



The University of
Nottingham

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Biosciences@Nottingham

School of Biosciences Newsletter 2016



**Invaluable skills and
great career prospects!**

Food Science students Sam and Sophia operating the extruder in the Food Processing Facility.

Meet our students

University life in the words of some of our current students

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Helping you to achieve your potential

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Welcome to the School of Biosciences

"I realise that applying to university is a daunting and perhaps confusing challenge, with so many choices available between different courses and places of study. So I am delighted that you are considering the School of Biosciences at The University of Nottingham.

In addition to being an international centre of excellence for biosciences, our school also has a unique and friendly ethos enabling us to provide you with first-class education in all the latest aspects of biosciences. This combination of scientific excellence and supportive learning environment is one reason why our past students, and their employers, consistently rate us as a top provider.

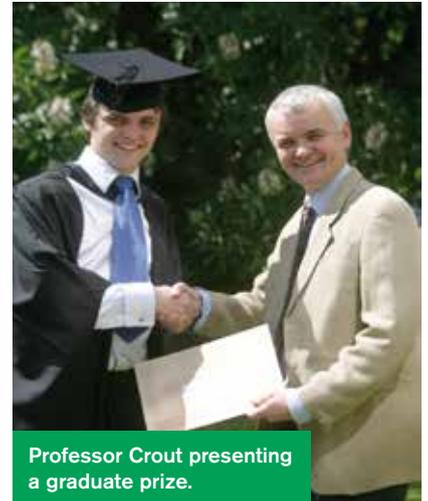
Our students are taught by world-class specialists, many of whom are expert advisers to national and international bodies. We are very proud of the high position we achieve in the various league tables which rank our work, not least the High Flyers Research which places Nottingham amongst the best performing universities for top graduate employers.

We have extensive links with companies and institutions working in the field of biosciences around the world, helping ensure our courses are relevant to industry and that our students acquire the professional skills they will need after graduation.

Our courses are based at the Sutton Bonington Campus – a self-contained site with excellent teaching and research facilities and halls of residence. The campus is also home to the University's School of Veterinary Medicine and Science and the University Farm and Dairy Centre. Altogether some 2,000 students, both undergraduate and postgraduate, are currently studying on campus from all over the world.

If you haven't already, we hope that you will visit us the school and see for yourself the opportunities we provide. We wish you well in any exams you may be taking over the coming months and hope to welcome you to our school in the autumn."

Professor Neil Crout
Head of the School of Biosciences



Professor Crout presenting a graduate prize.

New £4m super-lab

Construction is about to begin on a new £4m teaching laboratory development on Sutton Bonington Campus. This state-of-the-art facility will be open in autumn 2016.

Practical classes are a valued element of our student experience, providing training in key skills for learning and future employment. The new laboratory will house up to 200 students in an open-plan setting and will be fully supported with advanced audio visual facilities.



Artist's impression.

Hello from the Student Guild



Chair of the Guild, James Wilson.

The Sutton Bonington (SB) Guild is a branch of the Students' Union and represents all students based at SB in all spheres of life as a student.

Guild officers are elected once a year and aim to improve every aspect of University life for everyone based on campus and help ensure that your student experience at SB is equal to anywhere else in the country.

This year's Chair of the Guild, James Wilson, says: "On arrival at SB I was very nervous about getting to know people, settling into the course and choosing which societies I wanted to join. However after the first day I had fallen in love with the campus! The mix of people who choose to study here (all doing similar courses), the layout of the campus itself and the sense of "SB pride" makes for a real community spirit!

As a Guild we organise your Welcome Week during which there is a huge range of activities from nights out to barbeques, right through to bouncy castles and rodeo bulls!

Our new amenities building, opened in 2015 and aptly called "The Barn", holds an amazing range of student facilities including a new dining hall, the Guild Offices, a multi-faith area, and a spacious bar and performance area.

This campus offers students a unique opportunity to live in the picturesque East Midlands countryside whilst being able to take full advantage of Nottingham city centre and University Park Campus.

UP is easily accessible by the free hopper bus provided by the University meaning that you have access to more than 200 sports and societies on UP alongside the 50 that we now have on SB!

These are managed by students who have a passion for their society which really shows through in all of the amazing activities and events that are run through the year. The range spreads from our fantastic Symphony Orchestra, right through to the Agricultural Society and our award winning Farmers' Market Society.

We have a sports centre on campus with a sports hall, squash courts, dance studio and gym, offering fitness and dance classes, as well as great facilities for our sports clubs, including lacrosse, rugby and clay pigeon shooting.

Something which I really encourage is the set-up of new societies by students who have a passion for a particular area or activity. We now have a photography society, (who now do all the photography for our events), a swimming society and even a brewing society!

I am now in the final semester of my degree and can honestly say that SB has given me the best student experience I could have asked for. The course has been fantastic, I have made some friends for life and I will have very fond memories of my time here."

