Good day White Rose DTP!

My name is Caitlin McQueen, I am a third year DTP student based at the University of York and am Editor in Chief for the new White Rose DTP Newsletter!

We decided to start this newsletter as a way of improving the communication and networking between our three universities- a way to highlight and brag about (it’s hard work so show it off!) the research going on in our labs and cohorts, to share some of our own interests in wider science, to celebrate achievements throughout the DTP and not just within your lab and university, and to share some outside interests or events we think would be a good chance to involve the entire DTP in. We hope that this newsletter will help build friendships throughout the three universities to achieve a real sense of support and involvement outside of the arranged sessions we attend during the year.

The really exciting part about this newsletter is that it is completely student run- this means that if you have something that you want to talk about, or a suggestion for a future section/recurring article, you have the ability to do so! I really think this newsletter has the potential to get us all helping each other in labs, sharing techniques and woes, but also to get everyone involved in our “other lives” not quite so freely shared with each other- so if you’re fundraising for charity, wanting some support for your band, or your sports team, please use this opportunity to get us all supporting you!

In our first issue we will be talking to some PIPs survivors to get some advice and inspiration for potential placements, we will have some scientific features articles from the cohort and a feature on the recent second year visit to the Research Complex at Harwell in Oxford. We will also be saying goodbye to our first round of PhD students and will be catching up with a few to see what they have lined up post thesis submission!

Happy reading,
Second year cohort visit to the Research Complex at Harwell- 23-24th May 2016

At the break of dawn on 23rd May 2016, second year students from all three White Rose universities sleepy boarded minibuses destined for the Research Complex at Harwell, just outside of Oxford. During the journey, most took the opportunity to grab some more sleep- a great idea as we had a jam packed day ahead!

Arriving at Harwell, we were greeted with a welcoming lunch- including the most gooey and dangerously delicious chocolate brownie I have ever experienced! This was followed by some short talks from senior staff at the complex introducing its facilities and their fields of research to us. We then had an afternoon of tours of the facilities- including a magical conversion of clear liquid to purple liquid by lasers, the uses of the onsite protein production facility (featuring some attractive attire) and then extended tours of the complex’s largest facilities: the Diamond synchrotron and ISIS neutron source.

The scale of both Diamond and ISIS were so much larger than predicted and the guides on both tours were truly passionate and excited about the research they carry out at the site. As they were carrying out maintenance, we were also fortunate enough to be able to go within Diamond and see the components for ourselves- something that people actually carrying out the research there do not often see! It was a lot of walking, but the afternoon was really useful for gaining an understanding into how we can utilise Harwell’s facilities in our own research- the scope of research that Diamond and ISIS can help with is so much wider than I had thought.

In the evening, we boarded the “Party Bus” (or so it looked like) to Oxford city centre where we were treated to a meal at Pizza Express with some of the students from the Oxford DTP, followed by a quick tour of the Pubs Oxford had to offer! My personal favourite being a hipster-of-all-hipster craft beer and pizzeria who recognised the names of York pubs and had microbrewed beer available!

The following morning was a series of longer talks from leading researchers at Harwell, in which we learnt more about the resources available to us, how to apply to carry out research there, and how we can apply their resources to our own research- This was a great chance for the students to chat to the staff and get excited about using Harwell within their PhD!

Despite the early morning, everyone had a great couple of days and I personally became inspired to look into ways of utilising more structural biology techniques within my own PhD project.
I am currently completing my 3rd year of study jointly between the departments of Chemistry and Molecular Biology and Biotechnology, with Simon Foster and Simon Jones. I synthesise novel amino acid based fluorescent probes to study, in conjunction with super-resolution microscopy, the biosynthesis and architecture of peptidoglycan in bacteria. I was recently the Chair of the University of Sheffield’s Chemistry Society, a committee lead by postgraduates for all chemistry students. The committee organised a series of events throughout the year including socials, a ball for 250 people and interesting science talks from internal and external professors.

Where did you do your placement?
Working in Clinical Operations and Recruitment at a Phase 1/2a Clinical Trial Unit at Quintiles, in London.

