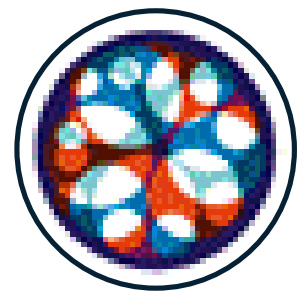




2022

BIOSCIENCE DISCOVERY DAY

A report by Lizzie Hogben
(Warwick BioSoc Academic VP)



Sponsored by:
Biochemical Society



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Warwick School of Life
Sciences

OUR VISION AND GOALS

Where it all began...

In 2021, our previous President, Arianwen, applied for a grant from the Biochemical Society to fund our Lessons in a Box - an initiative designed to provide an interactive and engaging learning experience to state schools and encourage a love for bioscience. As Secretary I assisted in planning some of these events. However due to COVID restrictions and concerns from schools, we were unfortunately unable to provide as many of these sessions as we had hoped, and instead decided to save the grant for bigger and better things.

So instead, the Bioscience Discovery Day was an event curated for disadvantaged students in the Coventry and Leamington spa areas, from schools with low Ofsted ratings. We planned this event for the 9th November 2022, in the middle of National Chemistry Week!

Our goals for the Bioscience Discovery Day:

- To provide an engaging learning experience
- To give students an insight into life at University
- To spark an interest in Bioscience
- To encourage and widen participation in Higher Education

Our plan

Liaising with Warwick University's School of Life Sciences, we planned a day of taster lectures and lab work. We invited ~50 students from Ernesford Grange Sixth Form, Stoke Park School and Champion School to experience many of the key elements of doing a Life Sciences degree. We organised talks from current undergraduate students, lecturers and advisors to provide the students with a better insight into University life and guidance for undertaking a degree in Life Sciences. The labs were designed to reinforce the knowledge learned across their A-level curriculum, whilst giving an insight into more interesting topics and applications of the techniques used.

DAY SUMMARY

Arrivals

9:30am to 10am

Welcome Talk

10.10am to 10.20am

Talk: A day in the Life of a Life Sciences Student

10.20am to 10.40am

Introductory Lab session on Bacteria

10.50am to 11.40am

Lunch

11.50am to 12.30pm

Taster lecture on DNA - Dr Katrine Wallis

12.40pm - 1.10pm

DNA and Gel electrophoresis Lab

1.20pm-2.30pm

Talk: Preparing for University

2.40pm-3pm

9 NOVEMBER 2022

9.30AM - 3PM

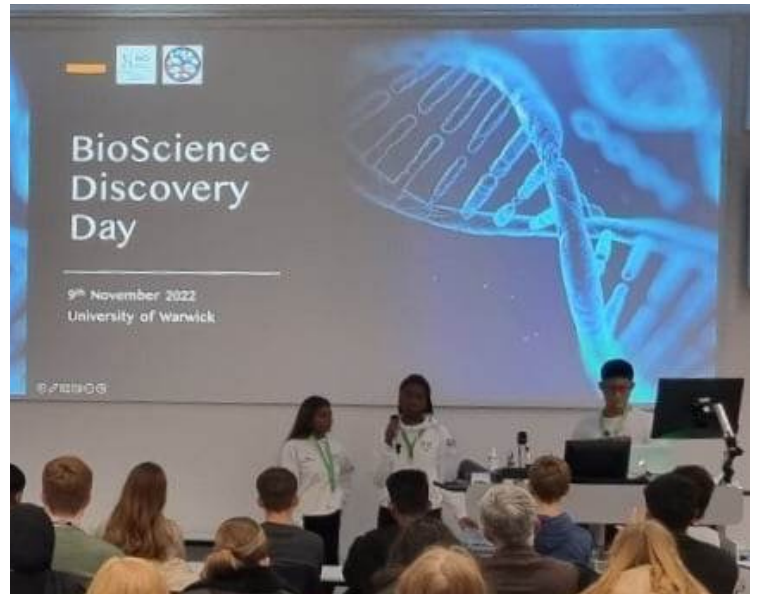
UNIVERSITY OF WARWICK,
COVENTRY, CV4 7AL



ARRIVALS AND WELCOME TALK

Students were welcomed to the University with refreshments and encouraged to socialise with students from different schools with icebreakers.

