



UNIVERSITY OF LEEDS
School of Medicine



Pathways to Leeds Summer School

LICAMM LEEDS INSTITUTE OF CARDIOVASCULAR AND METABOLIC MEDICINE

Evaluation of the 2017 Summer School
Dr David Wilkinson, Research Toolkit Limited



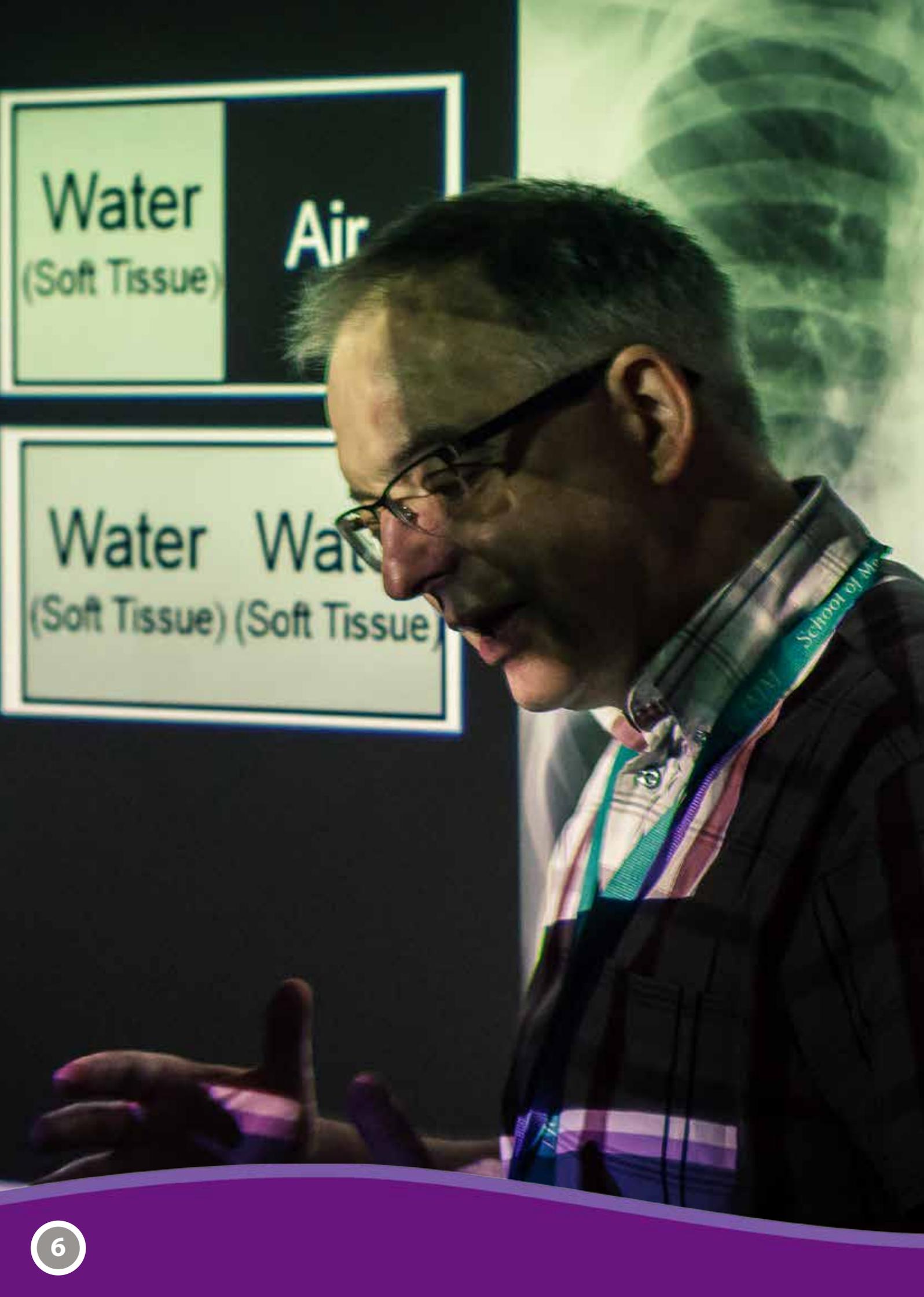
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Executive summary

