Bradford ChemBio

What's been going on in our school for the past three months…
December 2019 – February 2020

Welcome!

Welcome from your Newsletter Editors…

We have had a bumper quarter for new starters! It is a pleasure to introduce our new lecturers, post-docs, KTP associates and postgraduate students to you all – if you see them in the corridor or in the coffee queue, please do say hello and show them how friendly Bradford is ☺

We have Clare Peyton continuing our remarkable 100% success rate for Academy of Medical Sciences Sprringboard funding, as well as a number of other funding successes and publications which highlight how out school is going from strength to strength.

It has also been a busy time for teaching – in addition to the January exams and marking, the final year Biomed students were let loose in the labs! Safe to say it was a pleasure (for most) students and staff, and you can read about their appreciation for the superb technical support they received in the 'Teaching' section.

We look forward to your continued support in making the School a happy, rewarding place to be!

Dr Kirsten Riches-Suman and **Dr Andrew Tedder**

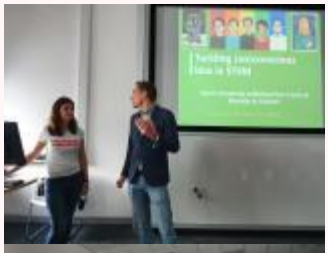
Athena SWAN

On 12th of February 2020 the EDOC hosted an Athena SWAN seminar for **International Day for Women and Girls in Science**. **Dr Flavie Vial** visited us from the Animal and Plant Health Agency in York and gave a fantastic talk about 'Tackling (un)conscious bias in STEM'. Flavie explained why our society suffers from a lack of diversity in science and concluded with some tips that we all can use to create an inclusive science landscape, particular for women. The talk was very well received from the many attendees. Following the seminar, we held a workshop discussing how we can build a diverse and inclusive research landscape to benefit our society. It was great to see many of our PhD students and postdocs from across the Faculty joining us for the workshop and we had a long and engaging dialogue around strategies to overcome barriers for Girls and Women in Science.

To mark International Women's Day, the next Athena SWAN sponsored seminar will take place on the 4th of March 2020 and we will welcome Prof Janet Lord from the University of Birmingham as our speaker. Hope to see many of you there! If you lunch after the seminar, please get in touch.

International Women's Day Speed Networking
The University of Bradford will run a speed networking event on International Women's Day 2020. The event will take place on Monday 9th of March (12 noon to 2pm) in the Richmond atrium and will offer a unique and fun opportunity for students and staff to network with senior female role models. If you want to take part, please register here for free https://www.eventbrite.co.uk/e/international-womans-day-speed-networking-tickets-90779739645 and wear purple, green or white in support of women's equality.

***Dr Gisela Helfer**, Chair of Equality, Diversity and Opportunities Committee*



New Lecturers

My name is **Dr Karthic Swaminathan** and I am a new lecturer in Centre for Skin Sciences. I was born in a small town called Chidambaram which lies in the southern part of India. My town is called by many writers as "Dancing capital of the world". And in fact the statue of the "Dancing Lord" can be seen at the entrance of CERN, Switzerland. I did my undergraduate studies in Biochemistry in Madras University and went on to do a dual Masters degree in Bio-Technology and Bio-Informatics in Bharathidasan University, India. During my Masters, I worked on DNA methylation of cervical cancer using molecular techniques and studied structural variation of virulent malarial proteins using Bioinformatics. After completion of my MSc, I went to Cologne, Germany to pursue my PhD under the supervision of Professor Angelika Noegel. My PhD focused on understanding the role of the actin cytoskeletal proteins in cell migration using amoebae as a model system. During my PhD, I employed various cell biological and biochemical techniques to understand the role of coronin protein in cell migration and published in high impact journals. After completing my PhD, I joined Professor Laura Machesky's group at Cancer Research UK (Beatson Institute) in Glasgow as a CRUK postdoctoral fellow to study the role of the actin cytoskeletal proteins in melanoblast migration and melanoma progression in vivo using genetically modified mouse model system. During my postdoctoral tenure, I started extensively collaborating with groups within and outside CRUK Beatson. I established several mouse models and in vivo techniques to study cell migration and cancer progression at Beatson. One of the in vivo methodology that I developed combines the power of in vivo manipulation and intravital imaging to study cancer metastasis. In collaboration with Professor Sara Zanivan's group, we employed the method to study the role of matrix stiffness and endothelial cell adhesion molecule in cancer cell intravasation and metastasis which we published in EMBO J. I also worked with Professor Peter Adams's group, now at Sanford Burnham Prebys, USA to help establish 10x Single Cell Genomics method at Beatson. My experience in single cell genomics lead me to win ISSF polyomics individual award at Beatson. During my tenure as a postdoctoral researcher, I developed a range of skills from bioinformatics (programming) to developing in vivo cancer relevant mouse models with the help of state-of-the-art facilities at Beatson and established valuable collaboration around the globe.

I joined the Centre for Skin Sciences as a Lecturer in 2019 to work on the cellular and molecular aspects of cancer biology. In particular, I'm interested to understand how oncogenic mutations evolve and decipher the role of anatomical site and their surrounding niche in tumour development using a combination of cell biology, in vivo models, and genomics. I also wish to establish human relevant in vivo mouse models for different cancers and single cell genomics pipeline at the CSS, UoB. On the teaching aspect, I teach Immunology to second year Biomed and will continue to deliver research informed and skill based program which will allow them to thrive in the current job market. Away from research, I enjoy reading, watching movies (sci-fi), and playing cricket.

