

Final Report: She Talks Science 2024, Murray Edwards College**INT Widening Participation & Induction Fund (WPIF)**

December 2024

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1. Summary

We are very grateful for the Isaac Newton Trust's support of the Murray Edwards College 2024 She Talks Science programme of outreach activity, running through to August 2024. The project supported by this grant enabled expansion and extension of our STEP Summer School, provision of a Mathematics Taster Day, provision of a Medicine Taster Day, and a travel fund for participation in our She Talks Science events in Cambridge where financial barriers might exist.

While She Talks Science has been managed by Murray Edwards College since 2019, this project supported the College in realising significant new and enhanced elements, as well as new partnerships with University departments. The Delivery Report (section 2) contains information about the different project elements delivered, as well as participation.

The STEP Summer School was attended by 48 year 12 students, completing a residential course of lectures, workshops and supervisions over 4 days. Two new subject taster days were planned – for mathematics and medicine. Mathematics was planned and delivered in partnership with the outreach team at the Centre for Mathematical Sciences, but ended up solely recruited for by the College - with a single attendee. Medicine was delivered in partnership with Fellows and students from the College's own Medical Society – with 85 participants attending the day event.

The travel fund for She Talks Science supported 114 participants' journeys, providing a vital support for those students from less financially advantaged widening participation backgrounds.

Participant feedback from events across the programme was overwhelmingly positive, demonstrating significant impact on attitudes and confidence towards applying to Cambridge. Analysis is detailed in Appendix 1. Tracked applications from participants for 2025 entry to Cambridge are detailed in Appendix 2.

Overall, this project increased overall participation in the She Talks Science programme by 86 individuals across the two new subject taster days.

2. Delivery report

a. Redevelopment and expansion of the Murray Edwards College STEP Summer School

Extension of the STEP Summer School realised a long-held ambition of the course director and tutors to add specialist Mechanics workshops and supervisions, delivered by additional specialist tutors, to the event. Rather than increasing the size of the attendee cohort further, this project increased the amount of time available for participants to work with an increased tutor and student ambassador team, including new specialist areas of mathematics covered by academics from across the UK.

The 2024 residential took place from 5 – 8 August, over four days and three nights. All 50 places were filled, although two participants withdrew due to personal reasons. 48 participants from England and Wales completed the full programme. The new resources and Mechanics lectures/workshops strand of sessions were positively received by participants, with one commenting;

“[Mechanics] was the most challenging, but in a good way. It was slower and harder than the other topics. It was really helpful to have supervisions between the sessions, as I could pinpoint where I had been struggling and talk through my thinking.”

The entire event was accommodated by Murray Edwards College, including a ‘Formal’ meal in the College hall. Building on new links with the Mathematics department, the group also visited the Centre for Mathematical Sciences several times during the programme – both for tours and to attend lectures from tutors and guest speakers, such as Professor Kasia Rejzner, President of the International Association of Mathematical Physics (IAMP).

Participants competed for their places on the programme, supported by teacher/school submissions and school analysis. Based on academic strength, with all participants predicted A* grades in both Mathematics and Further Mathematics at A level, 46 out of the 50 places were allocated to students from state-maintained school backgrounds. 6 participants were corroborated as having received Pupil Premium and/or 16-19 Bursaries due to low household income, and one more participant was from a Care-experienced background and also in receipt of financial support. 7 (15%) were from POLAR4 Q1-2 areas, and 14 (29%) were from IMD Q1-2 areas. All 46 participants from state-maintained school backgrounds were offered – and accepted – financial support from the project to cover their travel costs.

Of the 48 participants that completed the programme, 28 (59%) went on to apply to the University of Cambridge for 2025 entry.



STEP Summer School participants working on problem papers at Murray Edwards College

b. Two new subject taster days

Building on the College's existing partnership with the Cavendish Laboratory, this element of the project added taster day events for women in Mathematics, in collaboration with that department, and for women in Medicine, supported by Murray Edwards College's academic communities.

The Mathematics event, planned for 27 April 2024, was intended to support 20 participants, plus their supporters. The department was to take the lead on promoting and confirming participant places, with its significantly higher profile with the target audience; however, this did not take place. One prospective participant, from a state-maintained school in England, made contact directly with the College, separately to the main booking process, meaning the College confirmed places for her and her family, but no other attendees were booked – a situation that Murray Edwards was not aware of until the morning of the event, and subsequent follow up conversations with the department. A new approach to liaising with the Department will be taken in future, particularly with regard to ensuring shared access to booking information and systems in advance of collaborative events.