- The Pathways to Leeds Summer School is a pilot outreach programme developed by Leeds Institute of Cardiovascular and Metabolic Medicine (LICAMM) at the University of Leeds. It has been designed and developed in consultation with the University of Leeds School of Medicine and the University's outreach office, Educational Engagement.
- 48 places were offered on the pilot programme; recruitment was managed by Elliot Hudson College as part of their spring 2017 college application process and places were offered on the programme based on agreed metrics of socioeconomic status.
- The programme comprised three distinct areas of coverage: foundation building, confidence building and target setting.
- By the end of the Pathways to Leeds Summer School period our Learning Gain analysis indicated that understanding of medically-related provision at the University of Leeds had increased considerably for participants. General levels of confidence had increased by the end of the programme, also.
- Participants provided considerable detail in relation to the most enjoyable parts of the Pathway to Leeds Summer School programme. A large number of comments focused on enhancing skill and understanding of science-based subjects. Many also appreciated the practical aspects of the programme as this supported deeper and more enjoyable learning experiences.
- Whilst participants enjoyed the interactive and hands-on style of the programme, a number suggested that more of this could have been present in the programme. In addition, some felt that (in order to help the group to get to know each other), more ice-breaking activities could be built into the earlier stages of the programme.
- A number of participants reflected on the intensity and breadth of coverage of the programme, highlighting that the programme had made them think more broadly about the provision offered at universities to support progression into healthcare-related degree programmes.
- Participants were aware of the benefits of working with peers on the Pathways to Leeds Summer School programme (prior to progression to College) as this provided clear opportunities to develop friendships prior to the transition.
- In working closely with Elliot Hudson College, the Pathways to Leeds Summer School programme has been able to access students who are on the verge of making important career choice decisions that will have a long-lasting effect on their career and life choices.
- Participant data collected as part of the evaluation process clearly shows that attendees gained valuable knowledge and understanding of options available for progression into Medicine and Health-related programmes of study.
- Baseline data collected via the Learning Gain tool at the beginning and end of the programme provides a realistic and immediate indicator of the positive 'distance travelled' by participants.



Water
(Soft Tissue)

Air

Water (Soft Tissue) Water (Soft Tissue)



Introduction

The Pathways to Leeds Summer School was a pilot outreach programme developed by Leeds Institute of Cardiovascular and Metabolic Medicine (LICAMM), University of Leeds. It has been designed and developed in consultation with the School of Medicine (SoM) at the University of Leeds and the University's outreach office, Educational Engagement.

The pilot programme has been specifically designed to support students applying to Elliot Hudson College and encourage successful progression of these students onto A-level Science subjects. Developmental discussions with senior staff from Elliot Hudson College highlighted that the quality of GCSE science teaching for students, who might naturally progress to the College, was variable in breadth and quality of material covered. This had led some students to 'self-teach' areas of the GCSE curriculum in order to feel prepared for assessment and progression which leaves them at a disadvantage when transitioning to A-level.

Anecdotal evidence from Elliot Hudson colleagues indicates that progression options are traditionally limited for learners from disadvantaged areas of the West Yorkshire sub-region. Limiting factors generally include lack of information and awareness of progression opportunities available beyond immediate family or social circles, and restricted evidence-based reference points (parents or siblings') positive personal experiences of progression.

48 places were offered on the pilot programme; recruitment was managed by Elliot Hudson College as part of their spring 2017 college application process and places were offered on the programme based on agreed metrics of socioeconomic status.

A key driver of Elliott Hudson College is a determination to ensure that poverty and deprivation do not limit the quality of a young person's educational experience, or restrict the levels of achievement to which those students are able to rise. The College offer A-level places based on a range of factors, with a particular emphasis on recognising a student's determination and commitment as well as their socio-economic background.

Format of the programme

This ambitious 5-day programme designed to support 48 student participants from disadvantaged backgrounds comprised three distinct areas of coverage: foundation building, confidence building and target setting.

Foundation Building - a firm foundation underpins future success

Covering fundamental GCSE science concepts in the form of short masterclasses, 'foundation building' was designed to support successful transition from GCSE to science A-levels. Chosen topics were mapped from the GCSE curriculum to the SoM undergraduate degree programmes. Participants were split into three groups to allow a more interactive experience and teaching was delivered in carousel sessions allowing each group to attend each topic. The aim of the Foundation Building sessions was to revise key areas and demonstrate how they map to SoM undergraduate degree programmes.