Dr Briony Yorke is the newly appointed lecturer in structural biology. She specialises in developing new methods for X-Ray crystallography and spectroscopy. Her interests include time-resolved methods, structural dynamics, structural enzymology and radiation damage to biomolecules. After completing an MChem at the University of Leeds in 2005 she moved from the School of Chemistry to the Astbury Centre for structural molecular biology, also at the University of Leeds. Here she underwent the Wellcome trust funded 4 year PhD programme and completed her thesis project in 2014. Shortly before completing her PhD, Briony moved to the department of experimental physics at the University of Hamburg (in the centre for ultrafast imaging) where she worked as a post-doctoral research assistant before obtaining a Sir Henry Wellcome post-doctoral fellowship, held between the University of Bath, University of Oxford and University of Hamburg. In 2018 Briony returned to the School of Chemistry at the University of Leeds to complete her fellowship.

New Lecturers

My name is **Dr Debbie Crawford** and I am a new Lecturer in Bio-Organic Chemistry. I am originally from Belfast, Northern Ireland, which is famous for the Titanic and George Best. I carried out my undergraduate and postgraduate degrees in Queen's University Belfast (QUB), graduating from my PhD in 2015. I then worked for a spin-out company, MOF Technologies before carrying out a postdoc in QUB, focused on the use of twin screw extrusion for carrying out chemical synthesis, under solvent-free conditions. I also worked on developing Type 2 Porous Liquids, a novel material that exhibits the same properties as porous solids, but has the extra advantage of fluidity.

As part of my role in the School of Chemistry and Biosciences I am teaching both Inorganic and Organic Chemistry, which I am thoroughly enjoying. With regards to the research aspect of my position, I have several ongoing projects, involving sonochemistry in the solid-state and determining the bioactivity of pharmaceuticals prepared under solvent-free conditions.

Aside from my work, I enjoy travelling and have been privileged to travel to places such as Siberia and Hawaii. I enjoy drawing, though I am not particularly good! I also enjoy cooking and relaxing with friends, especially my furry friends ☺.

Hi, my name is **Dr Yvonne Nyathi**. I joined the University of Bradford in February 2020 as a Lecturer in Biochemistry. I have a BSc in applied Biology and Biochemistry an MSc in infection and Immunity from the University of Leeds. Teaching Biochemistry is my passion and I am interested in developing innovative teaching methods to enhance student learning experience and engagement. With my infection and immunity background I also enjoy a dash of microbiology, immunology and molecular biology in my teaching.

The field of protein quality control (proteostasis) broadly covers my previous and present research interests. I did my PhD at the University of Leeds focussing on elucidating the mechanisms regulating the targeting, localisation and function of an ABCD1 transporter protein pivotal in peroxisomal fatty acid beta-oxidation. After finishing my PhD in 2010, I worked as a R&D scientist at Aptuscan Ltd (a spin-out company of the University of Leeds which is now part of the Avacta Group) for 6 months. My role was to develop proprietary combinatorial libraries and reagents for the platform Affimer technology (antibody mimetics with tuneable affinity and avidity) that underpins one of the key technologies in the company to date. The transition from an academic research environment to a commercial setting at a very early stage in her research career sparked her interest in translational research, which I am currently very keen to pursue. Following the acquisition of Aptuscan by The Avacta Group, I joined Dr Martin Pool's lab at the University of Manchester, studying mechanisms that regulate protein quality control at the ribosome. I showed that quality control factors at the ribosome compete for binding and all events are tightly regulated to reduce the chances of mistakes during protein synthesis. This work led to a publication in the Journal of Cell Biology and attracted a commentary in Nature reviews. In 2014, I then joined Prof Stephen High' lab at the University of Manchester, working collaboratively with the chemical biology/structural biology group of Dr Rivka Isaacson (Kings College) focusing on the role of chaperones in mislocalised protein quality control. In 2017, I got a lecturing position at the University of Lincoln where I taught Biochemistry and also pursued my research in protein quality control focusing on the role of the co-chaperone SGTA in protein misfolding/aggregation in the context of age-related neurodegenerative diseases such as Alzheimer's and Parkinson's diseases. I am currently extending my quality control research into studying the role of this co-chaperone in Type II diabetes and in the signalling pathways that regulate cancer. I also have a strong passion for public engagement focussing mainly on schools-outreach events and I am keen to meet like-minded people.

Aside from my research I like cooking, baking, walking outdoors and often frequent soft play areas for my 4 year - old daughter to have a nice play while I enjoy a good cappuccino.

New Lecturers

Dr (An)Na Wu has embarked on an international journey to pursue her research career. She received her Msc. and PhD in organic synthesis at highly-ranked Peking University and at Durham University in Synthesis & Catalysis, emphasizing in (1) palladium chemistry, (2) ligand design, (3) the total synthesis with Prof. Zhen Yang and Prof. Todd Marder. This was followed by a PDRA with Prof. Simon Woodward at Nottingham University, where she studied the self-promoted catalysis. She then held a lectureship at Guangxi Normal University since 2014, which allows her to start an independent research on organic synthetic methodologies. In 2018, Anna took up a prestigious Newton International Fellowship awarded by Royal Society at Oxford University and Durham University consecutively. She also holds a non-stipendiary Early-Career Fellowship in Durham Energy Institute of Durham University. She is now joining School of Chemistry & Biosciences at University of Bradford as a Lecturer in Bioorganic Chemistry. Her new group works on synthesizing alkaloids-like frameworks and developing bioimaging probes.

