

# STEM Ambassador Engagement in a CHILD & ADOLESCENT MENTAL HEALTH TIER 4 SERVICES SETTING



## Context and Overview

Ancora House is the Chester and Wirral Partnership NHS child and adolescent mental health inpatient unit, based in Chester. The centre provides inpatient and day patient care (also known as Tier 4 services) for children and young people, aged 13-18, with severe and/or complex mental health conditions. Ancora House School is an on-site short-stay school provision which provides education and support to young people who are admitted to Ancora House.

Many of the children and young people supported by the school are facing major challenges in their lives and so the school works to ensure that barriers are addressed and that all students make rapid personal, social and educational progress. The children and young people attending the school follow a full school curriculum, supported by the clinical team as appropriate. The education staff work closely with home schools and colleges so that young people remain engaged with their learning, despite their admission to hospital, and the transition support team works to ensure that the children and young people leave the service well-prepared for the next stage of their lives.



**Kerry Dilley** is a Transition Support Worker at Ancora House and, having previously worked for the Connexions service had a good background in providing careers AIG. Looking for

support to increase the school's careers programme and help raise aspiration amongst the young people she was working with, Kerry located her local STEM Ambassador Hub via an online search. The Hub supported Kerry in making a STEM Ambassador request and selecting volunteers who would be well-suited to the context of the school setting.

Kerry's request was simply for a STEM Ambassador to visit to give a career talk to her students, aged 11-16. However, due to the specific circumstances of the students, she was keen that the experience also enabled students to make connections with the outside world and gain a sense of long-term vision, to support them in moving on after their time in hospital.

Several STEM Ambassadors initially offered support and two of these, **Sarah Griffiths** and **Roger Todd**, have committed to ongoing contact with the school, visiting on several occasions throughout the year and developing a supportive, longer-term relationship with the staff and students. This has enabled trust to develop between the partners and has seen the support provided by the STEM Ambassadors develop far beyond what was initially requested.



**Sarah Griffiths** has a BSc Hons in Zoology and an MSc in Animal Breeding. She previously taught secondary science, before starting a sixteen-year career with the BBC,

including working in the World Service Science Unit. She now edits an Egyptology magazine and works as a lecturer. In 2012, a colleague at the BBC suggested she joined the STEM Ambassador Programme and she has been an active volunteer ever since.



**Roger Todd** is the IET School Liaison Officer for Mersey and Western Cheshire and has been a STEM ambassador for about 12 years. He started his career as an RAF

Apprentice, later working on the Vulcan Bomber squadron, Javelin fighter aircraft, and helicopters, finishing his RAF career teaching electronics at RAF Cosford. He then joined GEC in Leicester and started designing electronic systems and programming the early microprocessors. Later working for a variety of companies, he got more involved in software development and project management. He has also started his own company to market his own inventions; Tekgenuity, Medipump and Chromasonic systems! He never went to university, but did take ONC, HNC qualifications, and arrived at the top end of engineering by a rather odd route. In his own words, Roger states:

*My education was helped along by some very good people, so I think it is only fair if I do my bit for the younger generation.*

## Impact on young people

Due to the nature of the Ancora House School's setting, staff work with small numbers of students. Following the successful reception of her first visit, over the course of the following year, Sarah delivered three separate career talks to small groups of around 4-6 young people at a time. During each session, she provided an informal presentation to talk through her career path, the choices she made, the opportunities she had, the travel she had been able to do etc.

Sarah also explored the reasons why she had made some of decisions she had during her career and shared with the students the success, or otherwise, of these! The informal context of her activity, using a slide show of images as background, allowed for lots of chat with the students as they went along. This enabled Sarah to take her lead from the students themselves, as they engaged in different ways according to their own personal circumstances.

Her presentation illustrated how science study is great preparation for any job. As she is not currently employed in an obvious 'science role' she was able to show how a science education can lead to a wide range of jobs in a variety of sectors and that the skills learned as a scientist are beneficial in many roles. She also stressed the point that it's never too late to try something new. She encouraged the students to get thinking about what they might like to do but emphasised that it wasn't a problem if they didn't yet know; they should look around, seek all kinds of opportunities and talk to people who might be able to help or advise.