Confidence Building – overcoming the fear of the unknown; learning to read the map

University can be perceived as inaccessible, because of personal circumstance and/or confidence. One aim of the Pathways to Leeds Summer School programme was to provide a learning opportunity within a university setting thereby overcoming preconceptions about Higher Education and dispelling fears of the unknown. University students acted as hosts and facilitators throughout the week thereby providing a source of experiential information about university life from a closer-aged peer group; participants were encouraged throughout to programme to ask their student hosts questions either directly or anonymously about university life. The Pathways to Leeds Summer School was delivered exclusively on the University of Leeds campus and included sessions on student life and applying to university. The aim of the confidence building session was to help equip participants to navigate their personal pathway to Higher Education.

Target Setting – the destination

The final day of the Pathways to Leeds Summer School provided a unique introduction to all School of Medicine undergraduate programmes at the University of Leeds. These short carousel sessions provided a taster to university provision in the areas of: Medicine, Radiography, Health Sciences (Cardiac Physiology) and Health Sciences (Audiology). The broad aim of this final day session was to provide information on the diverse medicine-related professions that studying science could take participants into and provide potential targets for those participants interested in pursuing medicine related professions.

Interweaved with these areas were Showstopper Lectures, this was an opportunity for staff to present some of the different applications of each subject in society and some current and emerging research; the aim was to deliver an interesting and entertaining insight into each of the subject areas and hopefully provide some inspiration to young minds.

Foundation building

Monday:

- The Mighty Atom (Chemistry)
- Batteries and sound (Biology)
- How do you make a jelly baby wave (Physics)
- How medical imaging changes the world (Showstopper)

Tuesday:

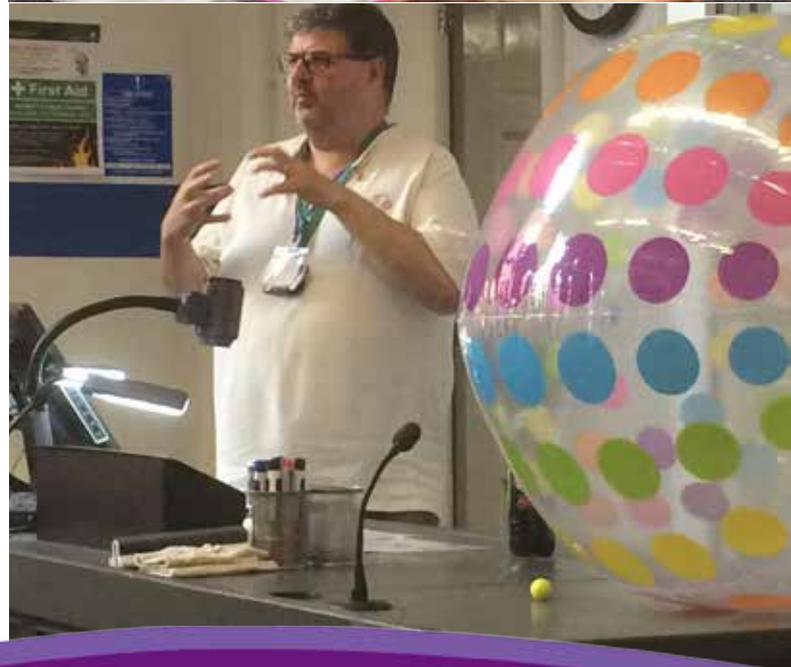
- The periodic table (Chemistry)
- 'Sticky porridge' and heart disease (Biology)
- Going supersonic (Physics)
- Bones, breaks and forensic investigation (Showstopper)

Wednesday:

- Mole hunting (Chemistry)
- What can cause a hearing loss (Biology)
- X-rays: seeing under the surface (Physics)
- Are large databases good for your health (Showstopper)

Thursday:

- The names Bond! (Chemistry)
- Broken heart (Biology)
- Alien invaders: they come from another galaxy (Physics)
- 3D bio-printing for medical research (Showstopper)



Confidence building

Monday:

- Introduction to Higher Education

Tuesday:

- Making the most of Year 12

Wednesday:

- Student life

Thursday:

- Next steps



Target setting

Friday:

- Introduction to Radiography
- Introduction to Audiology
- Introduction to Cardiac Physiology
- Introduction to MBChB



Evaluation

A multi-strand evaluation of the programme was carried out by the external evaluator. This consisted of:

Pre- and post-programme learning gain tool analysis

A pre- and post-programme survey (paper-based) was developed in collaboration with the Summer School programme team using statements designed to explore learning development or learning gain. Statements were directly related to attitudes towards higher education, experience of engagement with HE providers, and knowledge and understanding of subject-specific elements of the programme. Thirty-three participants completed both the pre- and post-programme learning gain tool.

