Polyp Patrol 2: On the Move

Paulie the Polyp

Project Lead: Sara Samir Foad Al-Badran

Supported by: Dr. Emma Parsons, Arwen Damavandi

School of Cancer Sciences, University of Glasgow

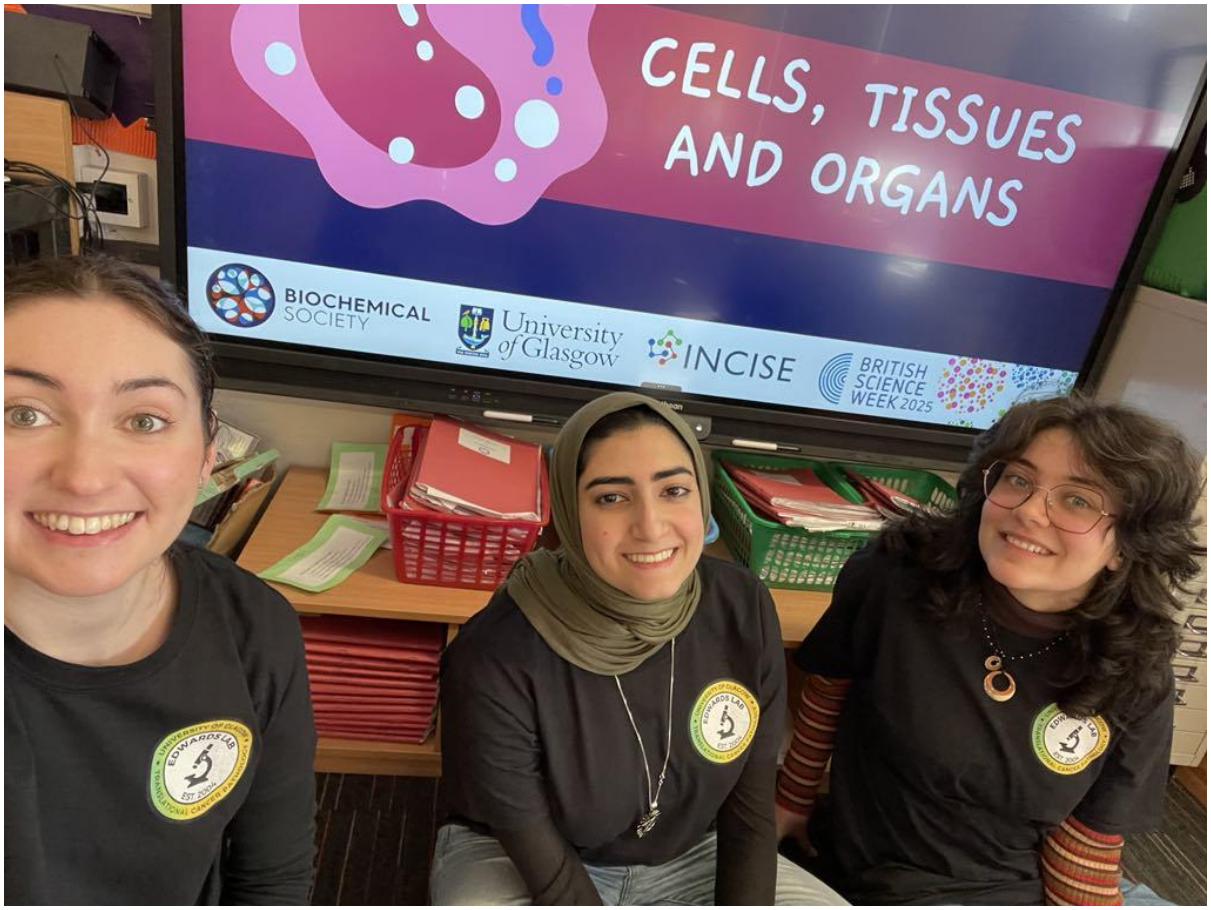
Delivered during British Science Week 2025 at Corpus Christi Primary School, Glasgow

Introduction

“Polyp Patrol 2: On the Move” is an outreach workshop developed by Sara Samir Foad Al-Badran (final-year PhD researcher) and Dr Emma Parsons (Resources and Outreach Manager) from the Translational Cancer Pathology Group led by Professor Joanne Edwards, School of Cancer Sciences, University of Glasgow.

This workshop built on our previously successful tabletop public engagement activity “Polyp Patrol”, which was funded by the University of Glasgow’s College of Medical, Veterinary and Life Sciences Innovation, Engagement and Enterprise Public Engagement Delivery Fund. The original activity was delivered during the “Explorathon” festival in partnership with Glasgow Doors Open Days in September 2024.

Thanks to support from the Biochemical Society Scientific Outreach Grant, we were able to expand this activity into a 1.5-hour, multi-station workshop, delivered to two Primary 5 classes at Corpus Christi Primary School during British Science Week 2025. The workshop was delivered by Sara Samir Foad Al-Badran, Dr Emma Parsons and Arwen Damavandi (final-year undergraduate student on exchange from Radboud University, The Netherlands).