What did your placement involve?
For the first two week I was shown around the London unit at Quintiles which consists of a CRO and Investigator site. I was shown how data management, project managers, quality control, physicians, nurses, recruitment, screening, pharmacy, medical labs, HR and clinical operations work. I was set up more permanently in Clinical Operations who oversee the running of the investigator site i.e. the actual running of the trial involving nurses, physicians, pharmacy, labs, data collection etc.

Why did you choose your placement?
My aim was to look at the secret world of clinical trials often sponsored by large pharmaceutical companies and highly confidential. I wanted to understand the overall running of a trial, the level of ethics achieved and what it was like to be a volunteer from start to finish.

What point during your PhD did you do your placement and was this a good time?
I completed my PIPs the summer between my second and third year.

For me this was a great time as a lot of my previous work was failing and it gave me chance to have a break, re-focus and start 3rd year refreshed with a new aim for my project.

What resources did you find useful when searching for a PIPS placement?
I contacted friends whose current jobs or parents were working for clinical trial companies. This was the only way to work for Quintiles as they do not usually take interns, but since I was doing a PhD and was un-paid they made an exception.

How did you organise your PIPS placement, was it difficult to get a placement?
The hardest part is deciding what you want to spend 3 months doing, then with the internet, LinkedIn and friends its pretty easy to set something up. As a PhD student you’re seen as quite a desirable asset/target employee to companies.

What did you enjoy most about your placement?
I enjoyed the chance to work in an office/clinical style environment. Being very quickly given responsibility and mini projects was quite fun, as well as adjusting to the hierarchy of the business world. I met some great people and made some good friends living in a different city and exploring new places.

What skills/experience have you gained from the placement?
I have learnt a lot about what level of skills I actually have in a non-research based environment, all gained through doing my PhD. It showed me the limitations of lab work in a commercial environment but that the skills you have are really transferable across a broad range of disciplines.

If you could do anything differently what would you do?
I wish I had been even more creative and moved a little further afield for my PIPs and taken the opportunity to work in a different country. It has shown me list of other science related jobs I would now like to consider.

Do you have any other advice for students planning their PIPS placement?
Be creative, move away, use any contacts you have and always pack a suit!
I’m at the University of York, supervised by Dr Gonzalo Blanco and Dr Betsy Pownall. My project centres around the ky/ky mouse, a model of recessive hereditary kyphoscoliosis (spine curvature) which lacks the z-disc protein, KY. Outside my PhD, I enjoy running, playing the piano and contemplating how much more money my friends who got real jobs are making than me.

Where did you do your placement?
With the Research and Innovation Team at Yorkshire Cancer Research (YCR) in Harrogate. YCR is the biggest regional cancer charity and they fund research to improve cancer care and awareness in Yorkshire, which has some of the poorest cancer outcomes in England. The Research and Innovation team manages ongoing research projects and is responsible for launching funding rounds and processing applications.

What did your placement involve?
This was an administrative role but the tasks were quite varied. We were preparing to launch the 2016 funding round, so there was a lot of preparing documents and guidance for applicants. I had the chance to make some applications to Trusts and Foundations on behalf of the charity, to get them to help fund some of YCR’s projects (I don’t think any of them were successful, but good practice!). I helped to write blog posts summarising news items, and lay summaries of projects in YCR’s research portfolio for their website.

My most substantial task was doing some data analysis on cancer screening uptake across Yorkshire, identifying areas where screening uptake is particularly poor.

Why did you choose your placement?
I saw it as a valuable opportunity to see whether a science-oriented career outside of the lab was something I would enjoy. I also saw it as a chance to see the other side of the funding process (the first side being my often upset supervisors).

What point during your PhD did you do your placement and was this a good time?
I was 2 ¼ years in. Honestly, it was a bit of a welcome break at that point! I’d had a false positive result I got very excited about and was chasing for a while. I was feeling pretty frustrated when I realised it wasn’t genuine so it was nice to be able to break off.

What resources did you find useful when searching for a PIPS placement?
Lorna and Amanda were very good at advertising some available opportunities. They also put me in touch with a student who had already completed a PIP there, which was very useful.