Hi, I am **Dr David Ansell** and I am a new lecturer in skin science within CSS. I originally grew up in Hertfordshire, but I'd say am now an honorary Northerner having lived here since I travelled up to study. Following my undergraduate degree at UMIST in Biochemistry I spent several years working in industry in an R&D team investigating the regulation of gut stem cells following chemotherapy damage. I then went back to academia undertaking my PhD at the University of Manchester in the lab of Prof Mat Hardman, where I was studying hair follicles and their stem cells during wound healing.

My first postdoctoral post was through a Knowledge transfer partnership (KTP) where I was developing and commercialising models of wound healing, where among other things I established an ex vivo model of wound re-epithelialisation using human skin discarded during surgery. I have been utilising this assay system during my subsequent postdoctoral posts with Prof Ralf Paus and Prof Enrique Amaya, both at the University of Manchester. I have been involved with a wide range of different wound healing and hair follicle related projects, though most recently, I have been primarily working on an industry funded project to evaluate the efficacy of a novel drug as a possible wound healing therapy.

I do try to get some time away from the lab, where I am quite an active person with an interest in many sports. My main sport is korfball, which I have been involved with for many years. I referee at national league level, though sadly as a player I am nowhere near that standard.

I am particularly excited to pursue my independent career at the University of Bradford due to the excellent reputation of CSS within the dermatology field. Moreover, the strong clinical links and a well-established tissue biobank should prove an invaluable resource for the research areas that I hope to explore over the coming years. I look forward to meeting you all over the coming weeks and hopefully forging some exciting new collaborations.

New Post-Docs

Hi, I'm **Omera Bi**. I completed my undergraduate degree in Biomedical Science at the University of Bradford in 2016 (achieved a first class), having thoroughly enjoyed my four week lab project I decided to pursue a PhD with former UoB lecturer Dr James Boyne (now at the University of Huddersfield). My research focuses on the role of oncogenic LncRNA in promoting melanoma metastasis'.

I am thrilled for this exciting new project as a **Knowledge Transfer Partnership** (KTP) associate which will help me develop and expand on my research skills further. The project is a collaboration between the Centre for Skin Sciences and Labskin UK, funded by **Innovate UK** to further develop the Labskin Human Skin Equivalent with pigmentation. The Bradford team includes **Dr Julie Thornton**, Director of CSS and **Dr Jacobo Elies** (School of Pharmacy) who is the project supervisor.

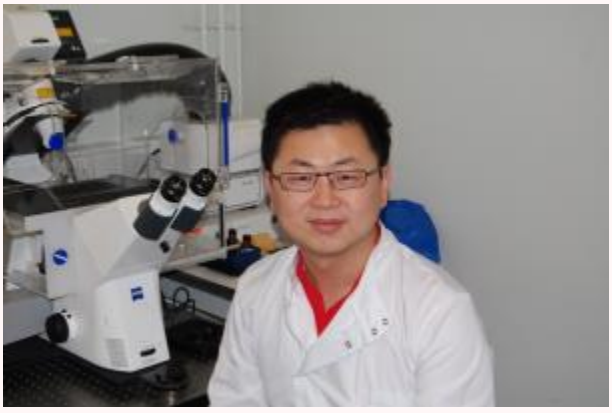
My name is **Katie Hanna** and I'm a fairly new post-doc in Molecular Endocrinology. I completed a BSc in Biomedical Sciences at Sheffield Hallam University where I got the opportunity to spend a placement year at a medical diagnostic company called Euroimmun in Lübeck, Germany where I developed a microarray slide for the detection of antibiotic resistant genes. Upon returning, I completed an MSc at Sheffield Hallam University in Molecular and Cell Biology followed by a Diabetes UK funded PhD studentship at Nottingham Trent University. My PhD project was based on the onset of type 2 diabetes and focussed on glucolipotoxicity of pancreatic beta cells. Glucolipotoxicity is the term given to the combined and damaging effect of elevated glucose and fatty acid levels. The majority of my project focussed on activation of inflammatory pathways resulting from glucolipotoxic-induced up-regulation of CD40 receptor expression. The project also examined glucolipotoxic-induced histone acetylation via disruption of the citric acid cycle and cholesterol synthesis pathways. Following the completion of my PhD I began working as a post-doctoral researcher at the German centre for Diabetes research based at the Technische Universität in Dresden, Germany where I continued researching pancreatic beta cells and progressed into investigating pancreatic cancer. I am now working on an **Academy of Medical Sciences**-funded project with **Dr Gisela Helfer** on the role of hypothalamic tanycytes in the circadian control of energy metabolism.