End of programme summary: 'what I enjoyed the most', 'what could be improved'

On the final day of the 5-day programme, participants were encouraged to complete a single sheet form seeking response to two questions: 'What I enjoyed most about the Pathways to Leeds Summer School', and 'What could be improved to make the Pathways to Leeds Summer School better for future groups?' Time was provided in the programme to enable participants to reflect upon these two questions and to write their qualitative responses to it. Thirty-five participants provided qualitative responses to this element of the evaluation.

Follow-up online survey

Approximately one week following completion of the programme, colleagues at Elliot Hudson College distributed a short online survey to those who had participated in the programme. This survey sought to explore thoughts on sustained impact and effect of the programme. Twenty responses to the online survey were received from participants of the programme.

Focus group

During the first week of the autumn term, participants from the programme who had enrolled at Elliot Hudson College at the beginning of September were invited to participate in a lunchtime focus group designed to reflect upon the content of the programme and to identify elements of continuing impact and effect. Twelve programme participants took part in the focus group (consisting of 9 females and 3 males). The focus group was facilitated by led by an independent facilitator.

Learning Gain analysis

The Learning Gain Tool (www.learning-gain.co.uk) developed by Research Toolkit seeks responses to statements from each 'Pathways to Leeds Summer School' participant. Responses are given on a scale from 1 to 10 (where 1 equals strongly disagree or this very rarely happens/is the case; 10 equals strongly agree or this always happens/is the case). Responses to statements are then averaged across the entire group to determine pre-programme scores or ratings, as well as post-programme scores or ratings. Differences between pre- and post-programme averages are calculated and this produces the learning gain/ development or distance travelled in that statement area.

To enable the analysis a single A4 sheet survey was provided to each participant containing 11 statements related to the collaborative residential programme. Question areas focused on the content elements of the programme, as well as prior knowledge and understanding of higher education. Survey sheets were collated following the programme and areas of gain identified as outlined below.

Most participants had very strong desires (at the beginning of the programme) to progress to University. However, their knowledge and understanding of medicine-related subjects at University was limited at the beginning of the programme. By the end of the Summer School period, this understanding had increased considerably. General levels of confidence had increased by the end of the programme, also. Most felt much more confident about contributing to discussions in groups and there was a more positive view on visiting Universities as part of open day programmes. In terms of progression from education to the world of work, many participants had a greater understanding, at the end of the 5-day programme, of options to progress into medically-related employment.

When we split the data by gender, there are differences in some of the statement areas. For male participants, the 'distance travelled' in terms of understanding of medicine-related subjects was greater than female participants. The area of most 'distance travelled' for female participants was in developing confidence to contribute to class discussions.

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PATHWAYS TO LEEDS - EXPLORING YOUR DEVELOPMENT AND LEARNING GAIN

The questions below have been written to help us to find out what you have gained from the Summer School programme. You will complete this learning gain tool twice: once prior to the programme and once after the programme. We will therefore be able to find out whether your answers have changed. You do not need to answer any questions that you do not want to and it should only take about 5 minutes to complete. All of our questions are presented so that you can tick them according to a scale where 1 equals extremely negative or very poor and 10 equals extremely positive or the best it could be.

It's really important that you are honest with yourself when making a judgement or assessment because we hope that your answers will help you to determine where you need additional support or guidance, as well as showing you where your current or developing strengths are. The information you provide will also help us as programme developers to find out where the programme has worked well and where we might change or adapt elements of it.

(14) Your ID code (please print): _____

(15) Your gender (please circle): Male Female

(16) Today's date: _____

Please select the appropriate number below by ticking the box.
(1 means the worst it could possibly be, 10 means it is the best it could possibly be).