How did you organise your PIPS placement, was it difficult to get a placement?
It was all rather painless! Lorna/Amanda put me in touch with the Head of the Research and Innovation team. I met with her to talk about the potential placement and when that might happen. She told me to go think about it and get back to her, and I did.

What did you enjoy most about your placement?
The atmosphere was really nice – the organisation is fairly small and everyone is very friendly, and there is often cake. In terms of the work, the cancer screening analysis was quite interesting and it felt very rewarding to see that the information I had put together was being used to organise something in the real world.

What skills/ experience have you gained from the placement?
It helped me refine my writing skills, particularly the challenge of condensing research projects down into lay summaries. I was able to see the good, the bad and the ugly of applications and a better understanding of how funding works.

If you could do anything differently what would you do?
Given the organisation is quite small, I should probably have taken better advantage of the ability to float around and get involved with other teams and understand what they do.

Do you have any other advice for students planning their PIPS placement?
Think of it as a litmus test. It’s a good opportunity to see if you’d be happy in a career outside the lab.
Welcome to the inaugural BBSRC White Rose newsletter! I’m Rebecca, the Scientific Features Editor. This column is a great opportunity to give writing a go in quite an informal setting. An ability to explain complicated science in an interesting, understandable and concise way is a hugely important skill for many reasons. Engaging the public in current research is key especially in areas such as GMOs, disease therapies and climate change; it is too easy to say ‘they won’t understand’ when the fault may be in the explanation itself. Arguably even more important is finding ways to use science to intrigue and inspire new scientists through school workshops and other engagement events. After all, there is limited value in great discoveries that only a handful of people understand. So that being said, I do hope you take this opportunity to talk a little about the science that excites you, the conferences you have attended or the opinions that you have. I look forward to reading it all!

I’m Caroline, a second year PhD student at the University of York, and I recently attended the Crossing Biological Membranes (CBMNet) early career researchers event in Sheffield.

This was a two day event with the first day providing the opportunity for early career researchers to showcase their research and receive feedback from a panel of academics and industrialists. The second day was composed of presentations and workshops about developing a career in industrial biotechnology with experts presenting on their career experiences followed by sessions on reaching career goals and writing a great CV.

In my opinion, although I was very nervous about presenting to a group of experts, I gained most from the first day of the event where each early career researcher gave a presentation on their current research project. It was a great opportunity, in a surprisingly relaxed setting, to practice presenting my research to a group of relative strangers. Also, the fast pace of the day with talks only lasting 10 minutes meant that it was possible to stay alert and engaged throughout the whole day (which is something I, and I’m sure many other people, have been known to struggle with). The most valuable lesson I learned from the first day were the features that make a good/bad presentation. I was able to see 20 different presentations in the same day and pick out the features that made them engaging, more exciting to listen to and easier to understand.

Highlights of the second day included Dr Alan Goddard’s talk on “My Career in Academia: The Good, The Bad and The Ugly”. This followed his career from undergraduate degree to his recently secured position at Aston University, discussing the good and bad times throughout and giving words of advice on each of these situations. There was also a session which gave some useful advice on how to structure your CV to emphasise your specific competencies and experience.

I think early career researcher events are a great opportunity to practice your presentation skills before having to present to experts at a conference and would highly recommend attending one during your PhD. This conference gave me an opportunity to assess which career path I might like to follow and how I might go about this and I came away feeling very motivated to take up more opportunities that are presented to me.

For more information about the events and opportunities offered by CBMNet visit their website.

Twitter @CarolineRosePea
I'm Rebecca from York and I have taken a look at what scientific advances have been made in the last 12 months. From board game-playing computers to bleeding plants, here is an overview of particularly interesting research that has been making headlines.

NOVEMBER
The hugely popular CRISPR-Cas9 system was used to engineer a gene drive in mosquitoes. These insects were resistant to the *Plasmodium* parasite that causes malaria and it was found that these resistance genes spread to nearly all offspring of the mutant mosquitoes. More work is needed to assess the stability of the gene drive but the researchers were hopeful that it could present a useful way to control the spread of the disease.