When everyone had arrived, the students were given a safety talk before being briefed on the activities of the day outlined in the Day Plan (see [Page 3](#)).

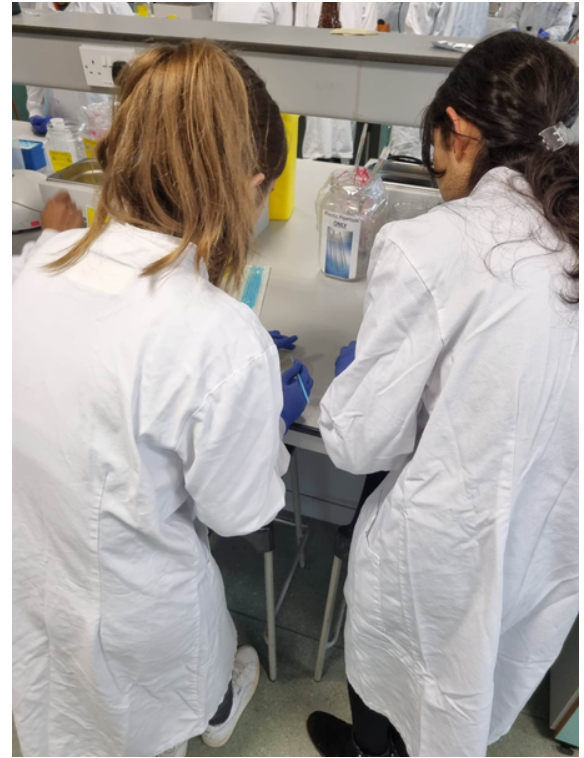
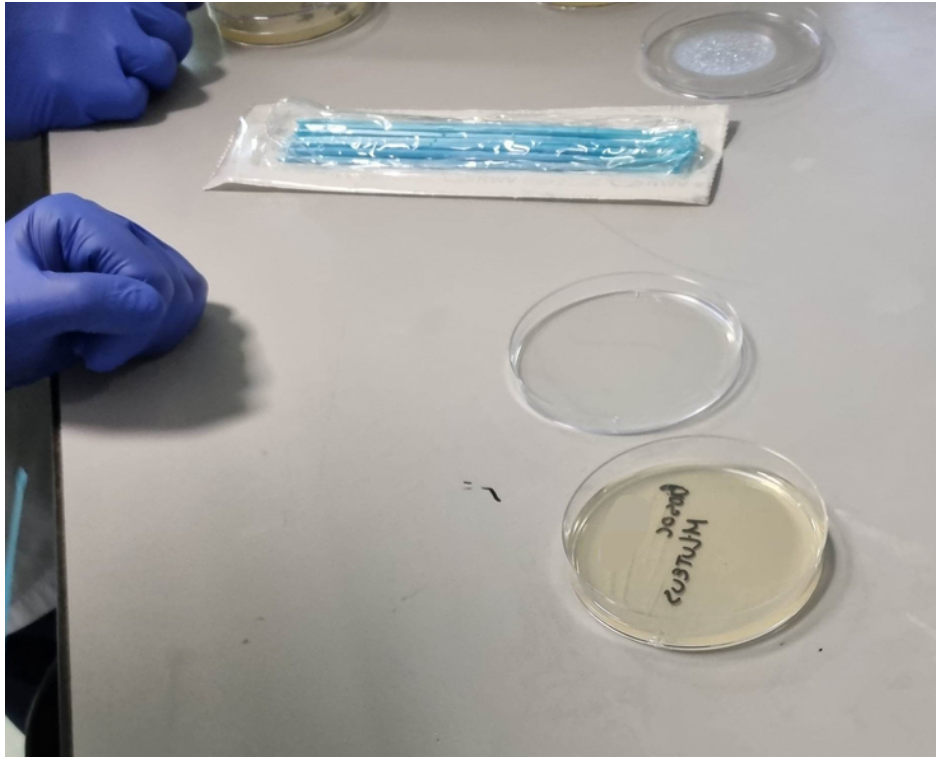