The one student that booked did attend with her family. Her visit included a tour of Murray Edwards and the Centre for Mathematical Sciences, meeting with a College maths supervisor and current student ambassadors, and lunch with them in College. The participant's travel costs were covered by the project, but further details are not detailed here in order to avoid potentially identifying the individual.

The sole participant in the Mathematics taster day went on to apply to the University of Cambridge for 2025 entry.

The Medicine taster event was well planned and advertised and took place on 19 April 2024. 85 participants attended, out of the 100 places that were confirmed.

Participants had a range of subject taster sessions to choose from, delivered by academics and researchers (of all genders) from across the Cambridge medical community, as well as Murray Edwards College's clinical Fellows and current students, generating extensive discussion amongst participants. A College tour and lunch in the College hall were also provided.

Demand for places was strong from students across England and Wales, despite a relatively short period for communicating the event to a potential audience. Over 200 applications were received for the places, with selection prioritised for those with the academic potential – as well as eligible A level subjects – to be a realistic applicant for Medicine at Cambridge.

8 attendees (9%) came from fee-paying schools, 77 (91%) came from state-maintained schools and sixth forms. One of the fee-paying school participants was in receipt of a financial scholarship, 10 of the state-maintained school participants were in receipt of the 16-19 Bursary due to low household income, and one more participant was from a Care-experienced background and in receipt of financial support. 68 participants from state-maintained school backgrounds were offered – and accepted – financial support from the project to cover their travel costs.

Of the 85 participants that attended the Medicine taster day, 61 completed the requested evaluation and tracking surveys and consents. Of those 61, 24 (40%) went on to apply to the University of Cambridge for 2025 entry.



Medicine Taster Day participants in one of their lectures at Murray Edwards College

c. Creation of a Widening Participation Travel Fund

The final element of the project supported by the Isaac Newton Trust was a fund to provide travel bursaries, as well as bed and breakfast provision in College (where appropriate) to enable participation in the College's She Talks Science programme for those for who may otherwise face prohibitive financial barriers, coming from widening participation backgrounds.

Administered by Murray Edwards College, and promoted alongside all event communications for the STEP Summer School and Subject Taster Days, 46 STEP Summer School participants and 68 subject taster day participants received support with travel costs. 29 subject taster day participants took up the offer of bed and breakfast accommodation in College, due to distance and journey time.

Take-up for the fund was even stronger than anticipated, with a slight overspend enabled by the underspend against the expected subject taster days. This overspend was in part also a consequence of higher-than-expected individual ticket costs. A breakdown is outlined in section 4.

All but one recipient of support from the fund was from a state-maintained school. That individual was, however, in receipt of a financial scholarship and bursary based on household income. It is clear from both demand and anecdotal feedback that this fund was vital in enabling so many participants to access She Talks Science and visit Cambridge.

3. How others may learn from the project

Delivery of the project was complex but broadly successful in both improving existing She Talks Science programme elements, and enabling the addition of new ones. The creation of a significant travel fund is believed to be one of the primary causal factors for the increase in applications and subsequent participation from state-maintained school students, as well as those with other socio-economic WP flags – which was significantly higher than previous years of the STEP Summer School. The same can be said for applications and participation in the Medicine taster day event, which saw a higher proportion of state-maintained, as well as other WP flags, compared to comparable events delivered by Murray Edwards College in the past.

Unfortunately, anecdotal evidence also indicates that the ease of engagement for students from underrepresented backgrounds, combined with the lack of any financial ‘buy in’ to the subject taster days created a lower threshold for commitment. 85 attendees out of 100 confirmed places is a lower percentage than some other, comparable, events delivered by the College in the past. That said, the College has seen similar dropout rates in some other cases where travel costs were covered. In this case, as in previous, the College saw no significant difference in non-attendance/dropout rates between those students that planned on claiming reimbursement and those who requested the College to purchase tickets for in advance.

Within this project, there was also no impact on non-attendance/dropout rates caused by provision of travel costs for the STEP Summer School, compared to previous years’ events, suggesting that the more demanding application/selection process and significantly higher benefit offered in return result in a higher level of commitment by the time travel costs and arrangements are considered.