(7) I feel confident in working with others in a group. 1 2 3 4 5 6 7 8 9 10

(8) I understand the different kinds of medicine related jobs that studying science can take me on. 1 2 3 4 5 6 7 8 9 10

(9) I understand the difference between studying at college and University. 1 2 3 4 5 6 7 8 9 10

(10) I can use a range of equipment to help me learn. 1 2 3 4 5 6 7 8 9 10

(11) I would like to work in a medicine related profession. 1 2 3 4 5 6 7 8 9 10

(12) I understand the importance of communication in a medical setting. 1 2 3 4 5 6 7 8 9 10

(13) I would like to study at University. 1 2 3 4 5 6 7 8 9 10

(14) I feel confident contributing to class discussions in both small and large groups. 1 2 3 4 5 6 7 8 9 10

(15) I have a good understanding of the range of medicine related subjects available to me at the University of Leeds. 1 2 3 4 5 6 7 8 9 10

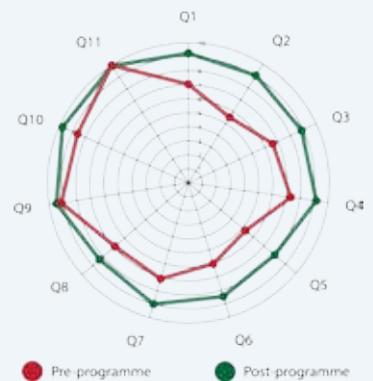
(16) I feel confident visiting Universities, for example during open days. 1 2 3 4 5 6 7 8 9 10

(17) I understand how science affects everyday life. 1 2 3 4 5 6 7 8 9 10

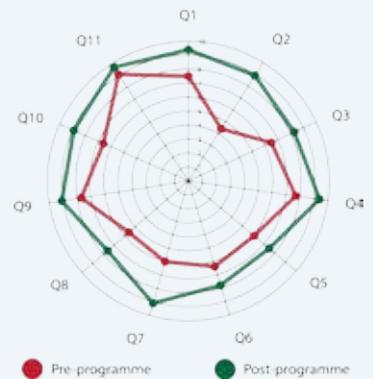
Statement area - All (33 respondents)	Pre-Prog.	Post-Prog.	Change	% Change
(1) I understand the difference between studying at college and University.	7.18	9.30	2.12	30% ▲
(2) I have a good understanding of the range of medicine related subjects available to me at the University of Leeds.	5.18	9.00	3.82	74% ▲
(3) I feel confident visiting Universities; for example during open days.	6.58	8.70	2.12	32% ▲
(4) I understand how science affects everyday life.	7.45	9.24	1.79	24% ▲
(5) I feel confident contributing to class discussions in both small and large groups.	5.55	7.85	2.30	42% ▲
(6) I feel confident in working with others in a group.	6.15	8.27	2.12	34% ▲
(7) I understand the different kinds of medicine related jobs that studying science can take me into.	6.79	9.03	2.24	33% ▲
(8) I can use a range of equipment to help me learn.	6.52	8.12	1.61	25% ▲
(9) I would like to work in a medicine related profession.	8.70	9.36	0.67	8% ▲
(10) I understand the importance of communication in a medical setting.	8.00	9.52	1.52	19% ▲
(11) I would like to study at University.	9.73	9.88	0.15	2% ▲



Statement area - Female (23 respondents)	Pre-Prog.	Post-Prog.	Change	% Change
(1) I understand the difference between studying at college and University.	7.04	9.26	2.22	31% ▲
(2) I have a good understanding of the range of medicine related subjects available to me at the University of Leeds.	5.52	9.04	3.52	64% ▲
(3) I feel confident visiting Universities; for example during open days.	6.61	8.87	2.26	34% ▲
(4) I understand how science affects everyday life.	7.35	9.17	1.83	25% ▲
(5) I feel confident contributing to class discussions in both small and large groups.	5.30	8.00	2.70	51% ▲
(6) I feel confident in working with others in a group.	6.04	8.48	2.43	40% ▲
(7) I understand the different kinds of medicine related jobs that studying science can take me into.	7.13	9.00	1.87	26% ▲
(8) I can use a range of equipment to help me learn.	6.91	8.35	1.43	21% ▲
(9) I would like to work in a medicine related profession.	9.13	9.48	0.35	4% ▲
(10) I understand the importance of communication in a medical setting.	8.61	9.78	1.17	14% ▲
(11) I would like to study at University.	10.00	9.96	-0.04	-0.4% ▼