New Students

My name is **Alina Chelmus** from Iasi, Romania. I have obtained my Medical Degree at Gr T Popa University of Medicine and Phamacy Iasi, Romania. In 2014 I started my PhD, entitled *Adipose derived stem cells in burn wound management* at Gr T Popa University of Medicine and Phamacy, Department of Plastic Surgery. In the same year I passed my exam and at the begining of 2015 started my training in Plastic Surgery in Iasi, Romania. Also, during 2015-2016 I was awarded with a 10 month Marie Curie Fellowship, as an Early stage Researcher at AstraZeneca, UK. Since October 2019 I have started as a Research and Clinical Fellow in Plastic Surgery, part time as a Clinical Fellow at Bradford Royarl Infirmary, Department of Plastic Surgery and part time as a MPhil student, working at Plastic Surgery and Burns Research Unit (PSBRU) under the supervision of **Dr Julie Thornton**, **Prof Ajay Mahajan** and **Dr Kirsten Riches-Suman**. It is a great opportunity for me to gain experience in Plastic Surgery and pursue my passion burns research field.

Zoha Salehi Moghaddam has started a PhD with Dr Farshid Sefat (Engineering) and **Dr Mojgan Najafzadeh**. Zoha is a biomedical engineer and will be studying a functional composite scaffold for local drug delivery *in situ* post-operatively in breast cancer patients.

Farewells



In February, we were sad to see **Dr Chien-Yi Chang** leave the University. Chien-Yi was a lecturer in microbiology and had a great impact on the students he taught. He also built valuable research links with the Centre for Skin Sciences during his time here. Chien-Yi has now taken up a lectureship at the University of Newcastle and we wish him all the best in his new role!

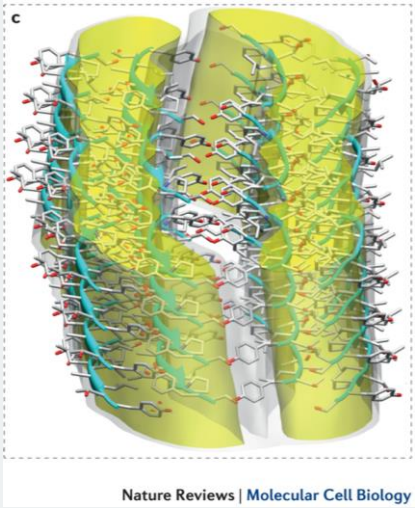
FHEA Success

Congratulations to **Dr Refaat Hamed** who has been accepted as a **Fellow of the Higher Education**. Refaat has also secured two studentships from the Egyptian government.

Dr Richard Hoskins has been given a renewed postdoctoral position following the **Grow Medtech** funding to **Prof Stephen Rimmer** and **Dr Tom Swift** late last year. He is now working on scaling the highly branched polymer bacterial sensor so we can quantify its potential for commercial manufacture.

Academy of Medical Sciences

We are delighted to announce that **Dr Clare (Towse) Peyton** has been awarded an **Academy of Medical Sciences Springboard** grant. The Springboard awards are aimed at early career researchers to aid them in developing an independent research agenda. The award provides £100,000 in funding over two years and a professional mentoring programme to support early career academics in launching their independent research careers. The School of Chemistry and Biosciences has a 100% success rate so far for the Springboard grants. This is the third year that academics from the University of Bradford were able to apply, and the third year that an award was made. Previous winners were **Dr Nicolas Barry** (2017) and **Dr Gisela Helfer** (2018). For this Springboard award, Clare will be examining the role of amino acid isomerisation in cardiac amyloidosis using a combined computational and experimental approach. Cardiac amyloidosis is one of a growing family of amyloid diseases or proteinopathies. Amyloid diseases, such as cardiac amyloidosis and Alzheimer's disease, all share molecular level commonalities underlying their pathology. Amyloid diseases result in solid deposits that, while the deposits may differ in protein composition and assembly, share a regular cross-beta quaternary structure. The toxic form of these diseases, however, is not the final solid deposits but a soluble intermediate state. This intermediate state is widely heterogeneous and we still do not yet fully understand the nature of the structural conversion to the final solid form via this intermediate. We also do not fully understand what triggers the structural conversion. One possible trigger could be changes that occur within proteins as they age, such as amino acid isomerisation. As a postdoc, Clare received funding from the Amyloidosis Foundation that allowed her to start gathering preliminary data which indicated that amino acid isomerisation could be a potential trigger of pathogenic conformational conversions. The project funded by the Academy of Medical Sciences will extend this work to focus on proteins implicated in cardiac amyloidosis. To support the computational work that will be performed during this project, Clare has also secured an **EPSRC RAP award** of computational hours to use the HPC Midlands+ supercomputer.



Amyloid fibril structure showing beta-strands and hierarchical organisation (Knowles et al. 2014).

SUSTAIN Leadership

Dr Gisela Helfer has been awarded a place on the **Academy of Medical Sciences SUSTAIN Leadership** programme. SUSTAIN is a programme which enables female researchers to thrive in their independent research careers. It provides an innovative programme of training and support to develop the next generation of promising female leaders.

RSC

Dr Zak Hughes has received a grant of £3995 from the **Royal Society of Chemistry's Research Fund** for "Towards a Molecular Level Understanding of the Interaction of Ionic Liquids with the Stratum Corneum".

Grow MedTech

Dr Kirsten Riches-Suman, Dr Jacobo Elies (School of Pharmacy) and Dr Farshid Sefat (School of Engineering) have won a £5K proof of market award from **Grow MedTech** to conduct a market appraisal of synthetic vascular implants for coronary bypass patients. This will feed directly in to a planned EPSRC application later in the year.

