

Liverpool Life Sciences UTC

Letter from Principal, Phil Lloyd

What a term it has been, I don't think anyone could have expected it to go better. Looking now at our brilliant students, it's hard to imagine that we first opened our doors a few months ago.

Back in September, that first day of term can only be described as nerve wracking. I was nervous, 'Would the school buses arrive?' 'Will the pupils actually turn up?' Those nerves soon turned into a wave of huge relief as the students arrived and began their first classes at UTC. I am thrilled to say that I have watched those who arrived wracked with apprehension blossom into confident, independent young adults.

All students have embraced the UTC culture, maturing and growing rapidly and developing excellent skills. I'm sure, like me, you have seen a big difference. I recall the day our 6th Form were presented with their genomes for their Innovation Labs project. They had fear in their eyes, questioning what they had got themselves into. Now I see them questioning their teachers, peers and our partners as they carry out their projects.

And they are a credit to us, you and themselves. We host lots of events, some for future students, others for teachers of other schools, business partners or the local community. Our students are always keen to get involved and don't wait to be asked. I have watched them engage with our business partners, academics, consultants and industry professionals, and the

feedback that I receive from those professionals is consistently outstanding - gushing about how brilliant they are. All should feel immensely proud of representing the school in this manner; they are ambassadors of the UTC.

A few personal highlights of the past term from me. The trip with the Applied Sciences and Health and Social Care students to the grand opening of the North West Emergency Services Training College was a great experience. All students were quick to get stuck in, mixing with health and emergency service professionals. They were in their element, so exciting to see.

On the topic of throwing yourself in, we are also immensely proud of our students who have been on internships at the Royal Liverpool Hospital. Three students in particular, Maddie, Stevie and Hannah, came and thanked me for the amazing opportunity and said that they had such an extraordinary time there. They have created themselves an opportunity for the future and have been invited back to the Royal due to their appreciation of the experience and the excellent work they did. The ethos of treat every day as an interview is never more true than when out on placement.

As we close the doors on this first term, I see a bright future ahead. More placements, more projects, more opportunities to grow and to learn and to achieve the dreams for the future.

Have a great Christmas break and see you in January for another excellent term.



Innovation at the UTC

At Life Sciences UTC, our students learn both the theory and hands-on skills. Science lessons include practicals like dissecting hearts and stretching arteries to see how they work. Our goal is to ensure students can make connections between topics and apply their knowledge practically. Integrating the innovation projects as practical biology and chemistry with our high quality A Level and GCSE curriculums offers not only an enjoyable and fascinating aspect to learning but also helps the knowledge stick.

Earlier this term, students started a long term innovation project into genome research. This project runs throughout the two years in the background of curriculum studies and alongside the second, shorter-term innovation project. Each student was allocated a genome of an organism, and is working to analyse amongst other things its enzymes, function and structure. Within their research, students are carrying out database mining (a sub-field of computer science) and BLAST searches (Basic Local Alignment Search Tool). This enables them to understand and compare the primary biological sequence information of their genome and its DNA, the building blocks of Life Science. Dr Moore reminds us that these two types of research aren't commonly used until degree or even PhD level, but the excellent resources we have here at the Life Sciences UTC mean that students can safely utilise this advanced equipment.

The Year 12's short-term innovation project is delivered in conjunction with one of our partners Eden Biodesign. The successful Liverpool based biopharmaceutical company is working alongside the school to help our students learn how to grow Green Fluorescent Protein (GFP). This may sound like a novelty, but GFP is a molecule that is the result of recombinant DNA. Recombinant DNA is something which is not grown in nature, and reflects the science used to create large molecule medications such as insulin. Students work in the innovation labs every Thursday growing GFP in cultured conditions, finding the best environment for their protein, learning techniques such as protein purification, plating and chromatography

Chief Operating Officer of Eden Biodesign, Derek Ellison, gave a fantastic masterclass to students about the role Eden Biodesign play in producing biosimilars and biobetters to make healthcare more accessible around the world. We were all fascinated by just how innovative Eden Biodesign are, particularly in their production of biopharmaceuticals for oncology, urology and women's health and we now have a raft of students desperate for opportunities to work with them at their amazing facilities in Speke.

