity and stability.

Dream Job: Mine!

EMMA HARDY

PhD Student, University of Dundee

Plant Science | Molecular Biology | Climate Change

I completed a Bachelors at the University of Freiburg in Freiburg, Germany, where I stayed for a master's degree. My PhD, at the University of Dundee based at the James Hutton Institute is aimed to determine the role of upstream Open Reading Frames and their impact on translation of a protein potentially important in how plants respond to temperature.

Dream Job: Science Communication

DR ADAM HAYWARD

He/Him

Research Fellow, Moredun Research Institute



Sheep | Helminths | Disease | Ecology | Immunity | Statistics

I completed a PhD at Edinburgh in 2011, working on host-parasite interactions in wild Soay sheep. I did post-doctoral work on pre-industrial humans, elephants, and Soay sheep at various institutions, before moving to Moredun Research Institute in 2018. I do data-driven research on ruminants and their helminth parasites, with particular interest in the drivers of between-individual variation.

Dream Job: Sports coach/journalist/commentator (I'm too old to compete now!)

MR JACK HENDERSON

He/Him

PhD Candidate, University of Aberdeen



Plant-Microbe Interactions | Natural Products Chemistry | Nitrification | Agricultural Sustainability

After graduating with a BSc (Hons) in Bioscience with Biomedical Science in 2020 I joined the National Collection of Industrial and Marine Bacteria (NCIMB) as a Molecular Microbiologist. In 2022 I started my EASTBIO funded PhD at the University of Aberdeen. My PhD aims to isolate and characterise novel nitrification inhibitors from Barley, which could be used to reduce synthetic nitrogen inputs and associated nitrous oxide emissions, thus contributing to increased agricultural sustainability and food security.

Dream Job: CEO of biotechnology company

MS ELEANOR HEWETT

She/Her

PGR Student, SRUC



Pigs | Behaviour | Welfare | Nutrition

MR ANDREAS HOLMQVIST

PhD Student, University of Dundee

Medicinal chemistry focused on the development of CNS active degraders

After completing my master's degree in Organic and Medicinal Chemistry at Gothenburg's University I moved to Dundee to carry out my PhD at the Centre for Targeted Protein Degradation (CeTPD) at the University of Dundee.

Dream Job: Medicinal chemist for CNS active bifunctional molecules

MISS TESNI HOULSTON

She/Her

First-year PhD Student, University of Aberdeen

Honeybees | Behavioural Ecology | Functional Genomics | Virology

I began my PhD in October 2022, after completing my integrated master's degree at the University of Leeds in summer 2022, during which my interest in social insects, and bees in particular, started. My master's project focused on investigating magnetosense in bumblebees, we were working to confirm bumblebee's use of magnetosense with a new behavioural assay that I helped design. As well as this we also wanted to try and identify potential genes involved in magnetosense using qPCR and so I was able to learn molecular lab skills as well as behavioural. Working on this project helped me realise my interest in pursuing a research career, with a particular interest in the combination of behavioural and molecular work. This led me to my current EASTBIO PhD project; Investigating the link between viral infections and foraging behaviour in the honeybee brain, supervised by Dr Fabio Manfredini, Dr Alan Bowman and Dr Mark Barnett.

MS DANIELLE JORDAN

She/Her

PhD Student, University of Aberdeen

Developmental biology | Molluscs | Gene editing | Bioinformatics | Gene expression

After earning my bachelor's degree in Marine Biology at the University of Rhode Island in 2018, I worked for three years as a research technician at the Marine Biological Laboratory and National Xenopus Resource. I then started my EASTBIO PhD at the University of



Aberdeen in 2021, where I am looking at calcium transport mechanisms in molluscan biomineralization.

Dream Job: Industry Researcher

IMPACT STATEMENT

Danielle's research does not only use cutting edge technology to understand how snails get their shells but any development through her PhD can be utilised by the aqua industry to further understand shell development in important food species such as the oyster. Those food species are at high risk due to the rise in Ocean PH and understanding their shell development is essential. – *Felicitas Pamatat, Colleague*

MS KAREN KEEGAN

She/Her

PhD Student, Moredun Research Institute



Zoonoses | Antimicrobial resistance | Genomics | Livestock | Wildlife

I completed my BSc in Zoology at University College Cork (UCC) in 2016, with my dissertation focusing on body condition in wild bottlenose dolphins (*Tursiops truncatus*). I then moved to the UK to do a masters in Evolutionary and Behavioural Ecology at the University of Exeter's Penryn campus, Cornwall. During this time, I began developing a more extensive practical knowledge of wet-lab bacterial culturing and genetic analysis, as my masters project centered on replication rates of *Mycobacterium gallisepticum*, a bacterium that has caused mass mortality events in wild populations of North American house finches. Following on from my masters, I worked as a molecular biology research technician/ research assistant in various labs, before beginning my PhD studies. My PhD is based at the Moredun Research Institute and I am researching the use of Nanopore sequencing (a third-generation sequencing technology) to help detect and monitor the transfer of foodborne zoonotic pathogens and antimicrobial resistance (AMR) between wildlife and livestock. I am quite interested in pursuing a career in molecular ecology and/or bioinformatics after my PhD, in either industry or academia.