More information about the Students' Union and Sutton Bonington Guild can be found at: www.su.nottingham.ac.uk/sb



Students at a formal dinner on campus.

Music to our ears

Ralph Simpson, President of SB Music Society (BSc Animal Science third year), writes:

"When I first came to uni I had heard mention of an orchestra - I was keen to join after studying and playing music throughout my school years and did just that in Welcome Week. I found the Music Society members to be very friendly and welcoming and keen to share their passion for music.

At the first rehearsal I was amazed at how many people were there. This was a bioscience and vet campus! From then on I played violin in the orchestra and sang in the choir and two years later I am now President as well as conductor of the orchestra. It has been a big part of my life on campus and has allowed me to really connect with fellow students and make great friends.

The Sutton Bonington Symphony Orchestra (SBSO) and Sutton Bonington Singers are both un-auditioned, primarily made up of vet and

bioscience students but also with residents from the local area. We try our best to accommodate everyone who wants to join us (whether you can read music or not). Our wide repertoire ranges from popular classical pieces to songs in the charts so we have something for everyone.

Our concerts are popular - our Christmas concert had an audience of over 350 people! As well as concerts, SB Music Society puts on other events, such as the Open Mic Nights throughout the year.

We also have ensembles such as Big Band, Folk Band and String Quartet who provide music for events throughout the year, both on and off campus. We have socials too - trips to Nottingham for concerts and shows and this year to London to see the musical 'Matilda'.

I have thoroughly enjoyed being a part of Music Society here at SB and would highly recommend it to students considering studying on this campus."



Ralph conducting the Christmas concert.

Meet our students

Sarah Guest / BSc Microbiology (first year)



"I made the decision to study microbiology as it's a prestigious subject area which seems to be constantly changing and evolving, so nothing is ever boring. I'm really amazed by how much an organism that cannot be seen by the naked eye can have such a dramatic effect on life itself, ranging from health to food spoilage. It's great to know that in the future I may be able to further understand some of the issues the world is currently facing, and potentially make a contribution.

Sutton Bonington Campus stood out to me because of its uniqueness and distance from the city, which made

the transition to university life a lot easier, especially considering the campus has everything you need for everyday life.

The accommodation here is a winner as well, as the lecture rooms are less than a five minute walk away, so being late is never really a problem. The flats are well mixed, and you'll probably find that you'll be doing some of the same modules as your flatmates which is an extra bonus when it comes to revision!

Welcome Week may have been one of the busiest weeks of my life! There were so many activities put on to ensure meeting new friends wasn't daunting, and I soon realised that we were all in the same boat together. I can't wait for what the next few years of studying have to bring!"

Matthew Bourne / BSc Animal Science (first year)



"One of the reasons I chose to study on the Sutton Bonington campus was the location in an area of beautiful scenery and it's only a short walk from the local villages and the canal. However, it's also really easy to get into the city with free hopper buses that take you to University Park Campus.

One of my main concerns about university was making friends but living in halls makes socialising really easy and I had made loads of friends in no time. Living on campus also means I live less than five minutes' walk away from where my lectures take place which is really convenient. There is

also dinner provided five nights a week which means you don't have to worry about cooking in the evenings, and at weekends we often cook together as a flat. The campus has a small shop and café but for your weekly shops you can order online and they will deliver straight to your flat.

The course is really enjoyable and the way that it's structured means that everyone can reach the same level of understanding early on so that no one is left behind. Also, most of the lectures are recorded, which means that if you miss anything while you are in a lecture you can go back over it afterwards. The staff are also very friendly and happy to help; you will be appointed a personal tutor who you have regular meetings with and will support you throughout your time here."

Megan Roberts / BSc Nutrition (first year)



"The welcoming, friendly atmosphere and beautiful campus were what stood out for me when I visited and I couldn't be happier with my decision to study here. I have a keen interest in food and nutrition, particularly in how it affects our susceptibility to and ability to fight disease, so I chose Nottingham as the course offers modules that complement my interests.

My course so far has been really interesting, and what's great is that the lecturers are all really passionate about their subjects and this really comes across in presentations and practicals. They are all really

approachable and more than happy to help with any questions you may have.

Being secluded in the countryside isn't an issue at all: with the free bus regularly going to University Park and into the city at weekends so we have the best of both worlds! Also, we are located about 20 minutes away from Loughborough which I often visit for grocery shopping.

I've really dived in with sports and societies on SB and have loved every minute! I'm in the netball team which plays in the Loughborough League most weekends, have joined the choir and am also involved in the tennis, extreme ambuling and food societies. Social events and trips are frequently arranged – going to the Good Food Show with FoodSec was amazing."