A DAY IN THE LIFE OF A LIFE SCIENCES STUDENT



Undergraduate volunteers, Katie and Emily, gave a talk on what it is like to be a student at University. They discussed some of their experiences at Warwick, and how this compares to Universities that their friends are at. Their talk provided students with a glimpse into life as a student and what it's like to study Life Sciences in Higher Education.

INTRODUCTORY LAB SESSION ON BACTERIA



Students were taught the quadrant streaking method as a way to culture bacteria and achieve individual colonies. Students were briefed on lab safety procedures and given a short introduction to the bacteria they would be swabbing – Micrococcus luteus and Serratia marcescens, as well as the importance and need to correctly swab bacteria in a clinical or research setting. We then encouraged students to look at some pre-prepared cultures (made in advance by undergraduate volunteers) under a microscope and helped them to identify some structural features of bacteria. Students were able to alter the focus and better understand the features of the microscope to visualise the bacterial cells clearly.

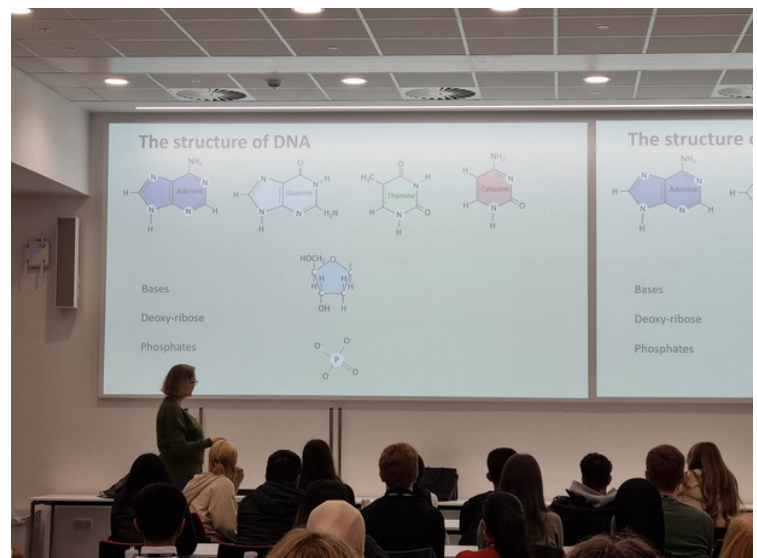
This session was designed to provide an introduction to lab work so students could feel comfortable using lab equipment and becoming accustomed to a research lab setting.

LUNCH

Particularly with the cost of living crisis, one of our priorities was to ensure that there was no financial barrier to attending. So that they could concentrate and fully enjoy the Bioscience Discovery Day, we provided free transport to and from their schools, and also provided them with refreshments and packed lunches.

TASTER LECTURE ON DNA

Dr Katrine Wallis, an associate professor at the University of Warwick, delivered a taster lecture on DNA structure and practical techniques that take advantage of the properties of DNA, such as gel electrophoresis. She discussed some interesting examples of how this technique could be applied, such as in forensics and paternity tests. This lecture set up the students for their afternoon lab session which would be demonstrating gel electrophoresis in practice.