Dream Job: Research scientist in wildlife conservation

MRS ROCHELLE KENNEDY

She/Her

PhD Student, SRUC

Biodiversity | Farming | Conservation | Insects | Ecology

After working as a field ecologist for three years, alongside doing an environmental science degree with the Open University, I decided to continue my career in conservation research by starting an Eastbio PhD. My research project focuses on the how different aspects of farming impact on biodiversity.

MS ŁUCJA KOSTRZEWA

PhD Student, University of Edinburgh

Learning & memory | Intellectual disability & autism | In vivo electrophysiology | Rodent behavioural research



After completing a BSc in Neuroscience at the University of Edinburgh in 2016, I commenced a Neuroscience PhD at the same institution.

MR ZHUOEN LU

PhD Student, University of Aberdeen

Self-reference | Cognitive Psychology | Neuroscience



After completing a MSc degree in Signal Processing and Communications at the University of Edinburgh in 2020, I worked for a year as a research volunteer at the University of Edinburgh. I then completed a MRes degree in Psychology at the University of Aberdeen in 2022 as well as working for four months as a research assistant. Then I started my EASTBIO PhD based at the University of Aberdeen in 2022, focusing on an interdisciplinary project in psychology, biological signal processing, neuroscience and machine learning, with an aim of working as a researcher in the future.

Dream Job: Interdisciplinary Researcher

NICOLE MAFFEZZINI

PhD Student, SRUC

GABRIELA MAFRA FORTUNA

She/Her

PhD Candidate, University of Edinburgh

Dairy cattle | Genetic diversity | Quantitative genetics | Ancestral recombination graphs | Animal breeding

I received my bachelor's in Veterinary Medicine from Universidade Federal Fluminense in Brazil in 2018. In 2019 I joined the European Master in Animal Breeding and Genetics, a two-year degree split between Georg-August-Universität Göttingen, Germany, and the Swedish University of Agricultural Sciences - SLU, Sweden. For my MSc thesis, I collaborated with researchers at the Roslin Institute, which allowed me to join them for a PhD in 2021. For this research, we are using cutting-edge methodologies to enhance genetic evaluation to optimise breeding strategies for tropical dairy cattle.



DR MORAG MANSLEY

Lecturer/Group Leader, University of St Andrews

Ion channels | Kidney | Blood pressure

I was awarded a BSc (Hons) in Biomedical Sciences, Physiology from the University of Aberdeen in 2006. Following a fantastic final year lab project, I was enthusiastic to remain in lab-based science so then undertook an MRC-funded PhD at the University of Dundee where I studied hormonally-regulated epithelial ion transport and its role in both airways and the kidney. Following completion of my PhD in 2010, I moved to the Friedrich-Alexander-University of Erlangen-Nuremberg, Germany. Here I worked in a group at the forefront of research into renal ion channels in both physiological/pathophysiological conditions. I was initially funded by a scholarship from the Bavarian government and then received an Alexander von Humboldt fellowship for a further 2 years. I returned to the UK in 2014 where I started a post-doc at the University of Durham on a collaborative project with the University of Edinburgh, linking cellular work with whole animal physiology. I was then 1 of 3 scientists in the UK to be awarded a Kidney Research UK intermediate fellowship in 2016 which I carried out at The University of Edinburgh.



Here I focused on the role of steroid hormones in blood pressure regulation by the kidney. In 2020, I was awarded a Lectureship in the School of Medicine at the University of St Andrews, so relocated my lab after lockdown was lifted and have expanded my lab group since then. Our interests are in the various transport processes in the kidney that regulate our blood volume and how these may become dysregulated in hypertension.

Dream Job: Doing what I'm doing now. (perhaps with less admin..)

RACHEL MARTIN

She/Her

PhD Student, University of Edinburgh

Post-Stroke Infections | B cells | Immunotherapies

I completed my BSc (Hons) in Medical Sciences at the University of Edinburgh in 2021 before starting my PhD in 2021, also at Edinburgh. My research focuses on understanding the post-stroke systemic immune system with the aim to find more effective treatments for post-stroke infections such as pneumonia.



ROBERT MASON

He/Him

PhD Student, University of Edinburgh

Plant immunity | Priming | Systemic resistance | NPR1

I began at the University of Edinburgh in 2016 for my Undergraduate degree. After finishing in 2020 I started a Masters by Research project with Steven Spoel, which I have continued on to a PhD that began in 2021.

Dream Job: Academic Group Leader

MISS JESSICA MATTHEWS

She/Her

1st Year PhD Student, SRUC

My project is investigating the role of anaerobic fungi of the rumen microbiome and their role in lignocellulose degradation.

#eastbio23

In 2021, I graduated from the University of York with a Master of Biochemistry (integrated). After, I worked back home in Middlesbrough as a customer service administrator until I started my PhD at SRUC / University of Edinburgh in October 2022.