Hannah King / MNutr Nutrition and Dietetics (first year)



"When deciding what I wanted to do after my A Levels, I knew that I wanted to work in a healthcare profession and I have always enjoyed biology and chemistry at school. I also have an interest in food and health, so this course and career as a dietitian matched my interests very well. Nottingham was my first choice given that the University has such a great reputation. I have really enjoyed my course so far and I am particularly looking forward to going on my first hospital placement this summer and starting to apply the knowledge that I have learnt throughout my first year to my future career.

I also chose Nottingham because I love the atmosphere of the campus; it's the perfect balance between living in peaceful countryside yet also being able to enjoy everything Nottingham city centre has to offer. I currently live in halls and will be staying on campus in my second year because it's very practical in terms of being able to walk to lectures in less than ten minutes and having such easy access to useful amenities including the sports centre and the library.

My favourite thing, without a doubt, about living and studying at Sutton Bonington is that there is such a strong sense of community here making it really nice and friendly environment to live and study in!"

Charlotte Price / BSc Agricultural and Livestock Science (first year)



"I chose Nottingham University due to the friendly atmosphere at Sutton Bonington Campus on my open day visit, as well as liking its location in the countryside. The course I have chosen focuses on commercial livestock production and management and seems to fit me perfectly.

I was worried on my arrival that I didn't know anyone, but everyone was very chatty and wanted to get to know one another, so making friends was relatively easy. Especially with lots of events available on the first week, such as nights out, introductory lectures and freshers fairs.

Living on campus keeps you close to your friends and makes travelling to lectures, as well as nights out in The Barn easy. I like the accommodation here – I'm in a flat with four other first years, sharing a kitchen and living room area. CLV staff (CLV is the company who provide the accommodation on campus) are approachable and helpful.

There are many clubs and societies available at Sutton Bonington and at University Park Campus. I have joined a number of different societies ranging from Badminton to Agrics. With Agrics I've been to events such as pie-making and farm walks, as well as a ceilidh."

Samuel Chak / BSc Biotechnology (first year)



"Hello! I chose to study biotechnology because it has been an interest of mine since my early days in high school. I'm interested in how science and technology can help improve many areas that are lacking in our society, and the university has great resources for us to explore and develop our interests.

I have particularly enjoyed the practical lab sessions that are conducted for each subject as it gives great interaction and insights into research. I'm looking forward to many more lab practicals in the future as my course allows me to go more in depth into the subject.

I enjoy the life at Sutton Bonington as it is a very close-knit community where you get to meet your friends almost every day during lectures or even just walking around campus to and from classes. This has allowed me to settle in very quickly into student life, and it was fun to go through this experience with the many great friends you make in the first week.

I particularly enjoy the sports scene in the university, and Sutton Bonington's Sports Centre offers a broad range of facilities for me to be actively involved. I enjoy playing basketball with friends, and it's so convenient as it is only a five-minute walk from our accommodation."

James Pickering / BSc Plant Science (first year)



"I chose to study at Nottingham because it presented me with such an astounding range of opportunities to extend my experience far beyond the confining walls of the lecture theatre.

On my course, I have the chance to travel and study in Malaysia, immersing myself in the rich culture of Malaysia and at the University's Malaysia Campus, tapping into the unique knowledge base of cutting edge crop research. As an aspiring plant scientist, the idea of studying amongst world renowned scientists, whilst living surrounded by tropical rainforest, has long been my dream. I now have the chance to make it reality - in fact I'm writing my application as we speak!

What makes this so fantastic is that just a few months ago I was still just a dreamer... one of those people who has all these wonderful aspirations for life but no real means of making them happen. Since arriving at Nottingham I have had access to so many opportunities, it has helped me to realise that sometimes you just have to go for it and make things happen for yourself.

Despite this new found wanderlust, Sutton Bonington has become the ultimate home from home. It provides a great environment to meet new people because of the smaller size of the campus, which allow you to settle in quickly and easily make lasting friends. This generates a real sense of belonging and there is definitely a very strong community spirit, which is especially apparent at the monthly farmers' markets and bar nights!"

Emma Barber / BSc Food Science (first year)



"I decided to study Food Science because I am interested in the different properties of food, and the development of flavours within food products. I chose Nottingham because I liked the country and community feel of Sutton Bonington, and all the societies available both here and at University Park Campus mean there is something available for everyone.

So far my favourite part of the course has been the food science practicals in the food labs. I am really looking forward to our food tour at the end of the year where we all visit a food company over two days.

Week one was a fantastic experience. Over the first weekend the SB Guild organised a barbeque and pizza evenings, encouraging everyone to socialise, which really aided with making friends. This is also a chance to find out more about societies. I joined a variety including the FoodSoc, Lacrosse and Players on SB, as well as the New Theatre and Dance on UP. These are another fantastic way to meet people and make new friends. The free hopper bus to UP makes all societies accessible to join and attend.