DECEMBER
CERN, the home of the Large Hadron Collider (LHC), released observations that hinted at the discovery of a new particle heavier than the Higgs Boson. The announcement prompted a flood of new papers, 150 in 21 days, from theoretical physicists attempting to explain the data.

JANUARY
A computer beat a human professional at the ancient Chinese board game Go in a first for artificial intelligence. Fan Hui, the European champion, was beaten by the general-purpose algorithm taught to AlphaGo. The highly complex game has more possible outcomes than the number of atoms in the universe, meaning the computer could not simply learn all combination of moves.

FEBRUARY
An antibody taken from the blood on an Ebola survivor was found to protect monkeys infected with the virus. The patient became infected during an outbreak 20 years ago and the antibodies isolated from his blood affected antibody-dependent cell-mediated cytotoxicity, providing hope for a human vaccine.

MARCH
Not so friendly neighbours. It's possible that modern humans may have driven other hominins to extinction. Recent dating of rock and sediment suggests that *Homo floresiensis*, nicknamed ‘the hobbit’ for its tiny stature, was driven out of its cave home approximately 50 000 years ago. This date coincides with a large movement of modern humans, suggesting a link.

APRIL
Plants bleed too. Wounds to the bittersweet nightshade *Solanum dulcamara* do not close completely and seem instead to bleed a sugary nectar. It is thought that the role of the secretion is to attract insects that will defend the plant against pests.

MAY
A physical link between poverty and an increased risk of mental illness in children was discovered, with epigenetics taking the blame. Children from poorer families had more methylation in the *SLC6A4* gene that encodes a serotonin transport protein. This change in brain function could increase the risk of developing such conditions.

JUNE
Double trouble. A bite by the *Aedes aegypti* mosquito worsens the viral disease that it spreads by attracting neutrophils to the site, enabling multiplication of the infective agent. The findings are important as they may be applicable to other viruses spread by this vector – Zika and dengue.

JULY
Eye spy...a single photon. A group of human participants could identify the emission of a photon over a blank more often than if they were guessing at random. The likelihood of correct detection increased if another photon had been present five seconds beforehand. The limits of perceivable light had previously been unclear.

AUGUST
There were promising results in a small scale trial of a drug which may remove the proteins involved in Alzheimer’s disease. The monoclonal antibody aducanumab was shown to degrade the amyloid-beta in patients with the disease, replicating results produced in mouse studies. A larger trial is now planned.

SEPTEMBER
The first 'three parent baby' was born in Mexico. The baby's mother carries a heritable mitochondrial disease and so, to prevent this being passed on to her child, the nucleus from her egg was transferred to a donor egg with healthy mitochondria before being fertilised with the father's sperm. Critics are questioning why the US team carried out the procedure in Mexico, a country with less tight regulations.

OCTOBER
Biologist Yoshinori Ohsumi was awarded the Nobel Prize in Physiology or Medicine for his work into autophagy. Sometimes defined as ‘self-eating’, autophagy is the process by which cells destroy their own contents and Ohsumi used baker’s yeast *Saccharomyces cerevisiae* to identify the genes involved in this. Disruptions to this mechanism have been linked to cancer, Parkinson’s disease and diabetes.
5 Tips for improving your science communication online

I’m Alex from the University of Leeds and earlier this year I attended the Voice of Young Science’s Standing Up for Science workshop. One of the workshop’s key messages was that it is a scientist’s duty to ensure that their research outcomes are communicated effectively. In this increasingly digital age, what better way to share your scientific messages with the world than by harnessing the power of the internet! Here are five easy things you can do to get more involved in science communication.

1. Tweet, tweet!

Enthusiasm for science can be found in every nook and crevice of the internet, but the number one social media community for science is Twitter. Science communication topics can be found by searching for #scicomm, #phdchat, #STEM and many others. A great way to get involved is to join a rotation-curating account. These typically change hands every week to allow a new person share their work, interests and discussion topics. If this sounds interesting, check out accounts such as @BioTweeps, @RealScientists, @IAmSciComm.

2. Try a little bit of everything

Experience builds confidence. Creating educational and entertaining videos, writing a blog or organising a podcast may seem daunting at first, but by asking for advice you can be sure of plenty of help from within the community. Producers of science blogs, video channels and podcasts are often interested in collaborating with new contributors, so don’t be afraid to put yourself forward for opportunities even if you haven’t got any previous experience. Finally, keep an eye out for science writing internships and competitions!