KIM MATTHEWS

Head of Animal Breeding and Product Quality, AHDB

Kim graduated in Agriculture with Animal Science from the University of Reading, having worked on livestock farms at weekends and holidays while at school. Kim has worked in meat science since 1992 in the Meat and Livestock Commission and then the Agriculture and Horticulture Development Board (AHDB). An Animal Scientist, and Past President of the British Society of Animal Science, he has particular expertise in the area of carcass and meat quality. As Head of Animal Breeding and Product Quality at the AHDB, Kim has specific responsibility for management of AHDB's meat science activity and programme of work on beef and sheep breeding and genetics.

STEVEN MCPHERSON

He/Him

PhD Student, University of Aberdeen

Monoclonal antibodies | Fungal infection | Medical mycology | Microbiology | Immunology | Antifungal drugs | Antimicrobial resistance

I studied BSc Immunology at the University of Aberdeen from 2014-2018. While studying here, I initially developed an interest for research into combating fungal infection while conducting my honours research project with the Aberdeen Fungal Group. I then worked for Quotient, a company specialising in immunohaematology, for the next four years. In October 2022, I began my PhD at the University of Aberdeen, investigating the use of monoclonal antibodies directed against fungal pathogens for a potential use in therapeutics or diagnostics.



MISS MORAG MILNE

She/Her

Postgraduate researcher, University of St Andrews



Corticosteroid transport | Sodium transport | Renal epithelia

After completing a bachelor's degree in Pharmacology in 2016, I continued my studies at the University of Edinburgh, undertaking a master's in Drug discovery and translational biology. I then worked in industry as an analyst for contract research organizations IQVIA and Charles River. In 2021 I returned to academia to begin my PhD working to define the role of putative transporters for volume-regulating corticosteroids in the collecting duct of the kidney. This is an interdisciplinary project based at the University of St Andrews and the University of Edinburgh.

Dream Job: A job as a researcher working with both industry and academia.

IMPACT STATEMENT

Morag's hard work has greatly benefited myself and my lab group over the past year and a half. Morag has established and optimised methods for producing high-resolution images of the kidneys enabling visualisation of putative steroid transporters alongside known markers, including ion channels critically involved in volume regulation. Her hard work has not only benefited her PhD project, but directly helped undergraduate students who carried out their lab projects with us at the start of the year.

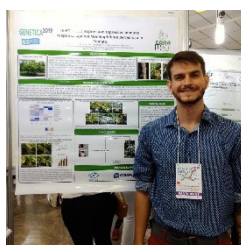
The results of this work may have wider implications for understanding the causes of hypertension. It is known as the "silent killer" because it can remain undiagnosed until further complications such as cardiovascular diseases including stroke, heart failure or chronic kidney disease arise. We are still trying to understand why people become hypertensive, therefore the work that Morag carries out, which is essentially "discovery science", is critical for unpicking the complex physiological systems that become dysregulated in disease. – *Dr Morag Mansley, PhD Supervisor*

RAFAEL MONTEIRO DO CARMO

PhD Student, University of Dundee

**Plant-pathogen interactions |
Molecular biology | Microbiology
| Plant Science**

Hi, I am Rafael, and I have just started my PhD at the University of Dundee. Driven by my curiosity, Science



#eastbio23

and discovery have always been fascinating to me. Before my PhD, I did my BSc in Biotechnology at the Federal University of Sao Carlos, Brazil. I also did an MSc in Biology Applied to Agriculture and Environment at the Center of Nuclear Energy in Agriculture of the University of Sao Paulo, in Brazil, my home country, and an MBA in Business Management, with a focus on Marketing. For my MSc project, I've used tomato as a model to understand the role of microRNA156-targeted transcription factors in the pathogenesis of the fungi *Moniliophthora perniciosa*, which causes disease in *Theobroma cacao* (the chocolate tree). Now, on my PhD project, I am still exploring the ever-evolving field of plant pathology. This time I will investigate the oomycete *Phytophthora capsici*, which affects several solanaceous plants. More specifically, I will further investigate possible interactions of the NMRAL1 protein of *P. capsici* with both DNA and proteins to modulate some biotrophic-associated genes and effector proteins. During my scientific formation, my career goals have changed. While I don't discard the idea of becoming a PI and having a research group, my interest heavily shifted to scientific communication. Since my MBA, when I started to learn more about communication, I've been more and more interested in the spread of scientific discoveries and knowledge to the general public (and the uprising of fake news during covid only increased this flame inside me), being this my dream job.

Dream Job: Scientific Communicator

FATHIMA SHIROOZA MUBARAK

She/Her

PhD Student, University of Dundee

**Light sheet microscopy | Gastrulation
| Image analysis**

I graduated with a BSc. (Hons) in Physics from the University of Peradeniya, Sri Lanka in 2019. Then I worked for a year at the Department of Physics, University of Peradeniya as a teaching assistant. I started my Ph.D. at the University of Dundee in 2021, which is based on a highly interdisciplinary project that spans around the Life Science and Physics interface where I build and optimize light sheet microscopes to study the fundamental principles that control the coordination of complex cell behaviors during gastrulation in chick embryos. My aim is to work in the industry in the future.