My best experience so far was the Good Food Show where we went to Birmingham NEC for the day to look round all the stalls and see the new foods coming onto the market."

See more student profiles at: www.nottingham.ac.uk/go/biosciences-profiles

Watch our Sutton Bonington Campus video at www.nottingham.ac.uk/about/campuses

Supporting your studies

Student Experience and Support Officer

The University of Nottingham recognises the central importance of supporting our students' welfare in order to maximise their academic potential. The School of Biosciences has a Student Experience and Support Officer whose role complements and supports our Personal Tutor system and the other established student support structures of the University. In essence, the role bridges the gap between central support services and the school, so that our diverse student population can gain the most from their time at the University.

Liza Aspell (Student Experience and Support Officer for the School of Biosciences) is available to meet students at our open days for advice and says: "I have a great job, I love meeting such a diverse range of students and helping them achieve their potential. I think it's good to meet students face to face, for them to know who I am and where I am so that whenever they need some advice or help during their studies, they already know who to talk to."

Liza provides signposting to University support services (like Counselling), a central contact point for disability issues and extenuating circumstances and a confidential listening ear for student worries.

For example, Liza is developing "Study Buddies" as a scheme where small groups of students meet together informally to help each other with gaps in academic knowledge and understanding. This development complements and extends the school's successful ongoing Peer Mentoring scheme for which she acts as a central contact and administrator. First year students can sign up for the scheme and are then matched up with our experienced second and third year students to support them in settling into their studies and life at Nottingham.



Liza (right) with a student.

Opportunities for placements

Home or away? It's your choice

Rachel Jessop has recently joined the School Placement Team which manages undergraduate placements in industry for students in the School of Biosciences.

"So many companies are looking for graduates with previous work experience, and having a year in industry will really make you stand out when you start applying for graduate jobs.

The year (taken between years two and three of your degree) is an opportunity for you to find out what you enjoy doing, what you're good at and the kind of environment you like working in. Students find the experience transformative as they have the opportunity to use science and innovation to solve problems which are current and relevant. You are treated by your host company just the same as any other employee, being given real responsibility and the opportunity to work independently in a professional setting. You will quickly gain experience of how to communicate with people from a range of backgrounds, work to tight deadlines, manage multiple projects and deal with conflicting deadlines.

A year in industry abroad is definitely on offer. As well as all of the benefits of undertaking a placement in the UK, students who choose to do an international placement will gain additional skills which are highly valued by employers, including cross-cultural communication, cultural awareness, the option of learning the basics of another language or improving your current language skills, and a high level of independence.

In recent years, our students have completed international work placements at the Commonwealth Scientific and Industrial Research Organisation (CSIRO) in Australia, spent time at the Nestlé Research and Development Centre in Switzerland and travelled internationally as part of their placement. It's up to you how far you want to go – in every sense."



Rachel Jessop, School Placement Team.

Professional skills for your future

Associate Professor Emma Weston leads our Employability Champions

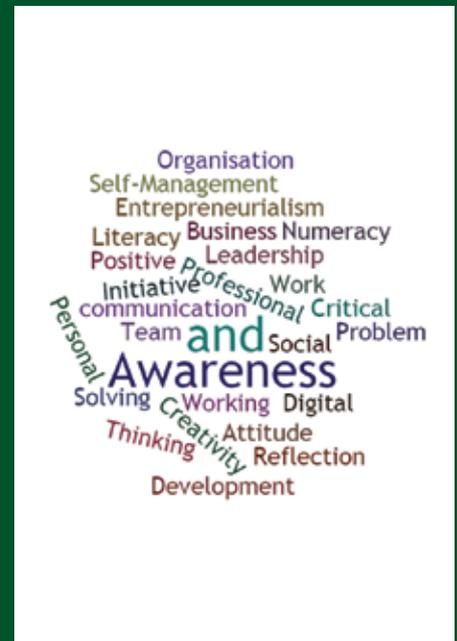
“During your time of study at the School of Biosciences you will become a professional bioscientist – typically you will specialise in a particular subject; but the defining principles and core graduate skills and competencies that you will achieve apply to all our students. As you progress through your studies you will cultivate plans for your future career. However to secure the place you want in the workplace or in further study you may need to compete with many other excellent graduates. This requires you have more than just a high quality degree... you also need to demonstrate the skills and behaviours that make you ideal for the post.

In the School of Biosciences we have a team of staff ‘employability champions’, some of whom have worked in industry as graduate recruiters, so have a hands-on idea of what employers are looking for.

We have built a structure of 12 core competencies that we share with you as an undergraduate within your course. These have been developed carefully, reviewing what employers and recruiters are looking for in an excellent graduate.

You will be encouraged to develop these competencies during your studies and any other activities you engage with whilst at Nottingham. We have also developed new modules for you that really focus on strengthening professional skills development in a scientific context, and we involve external speakers to help inspire and inform you too.