Specific to the STEP Summer School, longer-term impact will not be observable until October 2025, once STEP results are published and offer-holders accepted. This comparative assessment will take place in due course. In the short term, however, qualitative feedback suggests slight increases in self-assessed confidence (10%) and knowledge (2%) over last year’s cohort. This is not considered significant, however, given the small sample size and single year comparison for the redeveloped programme structure. This year’s event was the first to include the new Mechanics strand, which was always expected to be received as more challenging than established topics. It had been hypothesised that it’s inclusion would see a decrease in overall self-assessed confidence, but that was not evidenced beyond one participant’s feedback.

Specific to the subject taster days, there was a significant difference in outcome between the Mathematics event (a partnership with a University department) and the Medicine event (a partnership between various communities within Murray Edwards College). Despite much time having been put into the external partnership from the College’s perspective, it failed to result in any participants recruited by the Department. In comparison, whilst more complex in terms of stakeholder management, the Medicine event was very successful in engaging highly motivated participants directly by the College. Further consideration for sharing of responsibility and data for engagement of participants in collaborative activities should be given, to ensure that all stakeholders are aware of potential challenges in advance. While the event was promoted by both the department and the College, a closer sustained working relationship and/or increased sharing of information between the two teams will ensure that such a situation does not arise again in future.

4. Finances

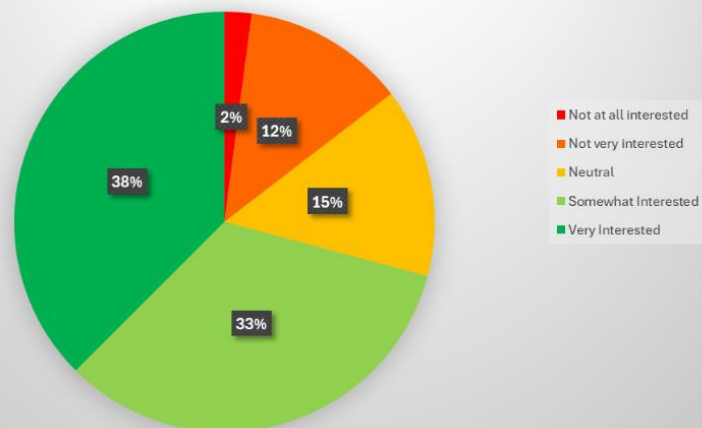
Expenditure for the project is as follows:

Project element	Projected budget breakdown: <i>All accommodation and catering costs at Internal Rates.</i>	Projected cost	Actual spend	Notes
a. STEP Summer School	£7,100 – Additional day/night's accommodation and meals for 50 participants & 11 tutors/supervisors/ambassadors, plus the existing three days/two nights for the 7 new team roles. £1,000 – 6x student ambassadors DBS, training, and payment for work (Real Living Wage). £900 – Additional £100 pay for 4 previous tutor roles (pay for extra night/day), plus £500 for a new Mechanics Lead role, including specialist resource development work.	£9,000	£9,000	<i>Project spend as projected.</i>
b. Medicine Taster Day	£1,700 – Lunches for 100 attendees £800 – Student ambassador pay (Real Living Wage) x12.	£2,500	£2,500	<i>No saving on lunches for dropouts, due to lack of notice. Seats taken by speakers/panellists instead, so no wastage.</i>
b. Maths Taster Day	£700 – Lunches and refreshments for 20 attendees, 20 parents/supporters. £300 – Student ambassador payments (Real Living Wage) x5.	£1,000	£350	<i>Ambassador costs unaffected, but lunch costs reduced due to absorption of wastage by another large event happening in College.</i>
c. She Talks Science & Widening Participation Travel Fund	£7,500 – Train tickets (or equivalent) x150 @ ~£50. £2,500 – B&B in College x35 @ ~£70.	£10,000	£10,150	<i>x114 participant travel - £8,120. This was slightly higher than projected. x29 B&B – £2,030. This was slightly lower than projected.</i>
	Total	£22,500	£22,000	<i>£500 underspend, to be returned to INT WPIF</i>