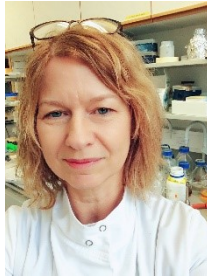


46

PROFESSOR CAROL MUNRO

Professor of Microbiology, University of Aberdeen

Antifungals, | Fungal cell wall | Fungal pathogens



Carol Munro has a personal chair in Microbiology at the Institute of Medical Sciences, University of Aberdeen, where she has based her research career. She works in the area of infection biology and her research focuses on human fungal pathogens that can cause life-threatening infections. Her research investigates how fungal cell surface components contribute to virulence, host interactions and antifungal drug resistance. Her group takes different approaches to study factors that contribute to pathogenicity and fitness such as proteomics, functional genomics, genome sequencing, high throughput phenotypic analysis and uses a range of cellular and ex vivo infection models. She is also developing novel biologics-based antifungal therapeutics that target the fungal cell surface.

Dream Job: The one I have.

DR ZANDILE NARE

She/Her

Study Director, Concept Life Sciences



Biophysics | Drug discovery | Structural biology

Having completed by undergraduate degree in Pharmacology with Industrial Placement at the University of Strathclyde, I decided to pursue an MSc degree in Drug Discovery and Translational Biology at the University of Edinburgh. This was where I was introduced to the world of parasitology, namely trypanosomes, and target based drug discovery. After this experience, I was convinced that I wanted to do a PhD in the same area but I hadn't quite found the right project yet. I also knew that I wanted to work in industry so I took a year out and worked at Abcam in Cambridge as a Lab Technician in the Protein Purification and Conjugation team. During this time I found the perfect project and in 2016 I started my EastBio funded PhD at the University of Edinburgh focused on structure based drug discovery in *Trypanosoma brucei*. Now I work as a Study Director in the Biophysical Sciences team at a Concept Life

#eastbio23

Sciences in Edinburgh where we help clients to move their drug discovery projects forward.

Dream Job: Principal Biophysical Scientist

MR ANDREW NICOLL

He/Him

PhD Student, University of Edinburgh



Stochastic gene expression | Mathematical modelling | Statistics | Dynamical systems

I graduated from the University of York in 2022 with an integrated master's in mathematics (MMath). During this time I became interested in mathematical biology. I started my EASTBIO PhD at the University of Edinburgh, also in 2022, and my project focuses on mathematical models of gene expression. I aim to apply my quantitative, computational, and statistical skills in my future career.

Dream Job: Quantitative Scientist

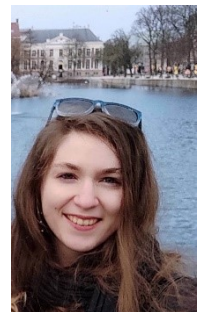
EVANGELIA NOTARI

She/Her

PhD Student, University of Edinburgh

Protein design | Simulations | Machine Learning

After receiving my integrated Masters in Chemical Engineering from the National Technical University of Athens, I completed a Masters in Biotechnology at the University of Edinburgh. I am now doing my EASTBIO PhD at the University of Edinburgh, co-supervised by Julien Michel (School of Chemistry) and Chris Wood (School of Biological Sciences). My project is about building a computational pipeline for the design of multi-state coiled coils with the aid of Molecular Dynamics simulations and Machine Learning. I am also involved in other peptide design projects and science communication.



MR PETER PALMA

PhD Student, University of Stirling

Fish physiology and breeding



I completed a BSc degree in Fisheries at the University of the Philippines Visayas, Philippines and MSc (Aquaculture) at the University of the Sunshine Coast, Australia. I worked as a researcher at SEAFDEC Aquaculture Department in the Philippines, focusing on captive breeding of marine fish species that are valuable to the Southeast Asian region. I am currently based in Stirling, working on my EASTBIO PhD project that investigates the physiological and genetic basis of thermal tolerance in cleaner fish.

Dream Job: Scientist

FELICITAS PAMATAT

She/Her

PhD Student, University of Aberdeen



Wildlife Management | Conservation | Policy | Birds

I completed my bachelor's in Biology at Bielefeld University, Germany, in 2018. During my bachelor's I also studied at Uppsala University, Sweden, and interned at the University of Helsinki, Finland. In 2019, I graduated with an MPhil (Zoology) from the University of Cambridge. Between my Masters and the start of my PhD in 2021, I worked for UCL CBER as an intern and then research assistant and worked on a project at the Department of Zoology, University of Oxford. Currently, I am working closely with NatureScot to integrate my PhD research into practice.