Congratulations to the students selected to present their research findings back to a team of experts from Eden Biodesign. Like us, they were blown away by the understanding, practice and maturity of our students and have promised us a tour of their laboratories in Speke.

Rachel Winrow and Rose Meehan, Year 12 really enjoy the hands on approach to learning. The practical side that takes place during project based learning replaces frees that students at other colleges have within the day, and Rose said how much more useful this is. Both pupils would like to have careers in medicine in the future, so working alongside companies such as Eden Biodesign is a great experience.



"My friends in other schools are jealous of the types of projects and experiments we get to do here. It seemed hard at first, but the teachers simplify it so we can understand better. I really enjoy it." Rose Meehan.

Enrichment at UTC

Year 10 students have now started their enrichment programme including the Duke of Edinburgh award. Alongside standard curriculum classroom lessons, students are undertaking a series of 12-week courses as a part of the UTC's 'Pledge to your Future' scheme. Vice Principal Mr Parry has been assisting the students with their choices and encouraging students to start thinking about what they can do now to support their future.

"The school day here runs 9am-5pm, so we want to gain as much out of this time as possible. Other schools may focus on having extra P.E. We want to build enrichment skills. Our Year 12's are currently undertaking a project that will help them hit the key points when writing a University or apprenticeship application. Our Year 10 are working towards the Duke of Edinburgh award," says Mr Parry.

Year 10 students have had the choice of a number of enrichment activities, from dragon boat racing in the Albert Dock to creating fitness plans and engaging in charity work. The programmes were advertised within school and students used their iPads to scan a QR code on the activity of their choice and sign up. So far, it's been an excellent way for students to interact with one-another, breaking out of their normal friendship groups as they work together within these activities.

Students, Emily Montgomery-Smith and Megan Robertson are both volunteering to support primary school science lessons. The girls are still within the thinking-stage of the programme, but they're really keen to get started and earn their Duke of Edinburgh award. "

Student Marcus Page-Jones has his sights set on music production. He plans to cover a number of songs and produce them with a band. Mr Parry said that rather than Marcus having traditional music lessons, his enrichment time will be spent producing a CD and writing songs. This will cover the skills part of his Duke of Edinburgh award. A keen musician in his spare time, guitar and piano player Marcus said that he may even perform a few songs for the rest of the school!

Another really exciting aspect of the enrichment programme is the prospect of the Life Sciences UTC joining forces with a school in Africa. Beth Farr has taken

up volunteering for Sub-Saharan African charity, The Memusi Foundation. She wants to research the foundation and raise money in order to help improve standards of life for African students.

Callum Morgan, Year 10, reports on Enrichment at UTC

Enrichment has gained support from students all around the school. Music is a popular favourite and I had the luck to talk to some of the students doing this activity, they described it as, "Really fun and enjoyable" "A worthwhile use of time" "Very rewarding" and "A chance to socialise with people you wouldn't usually talk to", I had very similar responses from people doing jewellery making, dragon boating, getting fit, and my colleagues in the media team. I also talked to students doing charity work, they said "It is great to be given the chance to make a difference" and "If we manage to succeed, we know anyone can change the world." **All together it has been a very successful first full term, and this is only the beginning ...**



"Most schools don't give you the opportunity to complete the DofE within lessons. They'll suggest it, but you'd then have to do it in your own time. Here at UTC, the teachers really support you and give you help with it. I've always wanted to do it, and now the school has given me that opportunity".
Emily Montgomery-Smith.

Placements at UTC

All of our post-16 courses have extensive work placements, internships and work related activities. We passionately believe that experience in a range of fields is crucial to making a good decision about your next steps, demonstrating your commitment to your decision and making successful applications. Right now, we have students out at the Royal Liverpool Hospital. So far they have spent time in A&E, orthopedics, the labs, and most exciting in my opinion, had the chance to spend time on the wards working with real nurses and doctors doing the jobs they dream of. At UTC we are amazingly lucky, all students will take part in a placement at the Royal and we are supported fully in our commitment to the work placement programme by our amazing partner businesses. Just this week, we have secured placements for 6 students to spend 4 weeks with Redx working on medicinal chemistry, DPMK and pharmacokinetics (wow!), two week long placements at Pro Lab Diagnostics, and a HR and business internship with Nutricia.