3. Make time for offline connections

It’s one thing to share your passion for science online but sometimes the connections you make offline can have the greatest benefits. Consider hosting a science podcast with other PhD students or interviewing a prominent professor. Joining up with groups such as the STEM Ambassadors or contributing to Café Scientifique / PubHD / Pint of Science public science events are great ways to share your enthusiasm for science with fellow scientists and the public.

4. Share the good, the bad and especially the ugly

The key to good online science communication is honesty. If you see a great new article that interests you, share it! Similarly, if you’re having an absolute nightmare week then don’t be afraid to share your thoughts and worries. Undertaking a PhD can take all manner of mental tolls often left undisussed, but the online community openly recognises and talks about these issues.

5. Try not to preach ONLY to the converted

Sharing science between scientists is a great way to encourage communication, but getting it out to the rest of the world is another thing entirely. Producing videos, infographics and science news articles that are appealing to a wide audience of both scientists and laypersons helps to improve the understanding between those that work in science and members of the public that rely on researchers to be vocal about their findings. YouTube channels such as SciShow, It’s Okay To Be Smart and DrawCuriosity are fantastic at presenting interesting scientific ideas in a way that is engaging for people of all ages, professions and backgrounds!

If you’re interested in finding out more about the world of science communication, feel free to follow me on twitter (@alexevans91) where I often post about current ‘scicomm’ trends and opportunities.
Dr. Angela Hodge
University of York

Why did you decide to become an academic?
I don’t believe that I did actually ‘decide’ to become an academic – there was never a masterplan. I enjoyed learning the different scientific topics at University then, when I started doing research, I really enjoyed that – so it pretty much grew organically.

What is your ‘typical’ day?
I don’t really have a typical day. Usually I know what I want/need to do but by the end of the day seldom do I find I have actually achieved this. Life can be unpredictable – especially during term time.

What is it like to teach?
I enjoy teaching which never ceases to surprise me given it is not so very long ago that the mere prospect of teaching seemed terrifying. I had never really considered teaching until my then Head of Department, Alastair Fitter persuaded me to take a few lectures while on my BBSRC Fellowship. The fact he is a fantastic scientific communicator and taught on the same module just made it all the more terrifying. However, it also meant that I realised I needed to improve and quickly!

What is the hardest thing about your job?
The amount of admin and form filling for basically everything. We may be moving to the ‘paperless office’ but this has only resulted in an alarming proliferation of their electronic cousins. Yesterday I had to fill in three electronic forms – just so I could complete the one form I actually wanted to! Ok, perhaps not the hardest part of the job – but it is among the most annoying.

What is the most fun thing about your job?
Research and teaching – so 2 out of 3 isn’t bad.

What (if anything) do you miss most about being a PhD student or post doc?
I miss not being solely immersed in research - the setting up of experiments, watching the plants grow and develop and wondering if what is happening belowground bears any resemblance to my hypotheses. I even miss the really mundane tasks as that was when my mind drifted to the next questions (admittedly, sometimes the question I perhaps should have addressed in the first place!).

If you could tell your old self (doing a PhD/post doc) one piece of advice, what would it be?
Enjoy it while you can and stop worrying about the ‘next’ step. I also feel duty bound to point out that my old self would have completely ignored this advice!

Did you know you wanted to be a PI when you were doing your PhD?
It never even crossed my mind. I was too busy trying to get data for my PhD thesis.

What do you look for in a post doc/RA/RT?
Someone who is driven to find out answers to scientific questions and who gets excited by data.

What was your relationship with past supervisors like and how do you think that has affected your career?
Things were rather different back then. Studying for a PhD was very much viewed as a privilege and you certainly were left to your own devices much more. That’s just how it was, but with hindsight I think gave me the push I needed to realise I could actually conduct sensible research on my own. Overall, I have been very fortunate to have worked with some really fantastic mentors and great characters!

If you couldn’t be an academic, what would you have liked to be?
I guess there are many things I would have liked to be – but what else I could actually be is a different matter.