Dream Job: Science Diplomacy

IMPACT STATEMENT

Feli's research has a direct impact on the human wildlife conflict in Orkney. With the rising populations of Greylag Geese, crops like barley (a common cattle food source) suffer, which affects the agricultural economy in Orkney. Feli's research seeks to find a balance between protecting the Greylag Goose populations and mitigating the crop loss of Orkney farmers. – Ms Danielle Jordan, Colleague

HANNAH PEATY

She/her

PhD Student, Moredun Research Institute

Sheep | Gastrointestinal nematode interactions | Organoids | Extracellular vesicles

Prior to starting my PhD, I completed a BSc in Veterinary Bioscience and an MRes in Parasite Control at Aberystwyth University. During my MRes, I worked with the Morphew group and investigated the global phosphoproteomics of *Fasciola hepatica*. I have recently started my PhD studentship at the Moredun Research Institute in partnership with the Roslin Institute. The overall aim of the project is to use ovine abomasum organoids to identify and characterise components of nematode extracellular vesicles (including *Teladorsagia circumcincta* and *Trichostrongylus colubriformis*) which are involved in host: parasite interactions.

DR JULIAN PIETRZYK

Head of Technical Transfer, MiAlgae Ltd

Biotechnology | Fermentation | Scale-up



SOFIA RATGAUZER

PhD Student, University of Edinburgh

Molecular Biology | ESC self renewal | NANOG

After completing a bachelor's in Psychobiology at the Hebrew University of Jerusalem, I continued on to complete a Masters in Structural & Molecular Biochemistry at the Hebrew University of Jerusalem as well. I then worked for a year as a Research Assistant for Centarix. This year I started my EASTBIO DTP PhD based at the University of Edinburgh, focusing on stem cell research.

CARYS REDMAN-WHITE

She/Her

PhD Student, University of Edinburgh



AMR | Antimicrobials | Antibiotics | Livestock | Modelling | Systems | One Health

As an undergraduate at Cambridge University I studied Veterinary Medicine, intercalating to gain a bachelor's degree in Zoology with an emphasis on population dynamics and evolution in 2014. After graduating with my VetMB degree in 2017, I spent three years working

as a veterinary surgeon in clinical practice. I returned to university in 2020 to study a human-oriented master's by research in Epidemiology at Newcastle University. During my MRes I focused on infectious diseases and global health, including modelling the impacts of COVID-19 control measures on other communicable diseases. In 2021 I started my EASTBIO PhD studentship at Edinburgh modelling antimicrobial resistance epidemiology from a One Health perspective, supervised by Dominic Moran, Andy Peters and Adrian Muwonge. I have a broad range of academic and non-academic interests and am drawn to both the interdisciplinary nature of One Health research and the vital importance of its aims.

Dream Job: Professor

ALEX REISS

He/Him

PhD Student, University of Edinburgh

Ecology | Evolution | Phylogenetics



I graduated with a Zoology degree from the University of Sheffield in 2021. For my PhD I use phylogenetic comparative approaches to try and understand the ecology of oak gall wasps, and more generally plant-herbivore interactions.

Dream Job: Llama Herder

MICHAELA RISTOVA

PhD Student, University of Edinburgh

RNA biology | RNA binding proteins | Cellular stress response | Bioinformatics



MR KALVIN ROBERTS

He/Him

PhD Student, University of St Andrews

Perception | Decision Making | Cognition | Psychology | Neuroscience | AI | Multisensory

After completing a bachelor's degree in Psychology at the University of St Andrews in 2021, I started my EASTBIO PhD with Thomas Otto and Ines Jentsch using psychophysics and cognitive neuroscience to understand multisensory processing in the brain. The big picture of the field is how the brain processes

#eastbio23

multisensory inputs and how we create a holistic percept from a wide range of parts.

Dream Job: University Lecturer

MR NICOLA ROSSI

He/Him

PhD Student, SRUC

Plants | Genetics | Physiology

After completing a Master's degree in Plants biotechnology at the University of Perugia in 2020, I worked for a year as an assistant breeder. I then started my EASTBIO PhD based at the University of Edinburgh in 2021, focusing on a project in plant breeding, with the aim of working in the industry of plant breeding/vertical farming.

Dream Job: Plant breeder/vertical farm

MR ALP TEGIN SAHIN

PhD Candidate, University of Dundee

Computational Biology | Molecular Dynamic Simulation | Drug Discovery | Membrane Proteins

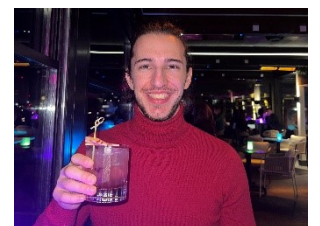


I got my bachelor degree in Bioinformatics and Genetics in 2021. I worked as a Teaching Assistant and was involved in many projects on Drug discovery during my studies. Currently, I am working on calcium and sodium channels and trying to understand their mechanism.

MR JAVIER SÁNCHEZ UTGÉS

He/His/Him

PhD Student, University of Dundee



Bioinformatics | Structural genetics | Machine learning | Function prediction

After completing a 4-year BSc in Genetics at the Universitat Autònoma de Barcelona in 2018, I did a 2-year MSc degree in Bioinformatics for Health Sciences at Universitat Pompeu Fabra, which included a 1-year placement at the University of Dundee. I then started my EASTBIO PhD project on the same group where I did my master's project. The Barton Group in the Computational Biology division. My project focuses on

function prediction on protein-ligand binding sites combining structural biology, genetics, and machine learning.