RSC

Dr Debbie Crawford has won a **Scientific Mission** grant, funded by EU COST Action CA18112 (£1000), project entitled: "Investigation of the mechanosynthesis and biological potency of APIs prepared under solvent-free conditions, particularly with regards to the treatment of cancer and antimicrobial resistance.

Royal Society

Dr Nicolas Barry was awarded a Research Fellows Enhancement Award 2020 by the **Royal Society.**

Conference Funding

Dr Gisela Helfer and colleagues across the UK (including Aberdeen, UCL, Cambridge, Birmingham, Leeds, Reading and Liverpool) have won a **MRC UK NRP Hot topics** bid (£10.000) to host an Appetite and Obesity workshop entitled 'Reshaping the food environment: Applying interdisciplinary perspectives in appetite research'. The workshop will take place at Birmingham University Campus in May 2020 and brings together experts in the field of Obesity research with stakeholders to identify priorities for future appetite research with a focus on obesity.

Collaborations

The team in the Analytical Centre have been working for many years with Professor Andrew Wilson (School of Archaeological and Forensic Sciences) supporting his work on frozen Inca mummies from South America. Stable light isotope and LC-MSMS analysis of their hair fibres through the Centre have underpinned these studies providing vital information on the children's diet and consumption of coca and alcohol in the period before their deaths (https://www.pnas.org/content/110/33/13322)

Dr Richard Telford has established a collaboration with the Water's group (Wilmslow, UK) that has allowed us to take the study to the next stage, developing hugely sensitive LC-MSMS assays on their state of the art instruments with a view to establishing cortisol and cortisone levels in hair samples from the same ice mummies and some new samples taken by Prof. Wilson last year. These analyses will support the study further, giving an insight into the physiological stress status of these individuals in the months leading up to their ritual sacrifice.

Editorial Board

Dr Gisela Helfer has been invited to join the Editorial Board of **Frontiers in Physiology** (section Chronobiology).

Papers in Press…

Ahmed MI, Pickup ME, Rimmer AG, Alam M, Mardaryev AN, Poterlowicz K, Botchkareva NV, Botchkarev VA. **Interplay of MicroRNA-21 and SATB1 in epidermal keratinocytes during skin aging.** *Journal of Investigative Dermatology* 2019;139(12):2538-2542

Barry NPE, Pitto-Barry A, Martin W. **The sound of chemistry: Translating infrared wavenumbers into musical notes.** *Journal of Chemical Education* 2020

Bowen RD, Martin WH, Hudson CE, McAdoo DJ. **Experimental and computational evidence for C=O π-bonding in [CH2OH]+ and related oxonium ions.** *European Journal of Mass Spectrometry* 2020

Broadley D, McElwee KJ. **A 'hair-raising' history of alopecia areata.** *Experimental Dermatology* 2020

Eltaboni FB, Caseley E, Katsikogianni M, Swanson L, Swift T, Romero-Gonzalez ME. **Fluorescence spectroscopy analysis of the bacteria-mineral interface: Adsorption of lipopolysaccharides to silica and alumina.** *Langmuir* 2020

Gao K, Fu J, Guan X, Zhu S, Zeng L, Xu X, Chang C-Y, Liu H. **Incidence, bacterial profiles and antimicrobial resistance of culture-proven neonatal sepsis in South China.** *Infection and Drug Resistance* 2019;12:3797-3805

Habas K, Brinkworth MH, Anderson D. **A male germ cell assay and supporting somatic cells: its application for the detection of phase specificity of genotoxins in vitro.** *Journal of Toxicology and Environmental Health. Part B. Critical Reviews* 2020

Hayat N, Fenwick NW, Saidykhan A, Telford R, Martin WH, Gallagher RT, Bowen RD. **Structure reactivity relationship in the accelerated formation of 2,3-diarylquinoxalines in the microdroplets of a nebuliser.** *Bioorganic Chemistry* 2020;94:103386

Helfer G and Dumbell R. **Endocrine drivers of photoperiod response.** *Current Opinion in Endocrine and Metabolic Research* 2020;11(4):49-54

Ofori-Anyinam B, Riley AJ, Jobarteh T, Gitteh E, Sarr B, IsatouFaal-Jawara T, Rigouts L, Senghore M, Kehinde A, Onyejepu N, Antonio M, de Jong BJ, Gehre F, Meehan CJ. **Comparative genomics shows differences in the electron transport and carbon metabolic pathways of *Mycobacterium africanum* relative to *Mycobacterium tuberculosis* and suggests an adaptation to low oxygen tension.** *Tuberculosis* 2020

Saleem S, Tariq S, Aleem I, Shaheed S, Tahseen M, Atiq A, Hassan S, Abu Bakar M, Khattak S, Syed AA, Ahmad AH, Hussain M, Yusuf MA, Sutton C. **Proteomics analysis of colon cancer progression.** *Clinical Proteomics* 2019;16

Siah TW, Guo H, Chu T, Santos L, Nakamura H, Leung G, Shapiro J, McElwee KJ. **Growth factor concentrations in platelet-rich plasma for androgenetic alopecia: An intra-subject, randomized, blinded, placebo-controlled, pilot study.** Experimental Dermatolology 2020

Research

BAPRAS

Lucy Trevor one of our current research fellows supported by the Plastic Surgery and Burns Research Unit (PSBRU) and supervised by **Dr Julie Thornton** and **Dr Kirsten Riches-Suman** gave an oral presentation of her work entitled "Pre-adipocytes modulate the migration, proliferation and metabolism of dermal fibroblasts derived from breast skin following radiotherapy: applications for wound healing" at the winter meeting of the British Association of Plastic, Reconstructive and Aesthetic Surgeons (BAPRAS). Lucy's talk was very positively received and following her presentation she was awarded the highly prestigious President's Prize, which is given for the most outstanding contribution by a trainee to the advancement of surgical science related to the field of plastic, reconstructive, and aesthetic surgery.