Statement area - Male (10 respondents)	Pre-Prog.	Post-Prog.	Change	% Change
(1) I understand the difference between studying at college and University.	7.50	9.40	1.90	25% ▲
(2) I have a good understanding of the range of medicine related subjects available to me at the University of Leeds.	4.40	8.90	4.50	102% ▲
(3) I feel confident visiting Universities; for example during open days.	6.50	8.30	1.80	28% ▲
(4) I understand how science affects everyday life.	7.70	9.40	1.70	22% ▲
(5) I feel confident contributing to class discussions in both small and large groups.	6.10	7.50	1.40	23% ▲
(6) I feel confident in working with others in a group.	6.40	7.80	1.40	22% ▲
(7) I understand the different kinds of medicine related jobs that studying science can take me into.	6.00	9.10	3.10	52% ▲
(8) I can use a range of equipment to help me learn.	5.60	7.60	2.00	36% ▲
(9) I would like to work in a medicine related profession.	7.70	9.10	1.40	18% ▲
(10) I understand the importance of communication in a medical setting.	6.60	8.90	2.30	35% ▲
(11) I would like to study at University.	9.10	9.70	0.60	7% ▲





What participants enjoyed the most

Participants provided considerable detail in relation to the most enjoyable parts of the Summer School programme. A large number of comments focused on enhancing skill and understanding of science-based subjects. Many also appreciated the practical aspects of the programme as this supported deeper and more enjoyable learning experiences. Specific elements of the facilitated sessions identified by participants as the most enjoyable included sessions exploring Cardiology, Radiography, and the heart. A number of participants also indicated that the programme provided them with more detailed information on healthcare professions, as well as a better understanding of university and higher education. One effect of this has been to encourage a more positive view on progressing into these healthcare professions for a number of participants.

”

I enjoyed the cardiology lessons – the ones on the medical imaging and some of the chemistry. The best lesson was the cardiology lesson on the Tuesday.

”

I really enjoyed the lecture on forensic science and also all of the chemistry lessons (they were really engaging).

”

I enjoyed learning about the different medically-related professions which are available. I feel that I am much more open to different professions than I was at the start of the week.

”

Experiencing university life – it was an enjoyable experience helping me to develop an insight into my career choice and future options.

”

I enjoyed learning about a range of scientific careers.

”

I enjoyed learning about the different careers and opportunities in Medicine ... about how much science connects to our everyday life. Having experience on how university works and how my life at university will be.

”

The practicals were fun and engaging, I enjoyed gaining more information about different courses.

What participants thought could be improved

Whilst participants enjoyed the interactive and hands-on style of the programme, a number suggested that more of this could have been present in the programme. In addition, some felt that (in order to help the group to get to know each other), more ice-breaking activities could be built into the earlier stages of the programme. The 'on campus' experience was perceived as a strength of the programme by participants, but some felt that they had only accessed a small part of the whole University whilst participating in the Summer School. Access to other clinical teaching space and/or labs would have been welcomed and enhanced the experience for participants.

”

If at first everyone was made to speak to each other more – so its less awkward in the beginning. Like have an introductory session so that everyone gets to know each other.

”

To improve I would like there to be practicals and experiments that allow us to me more hands-on.

”

If they had an introductory session where they interacted with their peers and learnt each other's names and maybe some facts about each other.

”

Going to the different parts of campus and taking part in activities there would help better with understanding the practical aspects of the courses.

”

Looking around the teaching space, and taking part in activities there, would help to understand the theory elements.

”

There's is nothing much to improve it ... perhaps it could be longer!

”

We could have maybe seen some of the facilities that are used by those studying the subjects.



University of Leeds
Student Radiographer

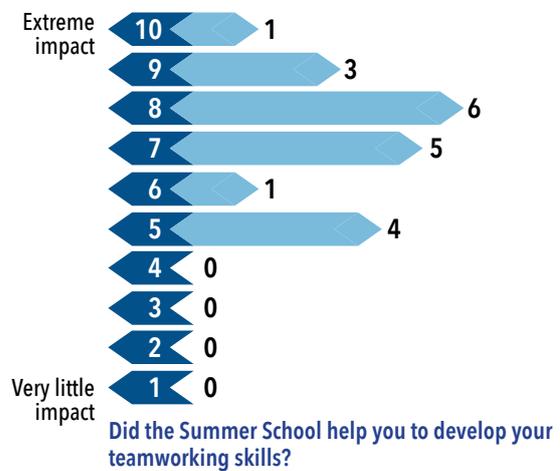
Views and perceptions after the programme

We surveyed all participants to the programme approximately one week after its delivery. Our online survey instrument was distributed, on our behalf, directly to participants by Elliot Hudson College; we received 20 responses (a little under 50% of all programme participants).