Once you have started to acquire a good set of competencies and know what you excel in, you will be able to map your skills against those sought by employers. We hope this will give you not only the means but also the confidence to be successful when you apply for placement periods, temporary work and graduate roles. Our aim is to help you gain more than just an excellent degree; we want you to become an excellent and desirable bioscientist too.”



Some ideal graduate competencies.

Making connections

Whilst at Nottingham, there are opportunities for students to attend conferences – not only to keep abreast of latest developments but also to help them network in their chosen industry.

Several students in the School of Biosciences attended the 2015 ‘Generation Farm’ conference. Specifically for the farming industry, the focus was on the essential steps UK farmers’ need to take to sustain the next generation of farmers and food producers. Climate change, rising energy and input prices, changing consumer habits...the economic, political and environmental climates are converging and this can mean huge opportunities for farmers.

Promoted by Farm Business in association with NSF Agriculture, the aim of the annual conference is to ‘create a thinking farmers’ forum of technology and new ideas that can disseminate down through the farming industry across the broadest influencers in the food chain, arable, cereals, livestock producers, processors, farm trade, and agronomists as well as political lobbyists and marketing specialists.’

“The conference was very thought provoking and educational, with talks from a range of expert speakers. It was also a great opportunity to network with attendees such as farmers and agri business representatives.”

David Boulton (BSc Agriculture, second year)



Students at the conference.

Industry placements offer real employment experience (and pay!)



Fourth-year BSc Nutrition and Food Science student Sam Higginson completed his placement at M&S and Greencore on their Business Placement Programme.

"The M&S scheme enabled me to split my year, spending the first half based at Marks and Spencer Head Office in London, and the second at Greencore Northampton, the sole sandwich supplier to M&S. It was the combination of retail and manufacturing experience that really drew me to the M&S scheme above all others.

My job role was 'Technologist', and whilst a fully qualified technologist is directly responsible for the safety, legality and quality of products on shelf, the majority of my time was spent working on a project for the company that involved applying knowledge from my university course and working closely with suppliers to ensure the project was delivered effectively. My project focused around shelf life maximisation, delivering optimum quality until the use by date, and this required further research on my part. As technologist within the project, I was the team member responsible for understanding the changes to the product over shelf life and solutions to any problems.

I also spent a lot of time working within desserts, assisting in day-to-day running of the department by helping to run weekly taste panels - where products are meticulously picked apart to check they are meeting the highest standards expected by M&S customers - as well as attending meetings before product launches and benchmarking of products against our competitors (and making sure M&S are at the very top).

My second six months at Greencore gave me a real insight into the world of manufacturing and broadened my understanding of food production in the capacity of supplier. Here I spent time in three key departments: Incoming Quality Assurance, Technical Services and Production. This allowed to me appreciate both sides of the food industry.

My placement has enabled me to build my confidence in a fast paced professional environment. The whole year has given me a range of experiences and I've undertaken training in Health and Safety, Food Safety, Safe Meat Cooking, Water Management within a factory and Baking Powder Technology."

Sam has now been successful in his application to the M&S graduate programme starting as a trainee in September 2016.



Fourth-year BSc Food Science student Onalenna Onthatile spent her year at 2 Sisters Food Group in the UK Poultry Division at Sandycroft, north Wales.

2 Sisters is a diversified food company, manufacturing private label goods for retailers and food service markets and owning brands such as Fox's biscuits and Goodfella's pizza.

"I worked with the technical department as a Graduate Technical Trainee. I was very happy that my supervisor gave me the freedom to work on as many projects as I wanted and also explore with different departments.

During my time with the Quality Assurance inspectors I had hands-on experience and was able to learn a lot on the technical aspect of chicken production, for example how gas concentrations in retail packs affect shelf life. I was also able to apply my knowledge of food safety and microbiology from University when doing rapid swab tests for microbial analysis.

As part of factory operations I decided that working with the engineers for a few weeks would be beneficial for an all-round experience of the factory. I focused on refrigeration and water management; I was shown all the control measures in place for temperature monitoring inside the factory and how the alarm system works if there is variation. There were currently new eco-friendly refrigeration systems on trial; I saw how the old system compared to the new one in terms of efficiency and carbon emissions. Having some insight on thermal conductivity and heat exchange from my University course was really helpful as I was able to keep up with the engineers and even ask more questions.

For each retail product there are Quality Attributes Specifications that the production teams need to follow throughout production, including all the packaging specifics. It is very important to produce products that meet specification because failure to do so may result in product rejections costing the company a lot of money. In March we started preparing for the summer BBQ products, and I was responsible for creating Quality Attribute Specifications for one of our customer's 12 new products. This was a challenging project because I had to ensure that the specifications are accurate and reflect customer requirements.