Grow MedTech Annual Conference

In December 2019, **Dr Kirsten Riches-Suman**, **Dr Julie Thornton**, **Prof Anne Graham** and **Dr Tom Swift** attended the Grow MedTech Annual Conference in Leeds. This was an exciting day of talks and posters highlighting how research across Yorkshire is advancing medical technologies – from devices to detect depression to robots for rehabilitation. The highlight of the day was the annual Dragon's Den event where 6 shortlisted finalists pitch their Grow MedTech innovation to a panel of business and sector experts with a view to securing the £15,000 prize. Kirsten was one of the finalists and she presented her proposal regarding designing a synthetic vascular implant for coronary bypass patients. This is a collaborative project with Kirsten, Anne and **Prof Steve Rimmer** and recently, Dr Farshid Sefat (School of Engineering) and Dr Jacobo Elies (School of Pharmacy) have joined the team. Whilst her pitch was very well received, the funding went to a rival team who were developing a monitoring device for children with sleep apnoea. This was an excellent training opportunity at delivering a different type of scientific talk, focussing on business plans and competitor analysis as well as basic research, which would benefit many of our school members. It was also the first conference talk that Kirsten had given since returning from maternity leave, and was a welcome reassurance that she could still perform under pressure!

RSC Biomaterials

On 8-10th January, **Dr Steven Carter**, **Mr Sehaj Singh**, **Dr Zahid Mahmood** and **Miss Nehnah Siddique** from **Professor Stephen Rimmer**'s research group attended the **RSC Biomaterials Chemistry Group** 14th Annual Meeting at the University of Manchester, where all four delegates presented their results. Nehnah was present at the poster sessions throughout each day showing results from her first year PhD studies on Polymer Degradation, whilst Sehaj and Steven presented a poster and talk, respectively, on 'Highly branched thermally responsive polymers for the detection of bacteria in Milk.' The latter research work is part of the 'Diagnostics for One health and user driven Solutions for AMR' (DOSA) project in collaboration with universities in India and the UK (Bradford, Edinburgh, Southampton and London College of Communication). As part of an industry collaboration with Bradford, Zahid presented his work on Antimicrobial Medical devices.

The meeting was also attended by **Maria Azmanova** and **Laia Rafols Parellada**, PhD students from Dr Nicolas Barry's research group. Laia presented a poster on novel cobalt-based complexes, and Maria gave a talk about the anticancer properties of an electron-deficient ruthenium complex.

With internationally renowned key speakers the meeting was an excellent opportunity for everyone to promote their biomaterials chemistry research as well as enhance existing links and foster new collaborations.

BioNow 2020

The School of Chemistry and Biosciences had a unique opportunity to attend a high-profile medical conference, **Bionow 2020**, at Alderley Park Conference Centre. This is an event designed to discuss methods to tackle antimicrobial resistance. Representing **Prof Steve Rimmer**'s Research Group, we were honoured with exhibiting our current research endeavours at this event.

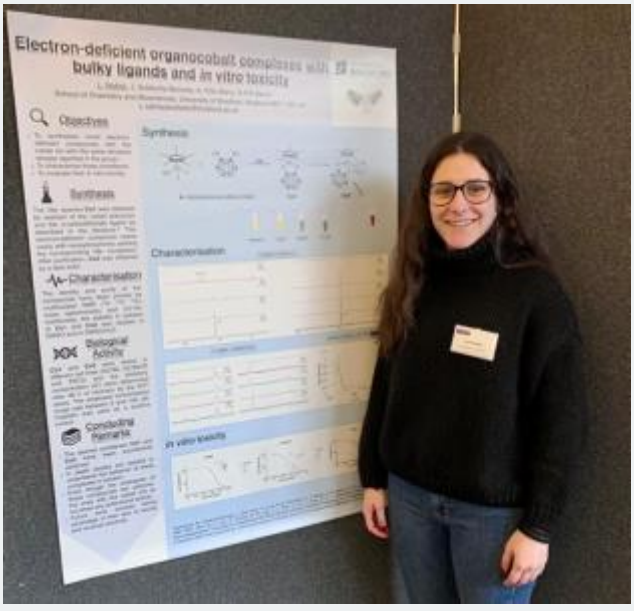
Dr Zahid Mahmood presented a paper poster presentation based on smart polymer medical device technology with scope for therapeutic applications relevant to antimicrobial resistance which presents a growing problem in the current population climate. This important project in collaboration with commercial partner, 5D is funded by Innovate UK

Organic Chemistry Symposium

Dr Deborah Crawford gave the plenary talk at the **RWTH Aachen's 12th New Year Organic Chemistry Symposium**, sponsored by Bayer AG.