What was your relationship with past supervisors like and how do you think that has affected your career?
Dr. Paul Genever  
University of York

Why did you decide to become an academic?
My curiosity.

What is your ‘typical’ day?
You always have to keep an eye on what’s round the corner, usually deadlines, presentations, meetings etc. I will talk with people in the lab; discuss results and research plans. There will probably be some teaching, student-related work and admin tasks, possibly a grant to review, usually reports to read and always that paper I need to finish writing.

What is it like to teach?
Yes I do, particularly tutorials and practicals where there are more opportunities to interact with students. The nerves go, but you want it to go well, so preparation is the key.

What is the hardest thing about your job?
Keeping all the plates spinning.

What is the most fun thing about your job?
My role is varied with many rewarding aspects, but what really drew me in was the feeling, looking down the microscope, seeing the experiment had worked and that the rest of the world didn’t know yet.

Career insights: Academics

What (if anything) do you miss most about being a PhD student or Post Doc?
See above!

If you could tell your old self (doing a PhD/post doc) one piece of advice, what would it be?
Soak it up. You will never have a better opportunity to enjoy research. That and make sure you publish.

Did you know you wanted to be a PI when you were doing your PhD?
Yes in a way. Doing my PhD was a great eye-opener; once I got in the lab and had my first real “result”, I knew that it was what I wanted to do. I just wasn’t too sure how that was going to work out.

What qualities do you look for in a Post Doc/RA/RT?
Enthusiasm, drive, tenacity, technical ability, a sense of adventure and three Nature papers (if possible).

What was your relationship with past supervisors like and how do you think that has affected your career?
Mixed, often excellent and yes, always in a positive way.

If you couldn’t be an academic, what would you have liked to be?
Play in midfield for Leeds United.

Mandatory training dates

BIOSCIENCE INSIGHTS DAY
8th November 2016, University of York, Biology Department - Year 1

DATA ANALYSIS USING THE R STATISTICAL LANGUAGE + FESTIVE DRINKS
14th December 2016, Faculty of Biological Sciences, University of Leeds—Year 1

WHITE ROSE DTP ANNUAL RESEARCH SYMPOSIUM 2016
16th December 2016, Conference Auditorium and Exhibition Centre, University of Leeds—All

MOLECULES TO MARKET MODULE
23rd May 2017, University of Sheffield—Year 1
Thanks for reading the first issue of the White Rose DTP newsletter. We’re always looking for White Rose PhD student volunteers to join the team! The newsletter is entirely student run and will be published every quarter. This is an excellent opportunity for getting some Journalism Experience on your CV!

Want to get involved?

**WIN A £25 AMAZON VOUCHER!!!!!!**

DO YOU HAVE A GREAT PICTURE FROM THE LAB/CONFERENCE/FIELD TRIP? ENTER OUR COVER PHOTO COMPETITION BY SUBMITTING YOUR ENTRIES TO cm841@york.ac.uk

Have you just completed your PIPs? Would you like to share your experience with others who are looking for placements? If so, contact our PIPs editors to feature in our next issue.

**Wanted:** Sheffield Editor.

**Responsibilities:** Coordinate volunteers from each university, put out calls for contributions in respective universities, first point of call for new volunteers, responsible for finding key dates of events occurring in each institution, responsible for finding student achievements (academic - publications, conference attendance etc. and non-academic - sporting achievements etc.) in each institution. Sign off on final layout before publication.

**Wanted:** Casual contributors

Contributions are also accepted on a causal basis so if you’ve been to an interesting talk/conference/careers meeting etc. or have found an exciting piece of science news that you’d like to share feel free to submit your article to the appropriate editor. There is no limit on what you can submit.

**Ideas from the editor in chief:**

- An article about your PhD research, your lab, a brief update from your field or any cool breakthroughs.
- An article about a field of science that you want to get some attention.
- A piece on a particular scientist/ journalist/ David Attenborough Documentary.
- A summary of a conference that you have attended or spoken at.
- A comic that you created whilst pulling an all-night lab party for one.
- A poem lamenting a blank Western Blot.
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