Dream Job: Well paid with good holidays bioinformatics research

MISS MONIKA SELVAKUMAR

PhD Student, University of Edinburgh

NAFLD | Lipidomics | Mass spectrometry imaging

I earned my bachelor's degree in Pharmacy from India and completed my master's in Drug Discovery and Development from UCL. I then started my PhD based at the University of Edinburgh in 2021, focusing on identifying lipid biomarkers for non-alcoholic fatty liver disease (NAFLD) using Mass Spectrometry Imaging.

MS YUXIN SHEN

She/Her

PhD Student, University of Edinburgh



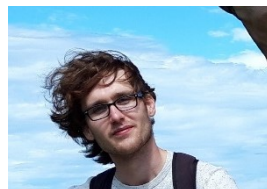
Machine learning | Synthetic biology | Modelling | Computational methods

I obtained a BSc in Chemistry at Fudan University, and an MSc in Chemical Engineering at Imperial College. I worked as an R&D Technologist at Unilever in early 2022, and started my PhD in Edinburgh in October 2022.

Dream Job: Data Scientist in Biotech Industry

MR WILLIAM SMITH

PhD Student, University of St Andrews



Neurmodulation | Game Theory | Calcium Imaging | Teaching | Debating

After being awarded my BSc (Hons) in Neuroscience from the University of St Andrews in 2021, I continued studies in the Pulver Lab to complete my MSc (by Res) in Neuroscience. I remained in the Pulver Lab, starting my EASTBIO PhD at St Andrews in 2022, where I focus on studying motor competition.

Dream Job: Academic and Author

MR THOMAS SMITH-ZAITLIK

He/Him

PhD Student, University of Edinburgh



Bacteriophages for treating bacterial mastitis infections.

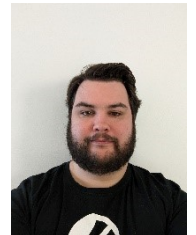
I completed my BSc in microbiology and my MRes in molecular microbiology at Nottingham Trent University. I then worked for one year as a QC microbiology analyst at Meira GTx in London before starting my PhD at the University of Edinburgh in 2022. My project focuses on studying the interactions between bacteriophages and the bovine mastitis pathogen *Streptococcus uberis*.

Dream Job: Science Communication

MR TIM SPANKIE

He/Him

PhD Student, University of Edinburgh



Molecular Dynamics | Python | Alphahemolysin | Nanopores

After completing undergraduate in Chemistry at the University of Birmingham in 2016, I then studied for an MRes at the University of Nottingham investigating antimicrobial resistance using Molecular Dynamics. I then started my EASTBIO PhD based at the University of Edinburgh in 2021, using Molecular Dynamics to study nanopores.

ELEANOR STAMP

She/Her

First Year PhD Student, University of Edinburgh



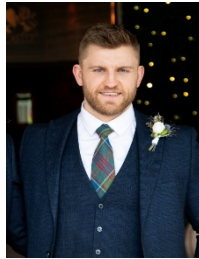
Neuroscience | Genetics | Cognitive Decline | Protein Trafficking

I completed my undergraduate degree at Cardiff University, and halfway through this, I was given the opportunity to move to Sweden and work as a research assistant for a year at Lund University. I then moved back to Cardiff in 2019 to finish my degree. During the pandemic, I worked as a science technician

at a secondary school designing experiments for the kids.

MR ROB STEWART

PhD Researcher, University of Edinburgh



Studying the role of post-translational modification in the regulation of immune response in Atlantic salmon.

After completing a 5 year stint at the University of York, including an undergraduate Biochemistry degree, placement in industry and a masters I moved into a pharmaceutical company for 3 years. Whilst working in industry I saw the value of a PhD and wanted to challenge myself to obtain one. My interest in fish (fishing, fish farming and aquaculture in general) led me to the Roslin institute and my background in proteomics led me to pick my current project.

Dream Job: External innovation role in aquaculture company, learning about innovation and discussing big ideas

KALLEN SULLIVAN

PhD Student, University of Edinburgh

Parasitology | Aquaculture | Oysters



After completing a bachelor's degree in Marine Biology at the University of St Andrews in 2018, I worked for two years as a research assistant at the Johns Hopkins School of Medicine. In 2021, I went on to complete a master's degree in Applied Marine and Fisheries Ecology at the University of Aberdeen; and then worked as a research assistant at Woods Hole Oceanographic Institute. I am now in the first year of my PhD focused on a micro-cell oyster parasite, known as Bonamia, at the Roslin Institute.

