

Liverpool Life Sciences UTC

Summer Newsletter 2014

Wow! It has certainly been a year to remember. Looking back to this time last year, working in a garden shed project office, to sitting here today in our amazing UTC, I can only tell you that I am stunned by the progress we have made.

For year 10s, the change in our students in just one year has been staggering. We have watched our youngest students grow into mature, professional, aspiring scientists and healthcare professionals. Our year 12 students are now firmly focused on the future, making decisions, preparing for university, work or an apprenticeship, looking forward and taking extraordinary steps towards their careers.

I have been impressed by the appetite our students have had to embrace new opportunities, applying for competitive placements, shark tagging in Liverpool Bay, going to classical music concerts, attending our masterclasses, going to university open days and throwing themselves into working in the labs and healthcare suite. I would wholeheartedly encourage all students to participate in as many of these experiences as possible.

As have our visitors. Department for Education advisors, academics, Members of Parliament, hospital consultants, and industry executives walk through these doors every day. I am consistently told that our students clearly communicate their

passion for learning, their passion for being at the UTC. Our visitors also tell us that the time spent here is skilling them for the future, is preparing them for jobs in the real world and is going to make them stand heads and shoulders above students from other secondary schools. It makes me proud – I hope it makes you proud too.

We are now making final preparations for new students to join us in September with a few places still available for Year 10. Bus routes are being revised to better serve existing and new students and we are working closely with our new teaching team to make sure all is in place for September. We will be in touch over the summer to keep you informed of all the changes in time for next year.

Have a great summer break. Look forward to seeing you in September.



Phil Lloyd, Principal



Shark Tagging Exhibition to Liverpool Bay



A group of students from Year 12 were invited to participate in a shark tagging trip with Liverpool Bay Marine Life Trust. Seven students from the UTC made the boat trip into Liverpool Bay to search for a variety of shark species that are required for the conservational tagging project.

The primary species targeted in this project are starry and common smooth-hound sharks and tope sharks, but unfortunately the group didn't come across any of these species during their trip. Although, they did manage to catch the specimen modelled by Noreena below!



Classroom Medics Visit



Year 12 students at the UTC were lucky enough to receive a visit from Classroom Medics, who specialize in delivering a range of inspirational workshops focused on careers within the health sector.

The first part of the workshop involved an introduction to the various different types of common health checks. Students were shown how to check their blood pressure, lung age and oxygen saturation using specialist equipment used daily by doctors.

The workshop also looked into different types of fitness, stress and reaction tests and explained how these can help with the diagnosis of patients with lung disease or other degenerative diseases.

Year 12 student Shaun found the workshop particularly useful, and said;

'I thoroughly enjoyed the experience and I know this will come in useful someday as I want to pursue a career in medicine. One day I will have to assess a patient using some of these tests myself.'

Liverpool University bursaries

We are delighted to confirm that as part of our partnership with Liverpool University, students progressing to the University from Life Sciences UTC will receive a Bursary. **The UTC Bursary for Entry in 2015 is worth £3,000 per year, and all our students who progress to the University of Liverpool will be eligible. There is no further eligibility criterion; the awards are not means tested or based on attainment.**



UNIVERSITY OF
LIVERPOOL

Memusi Foundation

Over the past year the UTC has been working closely with The Memusi Foundation, supporting communities across the world that are trying to make a change.

Students have arranged several fundraising activities and managed to buy 25 Solar Ovens for the cause. Year 10 student Michelle Van Zyl has been participating in the fundraising efforts. She said;

‘The thing I have enjoyed the most about being involved with The Memusi Foundation is contributing and shaping short term and long term plans. Some of the things we discussed include organising health/hygiene lessons for teachers and students over in Magadi, hoping to reduce simple infections that kill.’

**New Partners**

Life Sciences UTC are proud to announce three new industry partners that will be supporting us throughout the next academic year; Bristol Myers Squibb, Bioline and PSS.

Bristol Myers Squibb has a Pharmaceutical Research Institute site in Moreton, Wirral which investigates new compounds to ascertain how they can best be turned into medicines that can be manufactured. This work requires the proper integration of disciplines such as pharmaceuticals R&D, analytical R&D (including analytical development, quality control and stability), clinical supply operations, quality operations, compliance and informatics.

Bioline develop and manufacture over 300 reagents for the life sciences industry and research markets. Products vary from reagents to kits needed for molecular biology, cell analysis and more. Bioline are established in a number of countries including the UK, USA, Germany and Singapore.

PSS deliver services into four key areas of work; creating homes, empowering communities, promoting wellbeing and strengthening families. They support people in every area of their life whether it be finding somewhere to live, meeting new people who have been through a similar life experience, improving their health or ensuring their family are supported and strong.

We are delighted to welcome our new partners and look forward to working together in the future.

English Research Trip at Liverpool Central Library

As a part of research for their A2 Investigation coursework, Year 12 English Language students visited Liverpool Central library. They made use of the archived newspapers, the education section and specialist genres linked to their individual question set in class.

It was also a great opportunity to experience the fantastic facilities that the library has to offer, from the high tech facilities to the traditional Picton Reading room and Hornby library, which is a Grade II listed building with stunning architecture.

A2 Geography Field Trip

Our year 12 students enjoyed a sunny day out at Formby sand-dunes recently exploring ecosystem development and biodiversity of the area. This enabled them to extend their subject knowledge within the topic of ecosystems.

Pupils undertook numerous fieldwork techniques to consider how the environment changes from shoreline to forest, and how this affected the quality and quantity of flora and fauna.



Pupils also had the opportunity to speak with the Sefton Coast Countryside Ranger, who explained the new management programmes due to be implemented for the area from 2015 onwards and discussed how these might affect the psammosere.