Evaluation

Aims and Objectives

Our primary aims for "Polyp Patrol 2: On the Move" were to:

- Inspire an interest in STEM subjects, particularly biological sciences, among primary school children.
- Introduce core concepts of cell biology in an accessible, engaging format using hands-on materials.
- Encourage participation from underrepresented groups in STEM, particularly girls and children from disadvantaged or multilingual backgrounds.

We are pleased to report that our workshop successfully met these aims. The children were enthusiastic, asked thoughtful questions and engaged with each station of the workshop. Notably, female students demonstrated equal or higher engagement than male students which may have been positively influenced by the fact that the workshop was delivered by three female scientists.

Corpus Christi Primary School was specifically selected due to its diverse student population: approximately 53% of pupils come from the most deprived backgrounds and 40% have English as an additional language. The ability of Sara Samir Foad Al-Badran to speak Arabic allowed her to connect more effectively with some students, enhancing inclusivity and engagement.

Workshop Activities

The workshop was divided into three stations, each focusing on a different aspect of cancer biology and delivered by a member of our team:

1. Microscopy

Children viewed real human colon tissue under a microscope to identify differences between healthy and cancerous cells. Laminated images supporting students struggling to use the microscope were also available. This station also included an interactive activity where students worked together to place digestive organs on a human body poster.

2. Polyp Removal

Using a cat tunnel representing the colon, children identified and removed Velcro-attached balls (representing pre-cancerous growths, or polyps) using tongs. This visual and physical representation included conversations about early detection of polyps and cancer.

3. Cell Modelling

The children created healthy and cancerous cells using Play-Doh and arranged them in Petri dishes to take home. This take-home element encouraged them to share what they had learned with family members.

Each group rotated through all three stations. The workshop concluded with each child sharing one fact they had learned and receiving a sticker for participation. Feedback from both students and teachers was overwhelmingly positive.

Reflections and Learning Outcomes

We believe the workshop went exceptionally well from the perspectives of those who delivered it and from those who took part. The structured rotation ensured each child experienced all stations and having three people delivering the activities allowed for high levels of engagement and supervision.

What Worked Well:

- Finding out the children's existing knowledge by asking questions first worked really well.
- High engagement and enthusiasm from students due to hands-on nature of all stations.
- Representation and diversity among those delivering the workshop encouraged participation from female and multilingual students.
- Clear division of tasks between those delivering the workshop.
- Running the workshop twice in one day allowed tweaks to be made for the second class.

Areas for Improvement:

- In our grant application, we described employing quantitative evaluation methods. Unfortunately, on the day we forgot to implement these. However, the qualitative feedback we received from students and teachers was very positive. In future, we will ensure proper feedback forms or evaluation tools are used to capture both quantitative and qualitative data.

- Greater lead time is needed to secure participation from schools. Of the three schools contacted, only one responded.
- In future, we will advertise our workshops in advance on the STEM Ambassadors platform and email more primary schools if emails do not receive responses.

Impact of the Outreach Grant

The Biochemical Society Scientific Outreach Grant enabled us to:

- Expand and deepen the original "Polyp Patrol" activity into a comprehensive workshop.
- Support Arwen Damavandi's public engagement training as part of her undergraduate placement at the University of Glasgow.
- Successfully apply for additional funding and public engagement training through the Amplify 2 training programme in collaboration with Glasgow Science Centre. Through this funding we were able to purchase our own microscope (previously borrowed).
- Boost our research group's public engagement visibility:
    - Dr Emma Parsons was accepted into the STEM Seedlings programme, a Scottish science outreach programme organised by the RSE Young Academy of Scotland to enhance the visibility of female role models in STEM and deliver engaging science workshops to Scottish primary schools, focusing on underprivileged areas.
    - Dr Emma Parsons presented the workshop as part of a talk at Scottish Public Engagement Network (ScotPEN) 2025 and was invited to speak at Glasgow Science Festival: A Body of Science.
    - Dr Emma Parsons was invited to deliver an outreach session at the Glasgow City Region Innovation Showcase 2025.

Future Plans

We are enthusiastic about delivering "Polyp Patrol 2: On the Move" again in the future. The format was successful and well-received, and British Science Week was a great time to engage with local schools. For future delivery, we plan to:

- Broaden outreach by promoting the workshop through the STEM Ambassadors website and by reaching out to other schools.
- Explore opportunities to expand the workshop to additional age groups.

In addition, we are currently:

- Developing a related tabletop activity “Mighty Microbes” which will be delivered at Glasgow Science Centre in summer 2025.
- Awaiting a decision on our application to deliver “Mighty Microbes” at Explorathon 2025.

The support of the Biochemical Society has greatly enhanced our skills in designing and delivering age-appropriate public engagement activities and strengthened our team’s profile in science communication.

University of Glasgow

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