Similarly, Roger's initial visit also focused on him sharing his career story. Again, the message that the young people received was that career paths are often varied and that you never quite know what life might throw at you. Change is inevitable. Obstacles and opportunities can arise when you least expect them, therefore you need to be able to adapt and rise to the challenges. Having not followed a traditional university route but still having progressed to senior roles within the engineering sector, Roger was able to reassure some students, for whom the progression through the usual educational route may prove challenging, that success was still possible. He highlighted the fact that you don't have to be a genius in STEM subjects to be an engineer.

If you are interested and curious and engage with problem-solving, the rest follows. With a long engineering career and a breadth of experiences to share, Roger was able to give students an insight into a wide range of different employment experiences and practical life skills, assisting with Kerry's objectives of connecting students with a life lived beyond the confines of their hospital treatment.

Kerry commented that:

*The STEM Ambassadors' careers talks have been very engaging for our students. Our young people are currently in hospital and having a positive link to the outside world is really important. Sarah and Roger's delivery of the sessions has been very suitable for our students, whose feedback is really positive.*

*Their championing of STEM subjects, and the link the Ambassadors provide with the outside world of work, is very beneficial. Sarah's talk allows the young people to see the diversity of careers that a science-based education has allowed her to do. Roger's talk let young people see the different routes into a science-based career as he started his career as an apprentice.*

Both STEM Ambassadors have returned to Ancora House School, following their initial careers talk and, as a result of the relationship developed, have used their connections to provide additional support and resources for the students. Roger returned to the school to deliver a session based on the IET secondary curriculum resources to design an automatic lighting system. He was able to provide the school with a set of LED torches that students could use for the activity and then keep for their own use afterwards. He was also able to provide some specific direction for individual students from the wealth of knowledge he has through his IET role and is in discussion with the school to run some practical STEM sessions to upskill subject teachers.

Sarah has been able to support specific students with broadcasting careers questions and has supported staff with creating other career links via her own personal contacts. At the request of staff Sarah was able to introduce them to a museum curator and has provided particularly-interested students with a free subscription to the Egyptology magazine which she edits.

Kerry stated,

*Sarah has been to our service now on three occasions. I have found her to be engaging and passionate about her career path, and this shines through in her presentations to our students. The students have all been engaged during her sessions and as well as this having importance from a career-aspiration perspective, it is also highly important for our students to have links with the outside world. Sarah has gone above and beyond my original request of a STEM talk and we are very grateful for all her input.*

*Roger has been to our service on two occasions and has also been very engaging with our students. Again, he has gone above and beyond my original request, providing some free STEM resources for our school and offering specific opportunities for our students and subject teachers. Our school is very grateful for his positive impact.*

Kerry also referenced the positive impacts of the STEM Ambassador activities on the wider school community stating that:

*The careers talks delivered by Sarah and Roger have been beneficial to our teaching staff enabling them to make links between their subjects and the world of work. This in turn helps teaching staff to make the links to working life with their students. The parents are told in reports about the guest speakers and we publish our careers programme on our website. They too have responded very positively to the additional experiences provided for their children.*

## Evaluation Data

Evaluation data was collected following the STEM Ambassador activities, which indicated a positive impact on students' enjoyment and engagement with STEM.

- **100% of students Agreed or Strongly Agreed that they had enjoyed the STEM Ambassadors' visits**

The data also suggested a positive impact on STEM careers awareness.

- **80% of students Agreed or Strongly Agreed that the STEM Ambassador(s) helped them to understand more about the careers available within STEM**
- **60% of students Agreed or Strongly Agreed that the STEM Ambassador(s) helped them to understand more about which employability skills and attitudes they should develop to help them get a job**
- **100% of students Agreed or Strongly Agreed the STEM Ambassador visit helped them see some of the options and opportunities available to them when they were older.**

Part of the evaluation focused on one of Kerry's main objectives for the STEM Ambassador engagements for this particular cohort of young people; that of the impact on their own self-confidence and vision for the future. It was particularly pleasing to see positive responses to these questions.