Time at these incredible local employers means that students have a chance to make a vital impression on a potential future employer, learn the skills that cannot be recreated in a school environment and help secure a place at university or in employment.

Jack Condron, Head Boy at the UTC says,

“During my placement at the Royal Hospital, I got to go on tours around different departments. It really opened my eyes to what life was like on a hospital ward and reminded me that this is really what I want to do. UTC and the teachers here always push you to utilise independent thinking. Being on the placement pushed me to be independent and use my initiative to make sure I had the most worthwhile experience possible.”

My Week at the Royal Liverpool Hospital by Madeleine Doran

What a fantastic experience my week at the Royal Liverpool Hospital was. I was aware of how much more can be learnt from work based learning and was eager to undertake some of the many challenges a busy hospital faces whilst boosting my CV. The week did not disappoint and it was a privilege to see the many different roles performed within the hospital.

I had the opportunity to observe all the different departments in the hospital and speak to numerous members of staff. As a group, we had the chance to visit the dental hospital and make teeth impressions and fillings using mix and water. We also had the option to speak to different health care professionals who specialise in therapies such as occupational therapy and physiotherapy. I thoroughly enjoyed visiting the Accident and Emergency unit as I am hoping that is where my future career lies. These were only a few of the many interesting and diverse departments I got to go to.

After my week at the hospital, I have increased admiration for the excellent staff and feel even more focused on joining them in my future career.



“I decided to join UTC as I want to achieve excellent grades. It’s a huge step in the right direction as I want to become an A&E doctor. Even if I don’t achieve the grades, I’ll leave with much more due to the things I’ve done here and the skills that I’ve gained, for example my placement at the Royal Liverpool University Hospital.” Jack Condron.

The UTC Masterclass programme

Understanding the range of careers available is a challenge for many students and schools. At UTC we work with the very best of academia, industry and the public sector to help students understand the vast range of potential jobs, university courses and apprenticeships that time with us might lead them to. Just one of the ways we do this is through our extensive masterclass programme. Twice a week we bring in experts from our industry partners, consultants and practitioners from the Royal, and leading academics from the University of Liverpool to talk about what they do, what they research, where it might take you and why it is so incredibly awe inspiring. So far, we've heard about the drug discovery process from leading local pharma company Redx, about the use of Zebra Fish for research and modelling human disease from Dr Kate Hammond at the University of Liverpool, Advanced Coronary Syndromes from Ian Pierce-Hayes also based at the University and a fantastic Introduction to Molecular Diagnostics from Pro-Lab superstar, Charlotte Duncan. Not only do these masterclasses showcase just how important life sciences is to the local economy, they also show us that people like us can go on to have amazing jobs in fields like these. And most importantly these jobs exist locally for people with the right skills – the same skills we prepare students for through masterclasses, project based learning, work placements, professional qualifications and great traditional academic qualifications like A levels and BTECs.

Partners at UTC

We would like to take this opportunity to again thank our business partners for their continued support this term. So far we have been able to offer over 30 expert masterclasses on a wide range of topics. We have offered 37 work placements so far with many more planned for next year including 12, 4 week placements at Redx Pharma.

We have been given a fantastic range of equipment and consumables to help us do even more practicals alongside advice on guidance on how to ensure the projects we run reflect the real world of work in a hospital or lab setting.

With our partners' support we are also exploring a number of additional professional qualifications to ensure students are the most desirable applicants for jobs locally and nationally.



We would like to welcome on board a new partner, LGC, a British independent, science-based service company providing chemical, biochemical and DNA based analysis.

We look forward to working with them to devise a range of fantastic opportunities for our aspiring analytical and forensic scientists.

Congratulations

Huge congratulations to Jack Condron and Libby Ratcliffe, the very first UTC Head Boy and Girl (pictured below). We thank all who applied and look forward to working with our impressive team of Head, Assistant Heads, Students Ambassadors and Year 10 Prefects.



“Being here has opened my eyes to lots of opportunities and more jobs within science. I am still unsure of my future career, but studying at UTC has enabled me to think about doing something I would never normally do. The master classes that we have are interesting. I particularly enjoyed the lectures on how to deal with somebody who has a brain tumour and the glow-in-the-dark zebra fish.” Shannon Thompsom.

The Autumn Term Gallery