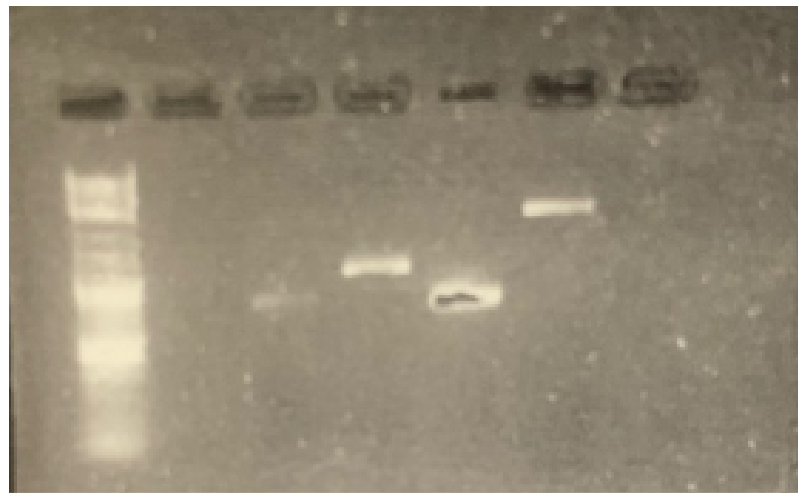


DNA AND GEL ELECTROPHORESIS LAB

Using coloured water, this laboratory taught students some laboratory basics such as how to use a Gilson pipette. Applying the knowledge the students had learned in their taster lecture from Dr Katrine Wallis, students were able to extract DNA from strawberries! They then tried loading a gel before we demonstrated how gel electrophoresis works. The lab session ended with a worksheet exercise to discover "whodunnit" in a mock forensic investigation!



DNA!



PREPARING FOR UNIVERSITY

The final session of the day was a talk giving advice to the students on university applications and UCAS. We invited UoW's Widening Participation Officer, Rohan Lourdelet, to present this talk.



REFLECTIVE SUMMARY

The positive feedback we received from students and their teachers, as well as undergraduate volunteers and the University staff that helped with the organisation of this project, meant that this event could be considered a great success.

From discussions with students on the day, there was an atmosphere of curiosity and excitement. Most, if not all, of the students had never experienced a University Lab and the equipment used during the practical sessions of the day. I believe this event helped to inspire the students and enable them to better envision themselves as a student studying a Life Sciences degree. Events like this are invaluable in widening participation for groups like this in higher education.

Our event also received a lot of praise from the school teachers in attendance. It was clear that this event had provided the engaging learning experience that we had set out to achieve, and will hopefully be a memorable experience that will aid their revision of their A-Level Biology curriculum.

From an organiser's perspective, myself, Semi and Ranu felt that it was a really enriching experience that developed our skills in organisation and time-management, among others. For this event, we recruited 27 volunteers that worked in shifts throughout the day and provided them with safeguarding training. The skills learned from this experience will be transferrable to other outreach events we hope to organise in future, as well as in all of our general lives.



THINKING AHEAD

In future, we hope to be able to run an annual Bioscience Discovery Day. This event was the first of its kind from Warwick BioSoc and the knowledge gained will be passed on to next year's elected outreach officers. While it took a lot of organisation, doing another event like this is certainly achievable with enough funding. Perhaps next year, we can expand the event to include more students. This year, we had around 50 students in attendance, but we could aim to expand it to accommodate 100 next year.

Until the next Bioscience Discovery Day, we are supporting local schools with our Topic in a Box initiative. In early 2023, we will be visiting local primary and secondary schools to showcase new boxes we have created, for example one that will teach young students about the skeleton and other aspects of the human anatomy.

ACKNOWLEDGEMENTS

On behalf of Warwick BioSoc, I would like to thank Prof. Kevin Moffat, Georgia Lavender, Gerrie Keene, Amanda Bishop and Martin Mik for their support and guidance in the organisation of this event. We are immensely grateful to Dr Katrine Wallis and Rohan Lourdelet for volunteering to share their knowledge with the school students. I would also like to thank all of our undergraduate volunteers for their help on the day, especially Katie and Emily for leading the first talk of the day. Finally, this event would not have been possible without the sponsorship and support from the Biochemical Society and UoW School of Life Sciences.