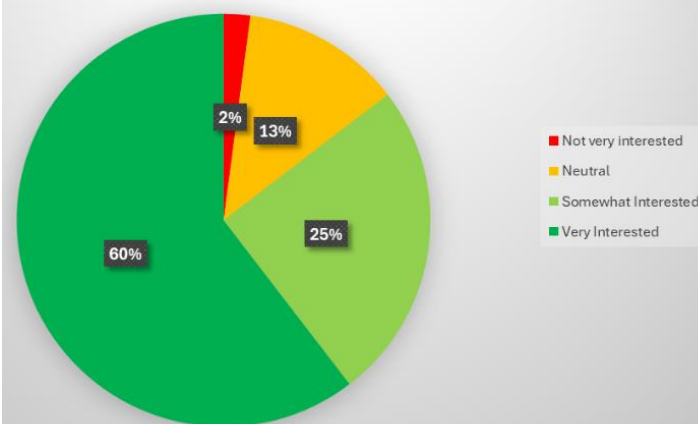
Appendix 1: Participant feedback from supported events

a. STEP Summer School

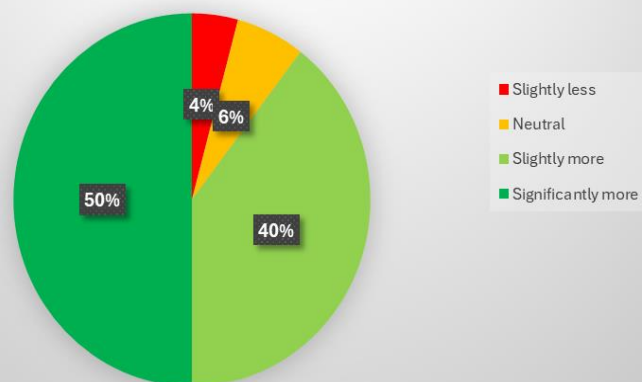
How interested were you in studying maths at Cambridge prior to the STEP Summer School



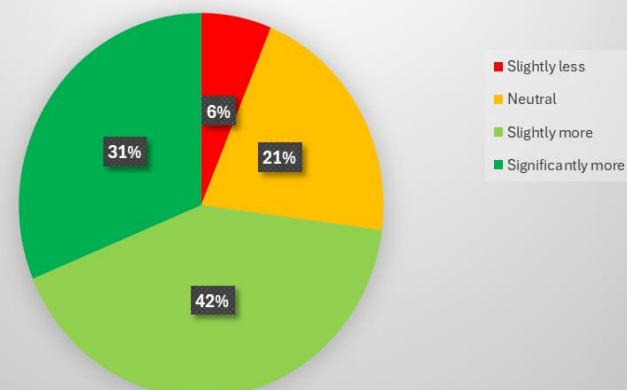
How interested are you in studying maths at Cambridge now you have attended STEP



How has the STEP Summer School changed your level of knowledge/confidence on the following - The STEP Exam

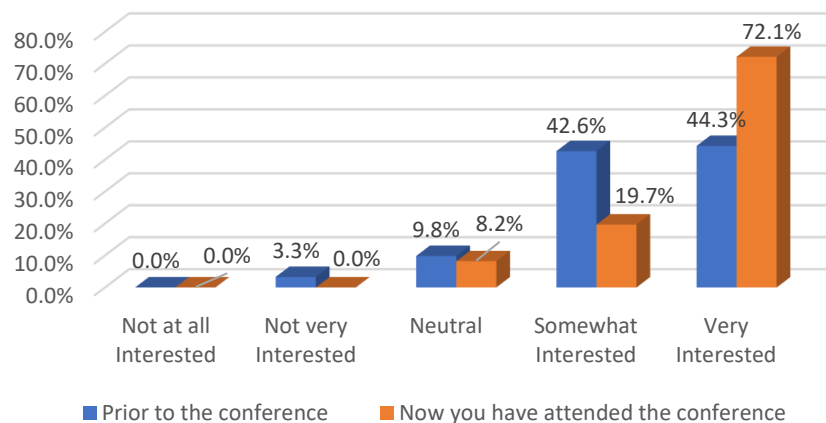


How has the STEP Summer School changed your level of knowledge/confidence on the following - Sitting STEP