Susan Love Foundation

Dr Chris Sutton was an invited speaker at the **Susan Love Foundation 10th International Symposium** in UCLA on 7th February, presenting his groups research on the "Development of a mass spectrometric assay for the early diagnosis of breast cancer in high risk women". Although a small meeting it was attended by some of the leading breast cancer researchers, engineers, clinicians, pathologists and patient advocate representatives.



Upcoming Conferences

The **Northern Cardiovascular Research Group** (NCRG) Meeting 2020 is being held at the University of Bradford for the first time in June 2020. The NCRG is an annual meeting that has been convening since 1991 and typically attracts more than 100 delegates from all over the UK. Since its inception, the NCRG now includes researchers from Manchester, Leeds, Liverpool, Glasgow, Bradford, Bristol, Cardiff and Oxford as well as from institutions further afield such as Belgium. The meeting brings together clinicians, scientists and students who share a common interest in cardiovascular physiology and pathology with the aim of fostering collaborations and stimulating new ideas for research. The work presented covers a diverse range of themes, but the intention of the meeting has always been to provide an opportunity to present exciting new research and research in progress.

Our keynote speaker will be Dr Samantha Pitt, University of St. Andrews. In brief, Dr Pitt is rapidly gaining renown for her work in calcium and ion channel regulation, is the recipient of a Royal Society of Edinburgh Biomedical Fellowship and recently gave a keynote lecture at the Zinc-Net Meeting 2019. We are also continuing the tradition of having a select number of 'New & Notable' oral presentations, kindly sponsored by Cairn Research. We will also have oral and poster slots available that will be selected from the submitted abstracts.

The meeting is being organised by Dr Matt Hardy, Dr Jacobo Elies (both School of Pharmacy), **Dr Kirsten Riches-Suman** and **Dr Munir Hussain** (both School of Chemistry and Biosciences). We are delighted to have secured Bradford as the host this year as it provides an excellent opportunity for us to showcase our cardiovascular research. The University of Bradford is gaining increasing recognition in this field through our strong publishing track record and participation in national (British Society for Cardiovascular Research) and regional (Northern Vascular Biology Forum) networks. It will be an excellent opportunity for students to present their work in a relaxed, supportive setting and for more senior academics to network and establish new - or build upon existing - collaborations.

If you wish to register or submit an abstract, please contact Matt in the first instance (m.e.l.hardy@bradford.ac.uk). We look forward to seeing you there!

The **British Crystallography Association** spring meeting is being held at the University of Leeds from 6-9 April. The Young crystallographers satellite meeting is on the 5th April with presentations from PhD Students and Post-Doctoral researchers. **Dr Briony Yorke** is chairing a session on Time-Resolved on the 7th of April with speakers covering topics in time-resolved chemical and protein crystallography. Briony will be presenting the prestigious early career prize lecture for the biological structures group on the 8th of April, which has been awarded to recognise her contributions to the field of crystallography.

Seminars

Our seminar series are open for all to attend – please encourage your students and junior staff members to attend wherever possible. It's a great opportunity to keep up to date with the latest research going on both in our school and in the wider research community! All seminars take place between 12-1pm.

Date	Speaker / Title	Location
04-03-20	**International Women's Day Seminar** Prof Janet Lord (University of Birmingham) Age-related multimorbidity: Is a radical new approach required?	Richmond H33
18-03-20	Dr Helen Shedrake (ICT) New strategies in integrin antagonism	Richmond C7
13-03-20	Prof Richard Morgan (ICT) Engrailed-2: A transcription factor with multiple roles inside and outside the tumour	Richmond H33
20-03-20	Ms Maria Azmanova (SCB) Unveiling the chemistry and biochemistry of electron-deficient organometallics	Richmond E59
25-03-20	Prof Kevin Sinclair (University of Nottingham) Parental diet and assisted reproduction: Consequences of epigenetic programming of life-time development	Richmond H33
27-03-20	Mr Anwar Salem (ICT) The role of the CCR7 axis in cancer	Richmond E59
01-03-20	Dr Tom Chamberlain (University of Leeds) Targeted fabrication of functional nanomaterials	Richmond H33
03-04-20	Mr Abdullah Magaji (ICT) Investigation of aldehyde dehydrogenase expression and regulation in colon cancer	Richmond F21
08-04-20	Ms Julie Warden and Dr Bilal Nazir Academic drift, ethnic attainment and assessment **Suitable for staff only**	Richmond H33
22-04-20	**Prestige Lecture** Prof Giles Gasser (University of Cambridge) Title TBC	Richmond J19
24-04-20	Ms Di Lu (ICT) Synthesis and evaluation of FPR1 antagonists for treatment of glioblastoma	Richmond F21
29-04-20	Prof Marian Gheorghe (University of Bradford) Computational intelligence applied in biology and toxicology	Richmond H33
15-05-20	Dr Seth Coffelt (CRUK Beatson Institute) From rarity to clarity: Gamma delta T cells in cancer	Richmond E59
22-05-20	Prof Dominique Heymann (University of Sheffield & Nantes) Interleukin-34: a new cytokine with pleiotropic functions	Richmond C7

Technician Commitment

The **RSC** are unveiling their Technician Commitment action plan at their London headquarters on 4th March. Chemistry technical staff, **Tracy Holmes** and **Heather Reeve** will be attending to represent UoB. We look forward to a brief report after the visit.