BEN THOMPSON

They/Them

PhD Student, University of St Andrews

Spatial representation | Visual perception | Navigation | Neurodegenerative disorders



I started my academic career in 2012, studying Medicine at the University of Dundee. After three years, I decided to venture into laboratory science #eastbio23

instead and graduated in 2016 with a BSc in Neuropharmacology. I then studied a Masters of Neuroscience at St Andrews in 2018 and, after adventuring abroad to teach for a few years, returned to start my PhD in 2021. My research focuses on spatial representations in rodents and humans, although in the future I hope to use neuroethology to explore what the myriad fantastic navigational and sensory abilities of different species can teach us about the way we and other organisms understand and navigate our world.

Dream Job: Struggling Writer

MISS MARY TOZER

She/Her

PhD Researcher, University of Dundee

T-cells | Immunology | Flow cytometry

I completed my BSc in Biological Sciences and MSc in Biomedicine at Lancaster University, before enrolling in the Thames Water Scientists' graduate scheme in 2019. During the COVID pandemic, I moved to Kingston Hospital to work in the Clinical Blood Sciences lab supporting Biomedical Scientists to analyse patient blood samples and COVID tests. I then began my EASTBIO PhD at the University of Dundee in 2021 with an exploratory project to study IL-33 signalling in T-cells.

Dream Job: Museum exhibition curator

MISS LUCY TURNBULL

She/They

PhD Student, University of Edinburgh

Plant development and evolution | Gene editing



In 2021 I graduated from the University of York with an integrated Masters in Biology, with a focus on plant sciences. I then moved to industry, working as a lab technician in the GEIGS® team at Tropic Biosciences for over a year. Since 2022, I have been using my acquired skills in molecular plants sciences to undertake a PhD at the University of Edinburgh, investigating gene duplication in Begonia.

Dream Job: Research and Development in crop sciences

IMPACT STATEMENT

Lucy is developing gene editing for the mega-diverse genus *Begonia*. She is setting up pipelines to establish tissue culture protocols in any *Begonia* species (they all have different requirements) and will produce the first CRISPR protocols for this group. Lucy's work will allow us to examine functional genetic changes which might underlie the generation of tropical diversity. It will also help conserve rare and difficult to cultivate *Begonia* species through tissue culture. – *Dr Catherine Kidner, Colleague*

MR SULEYMAN MERT UNAL

He/Him

PhD Student, University of Edinburgh

Deep learning | Small-molecule | Protein | Biocatalysis

After completing a bachelor's degree in Molecular Biology, Genetics and Bioengineering at the Sabanci University in 2019, I completed an MSc degree in Synthetic Biology & Biotechnology at the University of Edinburgh in 2020. My dissertation topic was on the identification of hypothetical/unknown genes in cyanobacterial species using bioinformatics approaches. I am currently undertaking my PhD on binding small molecules to proteins using deep learning.



MR DANIEL UNDERWOOD

He/Him

PhD Student, University of Aberdeen

Immunology | Microbiology | Cell Biology

In 2015 I started my bachelor's degree in Biomedical Science at Oxford Brookes. This was followed by a master's at the London School of Hygiene, becoming more specialised studying 'Immunology of Infectious Diseases'. I started my EASTBIO PhD at the University of Aberdeen in 2019, and after some changes and challenges I am working to complete my study into the protein p62 and its relationship with the bacteria *Salmonella*.



Dream Job: Academic

#eastbio23

PROFESSOR GERBEN VAN OOIJEN

Reader in Chronobiology, University of Edinburgh

Cellular circadian rhythms

After receiving a PhD for at the University of Amsterdam in 2008, I joined the Centre for Systems Biology at Edinburgh, where I studied cellular circadian rhythms across eukaryotes. I then secured a University Research Fellowship from the Royal Society, London, to continue this research. My lab employ the model plant *Arabidopsis* and the unicellular alga *Ostreococcus tauri*. The latter is used as a starting point for comparative biology of clocks across all eukaryotes.

Dream Job: EASTBIO Director

MX LI VEIROS

They/He/She

PhD Student, University of St Andrews

Predator inspection | Cooperation | Behavioural ecology

I completed my Biology BSc degree in 2020, specializing in the Environmental Marine field at the Faculty of Sciences, University of Lisbon. I started working with the education department of Lisbon Zoo part-time during my first degree, and until 2022. After my Animal Behaviour MSc degree with the University of St Andrews, I also worked teaching Biology at a secondary school level before starting my PhD, in St Andrews as well, last September (2022). My project is about whether fish cooperate to inspect predators, and I want my career to continue within behavioural ecology research in the future.



Dream Job: Behavioural Ecologist

EVELINA VENCKUTE

She/Her

PhD Student, University of Edinburgh

Artificial metalloenzymes | (bio)catalysis | Sustainable synthesis



I hold a BSc (Hons) Chemistry degree from the University of Aberdeen (Class of 2019). During my undergraduate years I had a chance to study abroad at the Hong Kong University of Science and Technology as well as take on summer internships in the field of medicinal chemistry at Thermo Fisher Scientific and Vilnius University. I obtained an MSc Medicinal and Biological Chemistry degree from the University of Edinburgh in 2020 where I then stayed for my EASTBIO PhD project within Jarvis group. My PhD studies focus on artificial metalloenzymes for selective catalysis.