In our survey, we were particularly interested in participants views on impact in a number of interpersonal skill development areas: team-working, confidence skills, understanding of science subjects, and confidence in visiting universities. In measuring impact or effect, we asked participants to indicate (on a scale of 1 to 10, where 1 was very little and 10 was very much) how the programme had affected their skill, knowledge or understanding in these areas.

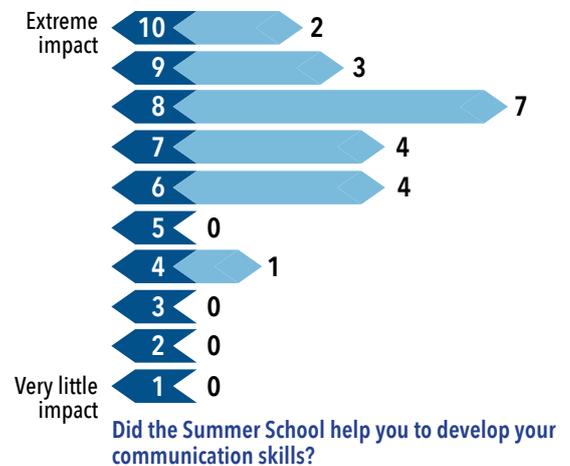
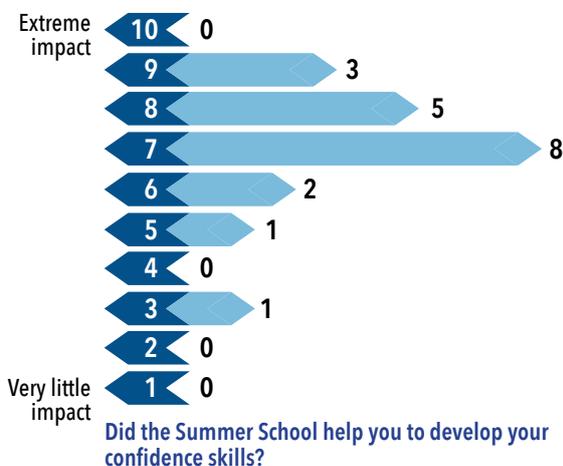
Teamworking

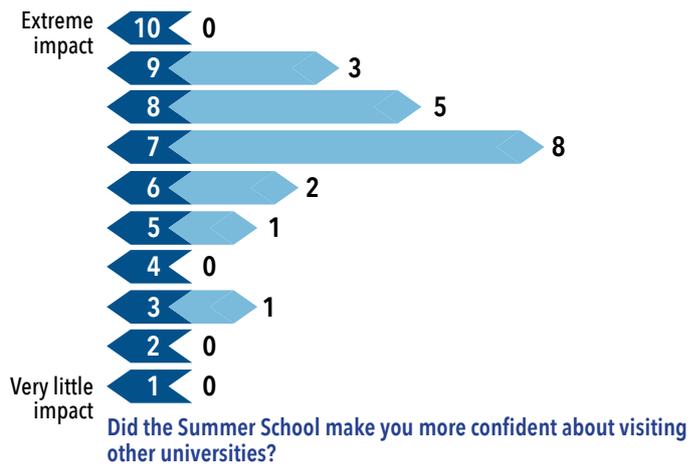
In terms of team-working, almost all participants responding to the survey indicated that the programme had provided a strong and positive impact on this area, over three-quarters indicating that the programme had provided a major positive impact in this area (by providing a rating of 7-10).