- **80% of students Agreed or Strongly Agreed that the STEM Ambassador(s) helped them to see that it's possible to overcome difficulties or poor decisions and that it's never too late to change your mind and do what you need to do to get where you want to be**
- **60% of students Agreed or Strongly Agreed that they felt encouraged by the STEM Ambassador(s) visit and more confident about their own future.**

*I enjoyed the visit(s) from the STEM Ambassador(s)*

Strongly agree	40%
Agree	60%
Neither agree nor disagree	0%
Disagree	0%
Strongly disagree	0%

*The STEM Ambassador(s) helped me to understand more about the careers available within Science, Technology, Engineering and/or Maths*

Strongly agree	20%
Agree	60%
Neither agree nor disagree	0%
Disagree	20%
Strongly disagree	0%

*The STEM Ambassador(s) helped me to understand more about which employability skills and attitudes I should develop to help me get a job (e.g. communication skills, problem-solving, determination, creativity etc)*

Strongly agree	0%
Agree	60%
Neither agree nor disagree	40%
Disagree	0%
Strongly disagree	0%

*The STEM Ambassador visit helped me see some of the options and opportunities available to me when I'm older.*

Strongly agree	40%
Agree	60%
Neither agree nor disagree	0%
Disagree	0%
Strongly disagree	0%

*The STEM Ambassador(s) helped me see that it's possible to overcome difficulties or poor decisions and that it's never too late to change your mind and do what you need to do to get where you want to be.*

Strongly agree	40%
Agree	40%
Neither agree nor disagree	0%
Disagree	20%
Strongly disagree	0%

*I felt encouraged by the STEM Ambassador(s) visit and more confident about my own future.*

Strongly agree	40%
Agree	20%
Neither agree nor disagree	40%
Disagree	0%
Strongly disagree	0%

## Impact on STEM Ambassadors

Sarah and Roger are well-experienced people, have been STEM Ambassadors for a length of time and are motivated individuals and confident presenters. Both have some experience within the educational sphere and therefore were well-suited to under-take activities with students at Ancora House School, who are likely to be more vulnerable and be facing additional challenges compared with students in other school contexts.

However, both indicated that their sessions at the school still had several positive benefits for themselves including:

- Experience of working with a range of people in different circumstances
- Helping them to keep their skills 'topped-up'
- Keeping up-to-date with changes within educational policy and practice
- Providing relevant content for building their CV

In addition, both volunteers expressed the enjoyment they experienced from participating in the activities and the sense of satisfaction gained as a result of the positive reception they received.

When asked whether they felt their activities had been successful, both volunteers noted the active engagement of the students. Roger commented:

*Well I got plenty of questions! Hopefully I gave the students a better understanding of engineering and how it can be a wonderful career.*

Sarah said:

*Yes, the students were very involved – asked lots of questions, talked openly about themselves and what they planned, etc. Kerry (the teacher requesting the support) and the other assistant also said they thought it had been very successful. This is my third visit, speaking to different children each time, so they must think I'm doing something right!*

In addition, Sarah and Roger could both identify ways in which their volunteering inspired young people in their STEM learning and careers awareness. They could articulate the positive impact of the work they do and the difference it makes.

Roger emphasised how STEM Ambassador engagements help ensure that students have a clear understanding of what careers are, and their availability to all, saying:

*By listening and helping students with projects in classes and at STEM clubs, I can show them that engineers are life's problem solvers. Hopefully, by shifting perceptions, I have also encouraged girls to consider engineering as a career. I like to think that if I can help young people to get a good overview of engineering, I'll help to replace people such as myself, who will eventually disappear!*

Sarah highlighted the way her activities opened up the world to students.

*Just showing them my very varied career always surprises them. Hopefully they will go away thinking bigger – there are lots of things they can do. They will have to move from job to job in their careers - as I've done - and that it can be exciting! I think for many pupils, just meeting adults from different career backgrounds is useful – something I never got to do at school!*

## Summary

From an initial email querying whether or not the Hub might be able to service a request for STEM Ambassador support in their setting, the team at Ancora House School and the students have benefited from a range of support from two STEM Ambassador volunteers who have been able to provide a wealth of experience, knowledge and enthusiasm to support the great work done there.

Kerry summed up her experience saying,

*Aspiration, motivation and engagement in wider opportunities is highly important in young people's mental health recovery. I believe the STEM Ambassadors we are working with are helping us to help our students with all these vital things.*