CHRISTOPH WAGNER

He/Him

PhD Student, University of Edinburgh

Cell-free | Modelling | Synthetic cell | Microfluidics | Regeneration



I completed my bachelor's degree in Quantitative Biology at the University of Cologne and Heinrich-Heine-University Düsseldorf, which was followed immediately by a master's degree in Synthetic Biology also in Düsseldorf, both of which in the Institute for Synthetic Biology under Prof. Matias Zurbriggen. During my master's degree, I conceptualised a startup company together with my PI and supervisor, which finished first place in the university's annual idea competition. After completion of my master's degree, I worked on a Neuroengineering project for biomedical rehabilitation in the group of Prof. Nitish Thakor at the Johns Hopkins University in Baltimore. In October 2022, I started my EASTBIO PhD based at the University of Edinburgh, with a project on the ability of cells to self-regenerate their own components. Towards this aim, we combine microfluidics experiments with modelling to understand the parameters and dynamics governing regeneration of transcription-translation systems.

Dream Job: Group leader

MISS ERIN WATSON

She/Her

PhD Student, University of Edinburgh

Macrophages | Regeneration | Irradiation | Salivary Gland

#eastbio23

I completed my undergraduate degree in 2018 at the University of Edinburgh specialising in Developmental and Regenerative Biology before undertaking an MRes and the University of Bristol in Cellular and Molecular Medicine in 2021/22. In October 2022 I started my PhD on the EASTBIO programme investigating whether macrophage phenotype can be manipulated to promote regeneration in the salivary gland after irradiation.

MISS MICHAELA WEGG

She/Her

PhD Student, University of Edinburgh

Eyes | Tuberculosis | Cows | Ocular



I graduated in 2015 with a distinction in veterinary science from the University of Liverpool, whilst there I intercalated onto a MRes in clinical science (veterinary science). I worked in first opinion veterinary practice for a couple of years before undertaking two ophthalmology focused internships and worked as an ophthalmology specialist in a referral centre. Alongside this I achieved my post graduate certificate in veterinary ophthalmology, which I passed with a distinction. During this time I managed to get several publications based on ophthalmology topics. When the PhD focused on ocular tuberculosis came to my attention I jumped at the chance to further knowledge in this area, I started the PhD in 2021.

Dream Job: No idea

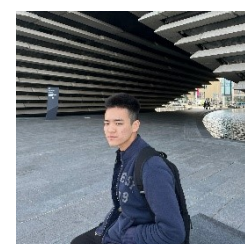
MR WYLAN WONG

He/Him

PhD Student, University of St Andrews

Photocatalysis | Biocatalysis | Bioluminescence

I completed a bachelor's degree in biotechnology at Imperial College London in 2021, during which I spent a year in Vienna Biocenter working on Drosophila selfish genetic elements. I then started my EASTBIO PhD based at the University of St Andrews in 2021, focusing on combining photocatalysis and biocatalysis



to develop green strategies for small molecule synthesis.

Dream Job: Contract researcher

RAFFEE WRIGHT

PhD Student, University of Edinburgh

Embryo Development | Stem Cell Research | Molecular genetics



I graduated from Brown University in the United States in 2021. During my time at university I worked in several labs, including, but not limited to, the Pawlowski lab at Cornell University, the Johnson lab at Brown University, and the Kaun lab at Brown University. After graduating with a bachelors of science degree in Behavioral Genetics, I was selected to participate in a National Institute of Health sponsored post-baccalaureate program at the University of Pennsylvania in the lab of Paul Gadue. Here I undertook a project exploring the genetics of diabetes during development using stem cells and various other methods. I started my EASTBIO PhD at the University of Edinburgh in 2022 in the lab of Valerie Wilson where I am focusing on understanding the development of the early embryo. I aim to continue working in the academic field in the future in understanding the genetic underpinnings of embryogenesis.

Dream Job: Molecular genetics researcher specialized in artificial embryogenesis

MR QIFAN (LEO) YIN

He/Him

EASTBIO PhD Student, SRUC

Hyperaccumulation | Alpine Pennycress | Nickel | Agromining | Phytomining | Heavy Metal



I graduated in 2020 with a BSc in Environmental Science from HKBU, and in 2021 I finished the MSc in Environmental Protection and Management from the University of Edinburgh / SRUC. I then started my EASTBio PhD based at SRUC and the School of Geosciences of the University of Edinburgh, focusing on assessing the nickel hyperaccumulation ability of

different alpine pennycress ecotypes in the overall agromining process.

Dream Job: Researcher and athlete (if possible, Scholar-Athlete)

MISS YIFANG YUAN

PhD Student, University of Edinburgh

Neural imaging | Memory | Hippocampus | Mice study



After completing a bachelor's degree in Electronic Engineering at the Tsinghua University, I worked for a few years in a game company. I then finished my master degree in Neuroscience in the University of Edinburgh in 2021 and started my EASTBIO PhD in the same year, focusing on a project in imaging neuron activities in freely behaving mice with a state-of-the-art camera.

Dream Job: Panda Keeper