Confidence and Communication skills

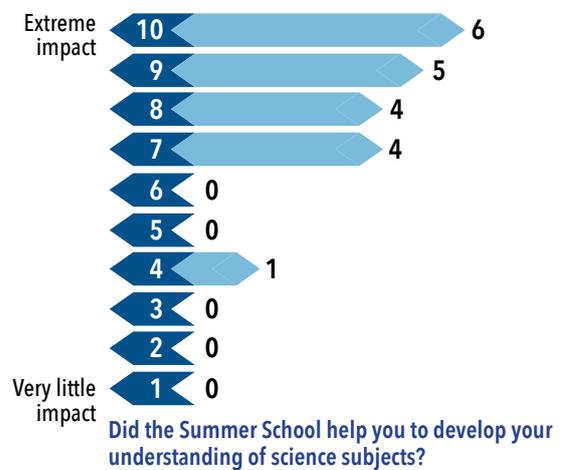
In terms of confidence skills and communication skills, around three-quarters of participants indicated that the programme had provided a major and positive impact in this area (by providing a rating of 7-10). However, no participant felt that this skill or development area had reached its maximum (by scoring a 10) as a result of the programme. Almost all felt much more confident about visiting other universities as a result of the programme.





Understanding of science subjects

Stronger and even more pronounced positive impacts were recorded in relation to understanding of science subjects, where almost all responding participants indicated that the programme had provided a strong and positive impact in this area (by providing a rating of 7-10).



We also asked participants to identify whether or not they wished to progress to university at the beginning of the programme, and then at the end of the programme. All participants indicated that they wished to do so at both measurement points.

100% 'Yes'

Were you considering going on to University before the Summer School?

100% 'Yes'

Are you considering going on to University after the Summer School?

Focus group reflections

Following the summer break period, we conducted a small focus group session with a selection of participants from the Pathways to Leeds Summer School programme. Discussions explored the continuing effect and impact of the Summer School. Twelve participants took part in the focus group held at Elliot Hudson College in October 2017.

A number of participants reflected on the intensity and breadth of coverage of the programme, highlighting that the programme had made them think more broadly about the provision offered at universities to support progression into healthcare-related degree programmes.

Hands-on activities and sessions resonated most with participants - these were the ones they remembered and enjoyed the most. Some sessions, were identified as having more theory and intensity than others - these were more difficult to engage with and were less accessible for participants. Nevertheless, most agreed that these sessions were of value in developing participants theoretical knowledge and understanding in key scientific areas.

Viewing the 5-day programme as a whole some participants felt they could have gained more benefit if ice-breaking and team-working tasks were introduced at the very beginning of the programme. The group generally accepted that some activities and tasks were designed to encourage engagement with each of the facilitation and student host team. However, some suggested that the programme could have had more of these kinds of activity to help participants to 'feel more comfortable each day'.

Participants were aware of the benefits of working with peers on the Summer School programme (prior to progression to College) as this provided clear opportunities to develop friendships prior to the transition.

”

It was really great to see the University of Leeds and what it has to offer. The content of the sessions was really useful and has supported by studies here at Elliot Hudson.

”

My confidence skills were developed on the Summer School. I was quiet at the beginning but soon got to know people and was able to participate in the sessions. It made me feel great!

”

We did a lot on the 5 days, but it would have been even better to see other parts of the University campus. Perhaps some other lab space.

”

I understand a lot more about science subjects now. Its much better being able to put theory into context - its helping my studies now that I am at College.

”

[to develop sessions] add a quiz or something to get people up and moving around the room.

”

It's scary at first but then people that you're with will be going to college with you. So the more people you can meet there, the more you'll know when you get to college.

”

... I learnt about audiology and all of the subjects linked to it. I didn't know about this before the Summer School.

”

At the start you didn't really know anybody and then towards the end you started to become friends with them.

Concluding comments

A targeted programme

The Pathways to Leeds Summer School has provided an immersive experience for students in targeted Ward areas of Leeds defined as suffering from limited access to Higher Education. In working closely with Elliot Hudson College, the Pathways to Leeds Summer School programme has been able to access students who are on the verge of making important career choice decisions that will have a long-lasting effect on their career and life choices. A complete picture of influences and effects become difficult to measure as such impacts will not be realised until the programme participants progress through their education and working lives. However, some valuable and valid comments can be drawn from the various evaluation data collected, as has been discussed elsewhere in the report.

A positive view of Higher Education

Participant data collected as part of the evaluation process clearly shows that attendees gained valuable knowledge and understanding of options available for progression into Medicine and health-related programmes of study. Baseline data collected via the Learning Gain tool at the beginning and end of the programme provides a realistic and immediate indicator of the positive 'distance travelled' by participants. As their education continues at Elliot Hudson College, the knowledge gained on the Summer School will continue to be exploited and contextualised.