Taking a year in industry has definitely built my confidence and exposed me to different areas in the industry. After graduation I would like to work for a multi-national company in a technical role because I believe there are more opportunities to learn and develop your career.

For all students thinking of taking a year out, I would advise that once you start your placement try as many different things as possible so that you can have an all-round experience and explore areas that you might like to pursue after you graduate."

Many students take an optional year-long industry placement between years two and three to help develop their skills and enhance their employment prospects. Recent placements have included BASF, Campden BRI, Chester Zoo, Gatwick Airport, GlaxoSmithKline, Kellogg's, Mars, Mondelez, Pepsico, Philips Healthcare, Sainsbury's, Tesco and Unilever.



Fourth-year BSc Biotechnology student Toby Hodge spent a year at plant breeding company KWS UK, based in Thriplow, Cambridgeshire.

"The KWS group is one of the world's top seed producers and is responsible for developing a large number of the favourite varieties that farmers grow in our fields here in the UK.

I held a role as a breeding technician, working mainly within the winter wheat programme.

During the early months of 2015, the winter wheat crossing programme was underway. This was a lot of labour-intensive glasshouse pollination work, providing all the varieties that go into the fields. Biotechnology plays an important role in the plant breeding industry, influencing a lot of decisions made. For example, the majority of successful varieties are gene mapped, and any varieties that are too close genetically will not be bred together. It became apparent that I would need to use some of the knowledge from my first two years of study while at KWS. In particular, my understanding of plant science was useful, as was the general mechanisms of plant genetics.

The lab based skills that I was taught at University, such as maintaining a sterile working area and using flow cabinets were really advantageous. It meant that I could start doing lab work almost immediately without having to be trained in the use of lab equipment.

I was given numerous opportunities to experience other areas of the company, such as the commercial side, working with groups of farmers, merchants and agronomists. This was an area that increasingly grew to interest me during my time there. I would like to capitalise on the opportunities available to me in my final year to learn more about these aspects and I am taking modules looking at entrepreneurship in technology as well as business management modules.

I would definitely recommend a placement year as I've had a lot of positive feedback from potential graduate employers and graduate schemes. It seems a really beneficial addition to any degree."



Fourth-year BSc Food Science student Lucy Gray undertook her placement at Premier Foods.

Premier Foods brands include Mr Kipling, OXO, Bisto, Ambrosia, Batchelors and Sharwood's. Lucy's role was as a New Product Development Student Technologist within the sweet treats sector of the company, based in Barnsley.

"I first started my placement working on Mr Kipling products, assisting on different projects, gaining experience in how to make bench samples and being introduced to the trial and launch process, taking part in shelf-life testing and leading structured team investigations to determine whether small differences in ingredients are noticeable in a final product.

My first solo project involved the shelf-life extension of the seasonal fondant fancies range, collecting sample off plant, setting up life test record sheets and sending samples for microbiological testing, along with tasting the product at various stages. I also assisted on the newly launched milkshake slices making up bench samples and carrying out recipe tweaks.

At the start of my year I was given my own project to investigate the properties of various inclusions when baked. Eventually by baking sweets within sponge I developed different 'sweetshop' versions of cupcakes including a lemon sherbet, fruit salad and rhubarb and custard. I then had the chance to present to the sweet treats Managing Director!

Throughout my placement I was able to relate the work that I had been doing at University; almost from day one I was exposed to and carried out tests of products and ingredients, determining their water activity and relative sugars, all of which I learnt the theories of while at University.

Before my placement year I was unsure what career path I would like to follow in the future. I feel more confident going into my final year knowing the types of opportunities and job roles that await me once I graduate."



The IFST (Institute of Food Science and Technology) is the professional body for food scientists. Several students from the School of Biosciences have been chosen to blog about their placements.

Yasmin Andrews (BSc Food Science) is on placement at international brewing company Molson Coors in the research and development team, working on Global Consumer and Sensory Insights and applying sensory science to business. You can read Yasmin's blog here:

www.ifst.org/work-experience-blogs

Studying abroad

Our students have many different opportunities to study abroad. You can combine your studies with the Certificate in European Studies to give you an extra year at one of our partner institutions in Europe, or you can apply to apply abroad for one semester via the popular University-wide exchange programme. Our biotechnology, environmental biology, environmental science, plant science and nutrition students may have the opportunity to apply for a semester or year at the University's Malaysia Campus. Our new international degrees in agricultural or environmental science include a year in Sydney, Australia.

Annabel Hunt (BSc International Agricultural Science, second year) is spending a year at the University of Sydney.

"Having a really great time out here! The course is great, really enjoying the agronomy module I am doing and have been on a field trip with my sustaining landscapes module which was such a great experience. We slept in a wool shed at the base of the Snowy Mountains – I have never been so cold, even in a woolly hat, two sleeping bags and a doona (what they call a duvet out here- we get our accents made fun of a lot!) – and we were still cold!