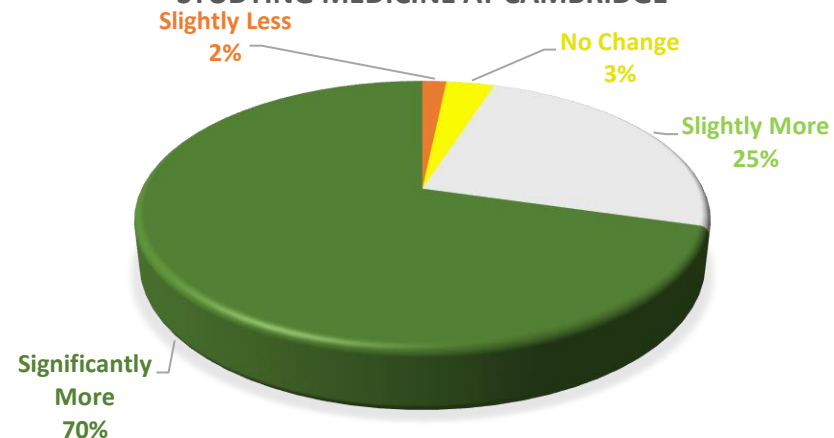


b. Medicine Taster Day

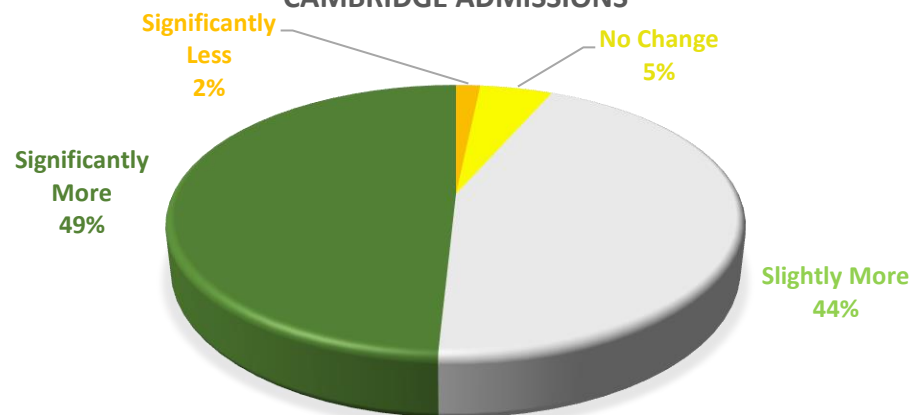
How interested were you in Studying Medicine at Cambridge?



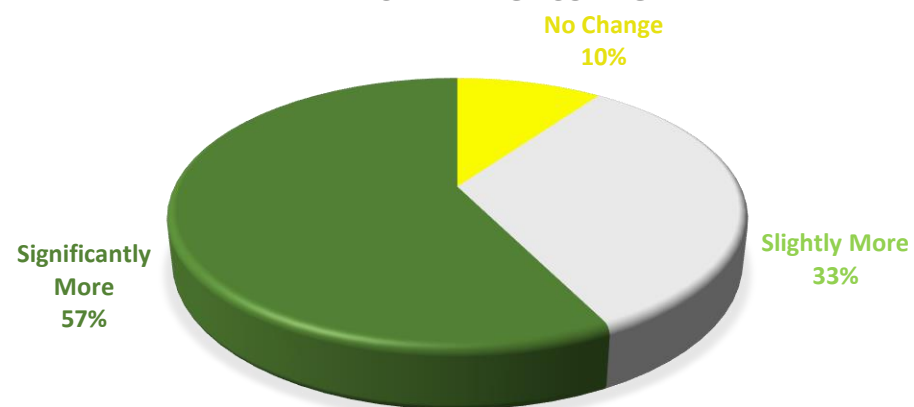
LEVEL OF KNOWLEDGE/CONFIDENCE -
STUDYING MEDICINE AT CAMBRIDGE



LEVEL OF KNOWLEDGE/CONFIDENCE -
CAMBRIDGE ADMISSIONS



LEVEL OF KNOWLEDGE/CONFIDENCE -
LIFE AT A CAMBRIDGE COLLEGE



N.B No comparable data collected from sole participant at Mathematics Taster Day

Appendix 2: Applications to Cambridge for 2025 entry from tracked participants, by activity

Activity	Participants	Applications (subject)
STEP Summer School	48	28: <ul style="list-style-type: none"> - x23 (Mathematics) - x1 (Computer Science) - x1 (Natural Sciences) - x3 (Engineering)
Medicine Taster Day	85 (61 tracked)	24: <ul style="list-style-type: none"> - x23 (Medicine) - x1 (Mathematics)
Maths Taster Day	1	1: <ul style="list-style-type: none"> - x1 (Mathematics)