They then returned to UTC labs to conduct further detailed experiments with soil samples collected from the dunes. Pupils will now go on to analyse, interpret and evaluate their findings in preparation for their exam in June 2015, which will test their knowledge and understanding of this interesting geographical topic.

Vince Cable supports Make It Britain and the UTC

The Secretary of State for Business, Innovation and Skills, Dr Vince Cable MP visited Liverpool Life Sciences UTC on 23rd June to celebrate Make It Britain; an event supporting the manufacture of great British products.

The UTC's focus on enhancing the talent of young people whilst partnering with some of Merseyside's biggest industry leaders from the sector, made Liverpool's first University Technical College the ideal setting to host a celebration of British innovation.

Dr Cable received a tour of the innovation labs and health suite and was impressed with the industry standard facilities available to our students. In the health suite students invited the Secretary of State to observe an airway management demonstration on SimMan, the UTC's advanced patient simulator.

He expressed his support of Life Sciences UTC, going on to say;

'University Technical Colleges are brilliant, and great for the economy. We have some of the best designers in the world being highly innovative and creative, emphasising what Britain is really good at.'



International Festival for Business Skills Show

Life Sciences UTC are proud to have been invited to participate in the International Festival for Business, a festival focusing on bringing business opportunities to Merseyside. Held in Liverpool throughout June and July, the festival has provided our students with access to great business links and opportunities.

The UTC staff and students invited Skills Show attendees to participate in a workshop using Sim Man, our advanced patient simulator. Visitors were shown how to check the patient's vital signs and analyse symptoms to come to a final diagnosis.

The Big Bang Fair World Record Attempt

A team of students also attended the regional Big Bang Fair held at Aintree. Representing the UTC, the group attempted to break the current World Record for the biggest Sierpinski pyramid.

As well as participating in the World Record attempt, Year 10 students were able to visit the various exhibition halls to meet inspiring engineers, scientists and researchers from some of the most innovative companies in the UK.



Eden Tanner from St Johns College, Oxford Masterclass **By Dara Beesley Y10**

I was very excited about being given the opportunity to speak to Eden who is doing a PHD at Oxford University, as I am hoping to attend either Cambridge or Oxford myself. I would like to study a course involving maths and science, and Eden is currently studying science.

I was able to ask her what she thought would be best regarding my options for A-level and she was helpful in the way that she tried to get me to think ahead. As she has already been through the process of GCSE's and college, and her age is in close proximity to mine it felt very easy to talk to her.

Eden also spoke about her pathway and why she chose the A levels that she did. She told us that she took biology and chemistry, as she had always been good at biology and found it easy. She then told us about her reasons for choosing chemistry. She said "I didn't like chemistry and there was so much I didn't understand, so many things that made me wonder about the subject, and that's why I chose it."

She told us that even though you may be really good at a subject and you understand it completely, it doesn't mean that it is the correct one for you. She taught me that I should take the subjects I feel are challenging me, not ones that I find easy and don't wonder about.

Overall, I really enjoyed the talk and it helped me think more clearly about what I would like to do in the future.



Croda Placement Diary – Dan Groom

For the last 4 weeks I have been on a work experience placement at a chemical company called Croda. In the past few years Croda has been aiming to move towards greener more eco-friendly alternatives to man made products; this is the area I have been working on.

I have been working with the BioTech department on fermentations to produce something called BioSurfactants. What are BioSurfactants? In simple terms this allows two unmixable things to become mixable. Take oil and water as an example. Mix them together, give them a good shake and it looks pretty mixed, but let that mixture rest for a while and slowly it'll begin to settle out forming the oil layer on top of the water. However if you add a surfactant and give it a good mix it won't separate. So a Bio-Surfactant is a sustainable 'mixerupper'.

I was given a research project from the company to compare two growth media for the yeast that we were fermenting. During this project I used the fermenters and lots of different analytical techniques and machines that other people my age would very rarely use. From running Gas Chromatography to SDS Page Gels to Glucose Concentration Assays these techniques are frequently used in research. Thus it was a greatly useful experience and helped my skills grow.



Why do Innovation at the UTC – Professor David Hornby, Director of Innovation

One of the questions that I am frequently asked by students, parents, academics, but **never** by employers, is 'why do we focus so much on enrichment, and "innovation" at the UTC?' Some would argue that the most effective use of school time is exam coaching: after all, the better a student's A level grades, the more likely that student is to obtain a place at one of the country's most competitive Universities! I have heard a number of recruitment officers advising students that their criteria are based simply on metrics: 'we have 250 places and we require AAB for entry, so focus on that and forget the rest'. Not surprisingly, some reach the view that time spent away from exam study is time wasted.

Whilst an exam-centric view is completely understandable, AAB gets you the place at your top University. This way of thinking is clearly flawed. Allow me to persuade you that this is a poorly thought-through, short term view.

Many undergraduates arrive at their chosen University with three As (in fact in the Sciences (including Maths), 38% of students in 2013 obtained grades of A or A*). It would not be unreasonable to think then that there is nothing to worry about and those taking Science A levels are high achievers. Given the healthy A level scores in Science, it would be expected that around 100 000 high performing graduates would be on the market and there would be no problem in picking up a talented new recruit. So why are businesses claiming that Science recruits are not fit for purpose and why are Universities expressing frustration about levels of numeracy and literacy of freshers? Could it be that the focus on examination performance may be inappropriate?

I think you will agree that one thing emerges from these numbers: if exam results are the sole indicator of National or even personal achievement, how are we in an economic down turn! It is against this background that we have taken a longer term view on the programme that we offer at the UTC.