The Agriculture and Environment Faculty here is so much fun, and all the agriculture students are really lovely, they have been looking after me well! Am trying to convince them all to come on exchange to Nottingham! Sydney is such a wonderful place to live, I am so grateful for the opportunity of this exchange.

We have just had our mid-semester break - went to a beach house up the coast with some friends, but now it's time to crack on with work, only six weeks till exams. Then a three month long summer which I am unsure what to do with yet, thinking of finding a job with 'grain growers' possibly or a 'Jillaroo' job and then do some travelling!"



Travel award



Alisa Morris (MNutr Nutrition and Dietetics, third year) was awarded a School of Biosciences JD Ivins Memorial Travel Scholarship.

Alisa decided to take part in a volunteer project in Morocco with Uber Volunteers (an organisation run by students for students).

"Over the summer, I was fortunate enough to be given the chance to visit Marrakech in Morocco, thanks to the award. The experience for me was absolutely life changing.



Alisa (back row, second from left) with project volunteers and children.

Over the two weeks, I took part in a variety of activities including assisting nurses in an orphanage with the care of new borns and toddlers, drawing and painting walls and classrooms at schools and day care centres, and teaching English to women at a refuge centre who escaped domestic abuse. I also got the chance to play games and help run arts and crafts sessions with kids at day care centres, schools and community centres, and at the children's hospital.

Through all these activities, I managed to develop and enhance some of my skills such as confidence and communication, which are not only key in my future career as a dietitian, but are vital skills within life. In Morocco, I started to understand how climate and lifestyle can affect the diet of an individual, and how to apply this to a multicultural setting such as the UK, which I may use to help me to understand the diets of patients who are from mixed cultures.

But alongside all these educational experiences, I got to experience Moroccan culture and make some amazing memories and friendships that will last a lifetime!"

Cricket crisp, anyone?

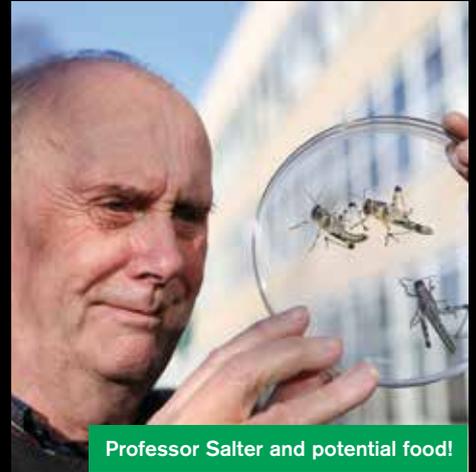
While a bowl of fried locusts may not appeal to you, how about biscuits and crisps produced from 'cricket flour', which is now readily available and represents a highly nutritious alternative to conventional ingredients?

For many people in the UK the idea of eating insects remains the in the realms of the popular reality show 'I'm a Celebrity Get Me Out Of Here'. However, worldwide, insects represent an integral part of the diet of over two billion people, with over 1,000 species known to be eaten. Not only can they provide much needed energy, they offer a source of high quality protein, a broad range of essential vitamins and minerals, and they have a much lower carbon footprint than conventional livestock species.

It's the ability of insects to thrive on waste-streams, not suitable for human (or animal) consumption, that makes them an attractive future source of nutrition.

There is much potential for their use as high quality nutritional supplements for livestock, and particularly in fish food for the rapidly expanding aquaculture industry.

A team of scientists in The School of Biosciences, led by Professor Andy Salter (Nutritional Sciences) has been awarded a partnership grant from Innovate UK to work with Monkfield Nutrition, one of the UK's biggest insect breeders. Currently, Monkfield produces over 4 million insects per week (such as locusts) as food for the exotic pet market. The company is keen to explore potential new markets, including insects for human consumption and livestock feed. The school's team (including specialists in entomology, nutritional biochemistry and animal genetics) will work with Monkfield to improve the efficiency of insect production and to investigate how the nutritional quality may be manipulated to suit specific markets. They will also investigate the potential of specific waste streams as insect feed. Professor Salter commented:



Professor Salter and potential food!

"There is great potential to apply our existing knowledge of the nutritional needs of conventional livestock to insects in a systematic way that has not been done before."

From cow to milkshake

Alice Partridge (BSc Animal Science) is spending a year in industry with McDonald's.

McDonald's Progressive Young Farmer placement is a 12 month training programme which offers young people a unique opportunity to experience the McDonald's farming and food supply chain, from farm to restaurant.

Alice was selected to join the year-long programme and is following the dairy supply chain spending time on a dairy farm, focusing on the practical farm business management skills and also with Arla Foods seeing 'behind the scenes' of the food chain as well as experiencing the beef, poultry and potato industries.

