



**Community Board
Aylesbury**

AYLESBURY STEM PROGRAM UPDATE:



[Dr Charlotte Edwards-Gayle speaking to 500 students at The Grange on 2nd November 2022]

We are now halfway through our efforts to raise the enthusiasm and opportunity for STEM in Aylesbury secondary schools through the initiative started in October. With the blessing of The Mars Society UK, The Genetics Society, and International Space School Education Trust (ISSET) we are conducting a monthly STEM program across the following schools:

- The Grange
- Mandeville
- St Michaels

- Waddesdon
- Aylesbury Vale Academy
- Aylesbury Grammar School
- Aylesbury High School
- Sir Henry Floyd Grammar School

These 8 schools afford the opportunity to bring the brightest and best of science in the UK to over 10000 students. Priority is given to the lower-ranked schools, but special thanks is afforded to Aylesbury High School and Aylesbury Grammar School for hosting the after school events and taking on the burden of the administration and safeguarding of the program.



**HARDING HALL
AYLESBURY HIGH
SCHOOL
4-6PM**

DATES

5/10

01/03

2/11

23/05

7/12

14/06

11/01

05/07

8/02

[Program dates and after school venue details]



[Dr Zachary Ardern speaking to year 9 and the 6th form at Henry Floyd on February 8th 2023]

The speakers so far have been the following:

<u>Date</u>	<u>Speaker</u>	<u>Bio</u>
5 th October 22	Alex Wood, Patrick Rennie	Alex is an engineer with the military who formerly worked on the electron microscope. Patrick is a rocket scientist and president of The Mars Society
2 nd November 22	Dr Charlotte Edwards-Gayle	PhD biochemist and research team leader at Diamond Light Source
7 th December 22	Dr Beth Healey	Medical Doctor for the European Space Agency who spent 14 months in Antarctica
11 th January 23	Sigourney Bonner and Laura Gonzalez	Sigourney is a PhD cancer researcher at Cambridge University, a Forbes 30 under 30 and founder of Black In Cancer. Laura is a lead on satellite operations for Catapult UK
8 th February 23	Dr Zachary Ardern and Dr Anke Arentsen	Zach is an evolutionary geneticist at The Sanger Centre in Cambridge who researched the evolution of COVID-19 variants. Anke is a galactic archaeologist and astrophysicist at Cambridge University Observatory
1 st March 23	Professor Dr Tom Monie	Professor of Immunology at Cambridge University
23 rd May 23	Sunhil "Sunny" Dhillon and Dr Kyren Lazarus	Sunny is an engineering PhD researcher exploring improving durability and traction in Mars rovers. Kyren works for AstraZeneca and is a leading researcher in breast cancer genetics
14 th June 23	Professor Dr Lindsay Compton	Lindsay is professor of plant genetics at Birmingham University
5 th July 23	NASA astronaut Dorothy Metcalf-Lindenburger	Dorothy flew on a construction mission to the International Space Station

		<p>on the space shuttle Discovery in 2010 on mission STS-131. It was the first flight in history where more than half of the crew were female.</p>
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[A school board display of all the events and guests so far – February 8th 2023]

The program features two components:

1. I drive the guests throughout the day to speak at different schools about their research, careers in science, and to take questions from the students.
2. After school we hold an event for students everywhere to hear an extra session with our guest(s) held at Aylesbury High School where we also do a book giveaway, share more of the program with the students and allow for more questions.

The program began in October with a reach of about 2000 students per month, but by December this had doubled when Dr Beth Healey spoke to around 4000 students in one day (almost a third of all students in town). We now typically visit around 5 schools per day and see 3000-4000 students.



[Dr Anke Arentsen speaking to students from 4-5 schools after school on February 8th 2023]



[Interviewing Dr Charlotte Edwards-Gayle and taking questions from around 500 students at Aylesbury Vale Academy on 2nd November 2022]



[Dr Beth Healey taking assembly at Waddesdon for 1300 students on 7th December 2022]



[Alex Wood with a year 12 physics group. The head of science reported that after his visit, takeup of electronic engineering doubled in module choice for year 12. October 5th 2022]



[Laura Gonzalez talking about careers in the space industry to a mixture of AGS, AHS, Grange and Waddesdon students at Aylesbury High School – January 11th 2023]



[Sigourney Bonner talking to a mix of students after school about cancer research on January 11th 2023]

Current Impact:

The response from the schools and students has been overwhelming. It has far exceeded my initial expectations and without question we must ensure that we build on this program each year. The guests have also enjoyed it with every one of them saying they would like to return and speak in Aylesbury schools again. The calibre of guests and number of students reached for the cost of the program has been fantastic. At cost of £300-£500 per month for a reach of 4000 students we are being incredibly efficient.

Amongst the indicators of success we have seen:

- A steady 70-200 coming to the after school program from 6 different schools
- A large number of staff getting involved in the after school program
- We have given away dozens of books on careers in science to students that reflect the career of the monthly guest
- Schools have promoted the event more heavily as it has gone on
- The number of questions taken by students has steadily increased since October
- General enthusiasm for the monthly events has risen in each school
- Specific takeup of certain subjects has increased with the visit of certain guests

We shall find out next academic year what the results have been in terms of quantifiable measures such as GCSE/A-level take up and university/job applications, though these are hard to gauge.

Perhaps the greatest indicator has been the appreciation and engagement of the schools and staff to the program.



[Dr Beth Healey speaking to year 7 at The Grange on 7th December 2022]



[Dr Beth Healey speaking to the science students at Mandeville School on December 7th 2022]

Our personal highlights of the year:

- Dr Beth Healey speaking to 4000 students across 5 schools on 7th December
- Dr Charlotte Edwards-Gayle giving out books on careers in biochemistry and antibiotic resistance and taking questions for over an hour at both AVA and AHS on November 2nd
- Alex Wood addressing 150 students after school on the engineering challenges that need to be solved for humans to go to Mars
- Sigourney Bonner talking to 3000 students on careers in science and equality for women and ethnic minorities in STEM
- Dr Anke Arentsen and Dr Zachary Ardern double-act at Sir Henry Floyd and AGS/AHS to speak to twice as many students at the same time

Hearing so many young people come to ask questions about their university options and career paths, sharing their own dreams about working in scientific research, medicine and engineering, and lighting up with excitement at the work being done by our guests has been the biggest highlight for me.

The best is yet to come as we have two first-class university professors, a Mars engineer and a NASA astronaut coming to finish the year!



MARS Society UK

Scientists - Researchers -
Engineers - Astronauts

Free entry

Fellow of Christ's College
Focus on Innate Immunity

Prof Dr Tom Monie

Professor of Immunology
University of Cambridge

4PM - 6 PM

WEDS March 1st

Harding Hall,
Aylesbury High
School



UNIVERSITY OF
CAMBRIDGE

[Our March guest, professor Tom Monie from Cambridge University]



[NASA astronaut Dorothy Metcalf-Lindenburger with the Space Shuttle Discovery ahead of STS-131. Dorothy will visit all 8 schools from 3rd-5th July to finish off the year.]

Thank you for your interest and support,

Kindest regards

Sam McKee