"Having grown up on a beef, sheep and arable farm in Suffolk, I have spent my whole life outdoors. Whilst I am hands on at home, I really wanted to experience what happens after the farm gate, so when the chance arose to spend 12 months immersed in the McDonald's supply chain, I knew it was an opportunity too good to miss.

Earlier this year I spent three and a half months on an Arla dairy farm in Staffordshire milking 450 pedigree Holsteins. With a background in beef farming and having only spent two weeks milking prior to starting the placement, I've had a lot to learn! One of my main responsibilities whilst on farm was to help rear the calves. The herd calves all year round, so there was always something for me to do.



As well as working on the farm, I have also had the opportunity to attend workshops and conferences including the Oxford Farming Conference which was a fantastic few days. There were some excellent speakers at the conference with topics ranging from the 'brexit' debate to new technology in agriculture.

I have just finished an eight week secondment to Arla Foods based both in their head office and at Stourton Dairy. Arla makes McDonald's milkshakes and sundaes and also supplies McDonald's with organic semi-skimmed milk for tea, coffee, porridge and Happy Meal milk bottles. My time with Arla was really interesting and it's been great to see the process of McDonald's shake and sundae production as well as experiencing the planning, marketing and new product development which must happen to run a successful dairy business.

In addition to time within the dairy industry, I have spent two weeks following the beef supply chain spending time visiting farms with Blade Farming, working with ABP at their Langport abattoir and visiting OSI Food Solutions where the beef and sausage patties are made.

Later this year, I am looking forward to spending time on an organic dairy farm before returning to the farm in Staffordshire to gain more hands on dairy experience."

Look out for Alice's blogs about her year on the Farmers Guardian website www.fginsight.com

Graduate profiles

Mike is Assistant Farm Manager with Farmcare.

"After a number of different summer jobs in the industry as a student, I was offered a place on Farmcare's management training scheme whilst in my final year at Nottingham. Farmcare is one of the country's largest farming businesses encompassing arable, potato and fruit farms and pack-houses between Dundee and Dover.

I decided to defer this for a year to work on an arable farm in New Zealand and so started with Farmcare in 2013 and spent the next 18 months on placements within the business. My final placement was at the 1,800ha Goole Estate in East Yorkshire, where I was later made Assistant Farm Manager and it's where I still work.

My role is extremely varied and includes crop walking, relief machinery operating, record keeping, budgeting, environmental compliance and the use of precision farming platforms.

I'm BASIS qualified and part of my role is to ensure that we are using pesticides and other inputs responsibly, legally and effectively. No two days are ever the same and I enjoy the practical side of my job as much as the technical.

Towards the end of 2015, I accepted a three month contract working as a machinery operator for the British Antarctic Survey at their Halley Scientific Research station on the Brunt Ice Shelf. My main role involves driving massive trains of sledges 50km across the floating ice using PistenBully crawlers to supply the station.

I'm grateful to Farmcare who have given me the extended leave for this experience of a lifetime, and I will be returning to my more traditional position in February in time for the spring drilling and potato planting season."



Name: Mike Neaverson
Course: BSc Crop Science
Graduated: 2012



Name: Jean Marc Roberti
Course: BSc Biotechnology with a Certificate in European Studies
Graduated: 2015

Jean Marc is now studying for the MSc Applied Biopharmaceutical Biotechnology and Entrepreneurship.

"I thoroughly enjoyed my time studying biotechnology. My course was appealing as it offered the freedom to choose between animal, plant and microbial modules and I found that it struck the right balance between theoretical and practical teaching. As part of my degree I spent a year abroad studying at the École Supérieure d'Agriculture d'Angers in France to achieve a Certificate in European Studies. This was definitely one of the highlights of my university experience; it allowed me to become fluent in another language and sample a different culture. I even undertook a placement where I lived with a French family and worked on a vineyard for two months. It not only broadened my outlook but gave me attributes valued by employers and which set you apart from other candidates.

I had always had a keen interest in business and just before graduating was looking for a means of applying my scientific knowledge in a business

environment. The MSc Applied Biopharmaceutical Biotechnology and Entrepreneurship offered by the School of Biosciences (in conjunction with The University of Nottingham Business School) provided the answer. It has allowed me to build upon my scientific background and gain a commercial perspective required to take novel biotech research to market. Not many universities offer such a unique postgraduate course and it seemed a great option as the Business School is currently one of the highest ranked and most active in the UK. The course combines teaching from highly esteemed academics in both schools in a hands-on learning experience. The diversity in teaching has been excellent - in the morning I could be learning about creativity in entrepreneurship and the afternoon about molecular hydrodynamics!

The next part of the course involves a three month placement allowing a unique insight into industry life. As with my undergraduate experience, the course so far has been challenging yet fulfilling and I believe it has laid the foundation for a bright career in the biotech-business sector."

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