Teaching Technicians

The Biomed Teaching Team would like to express their thanks to all the G floor staff for their support for the undergraduate laboratory projects, which come to an end recently. It has been a very busy few weeks but the technical team were on hand to help train, support and offer a friendly smile or words of encouragement. This support really makes the project experience for our students, so thank you to you all!

Thank you all so much, keep up the fantastic work and the friendliest atmosphere! ❤ ❤

We shall miss labs. It was the best part of our uni degree. Thank you for making the experience amazing! ☺

The G floor staff are so supportive and helpful. They can never do enough for you

The lab staff was extremely helpful and enhanced our year 3 lab project experience ☺ ★★★★★ 5 stars out of 5 THANK YOU VERY MUCH!!!!

Very helpful staff, always looking out for us.

Patient, helpful and caring. You've made labs so much easier and we couldn't have done it without you! The only feedback I have is to not change! I don't see why you would change! Keep on the great work. You really do deserve more recognition. THANK YOU!

Always there for a helping hand when we were stuck / confused. Nothing to improve on!

Personally I have had the best experience which I have never expected in the last four weeks. All I want to say is appreciate how amazing and helpful the technicians and supervisors were. Thank you so much again for this incredible experience!!!

You were extremely helpful during this period. Always smiling and welcoming and very helpful!

Lovely working with all technical staff, everyone is incredibly helpful and supportive, truly made the 4 weeks go by smoothly. Keep doing what you're doing!

Admissions and Outreach

Admissions

Admissions is always busy, but this year (after almost two years of battling for it) we have changed the format of our AEDs (applicant experience days) for Biomed & HCS to include a more explicit student selection component. This has meant there has been a LOT more going on! This change, amongst other things, includes the addition of a 1-2-1 between staff and applicant. Having extensively discussed reintroducing interviews (to mixed views) we decided that having informal interviews is a great way to ensure that applicants come on site, giving us an opportunity to improve conversion - something we have always proved good at.

We have run the new model three times over the last couple of months, and the reception has been overwhelmingly positive. Not only have we had many more applicants on site (more than 4x those that attended across the whole cycle last year), but the students have all performed really well. They have come to the day prepared, they have engaged with the process, and importantly, they have left feeling more positive about Bradford. We are in the process of collecting more feedback from both the applicants and our ambassadors to understand what further improvements we can make. Obviously though, I'd like to express my thanks to all those who have contributed (and continue to do so) to this process.

It is our goal to roll this system out to Chemistry in the next cycle. At this point, we still have to demonstrate that we can maintain conversion rates. We are obviously confident that we can do this though.

New Admissions Teams

In January we announced that the way we run outreach and recruitment activities was changing. In essence we were looking for two dedicated teams to take ownership of Open days, AEDs, taster days etc... to ensure we are delivering consistently high quality events.

Following an open call for expressions of interest, the Admissions committee is happy to announce our new admissions team members:

Biomed Team: **Dr Mark Sutherland, Dr Conor Meehan, Dr Gi Helfer, Dr Kirsten Riches-Suman, Dr Sobia Kauser, Dr Jenny Waby, Dr Jon Fletcher** and **Dr Anna Snelling.**

Chemistry Team: **Dr Anais Pitto-Barry, Dr Alex Surtees, Dr Philip Drake, Dr Colin Seaton** and **Dr Maria Katsikogianni**

Both of the teams will be overseen by myself, and will report to the Admissions committee. Hopefully this new system will allow us to really improve our offerings, particularly with respect to how interactive we can be, something the students really respond to.

And finally...

The following activities will be taking place over the next couple of months.

Date	Outreach Activity	Team
14-03-20	Applicant Experience Day	Biomed. & Chem.
25-03-20	Taster Day	Biomed. & Chem.
22-04-20	Applicant Experience Day	Biomed. & Chem.

Admissions and Outreach

PSBRU Annual Christmas Gathering

The Plastic Surgery and Burns Research Unit held their annual Christmas party on the 6th of December. Whilst this is of course an excellent reason to have a good old-fashioned party to recognise everyone's hard work over the year, it is also an opportunity to thank the clinicians, surgeons, doctors and research nurses who play a vital role in supporting the work that PBSRU and CSS do by providing clinical tissue.

Admissions and Outreach

Careers in Cosmetic Science

Dr Gill Westgate, working through **Cosmetics Cluster UK**, was part of the 2019 inaugural **CHEM-UK Expo** last May and met Laura Woodward, the Career and Professional Development Adviser for the RSC.

Gill learned about the RSC's series of webinars, one of which highlights potential careers for graduates in Chemistry and Gill offered to coordinate one on careers in Cosmetic Science and the cosmetic industry.

She invited two people to join her in the webinar – **Dr Clare (Towse) Peyton** - whose varied career included time spent at Boots UK in product development as well as her academic life here in Bradford and Lizzie Guest - a graduate in MChem from Bradford, who went on to work in the formulation labs at Orean Personal Care.

The format was simple - Laura sent out some questions in advance and which person she would ask. On the day, over 50 people listened live to the conversation, which was chaired by Laura and the podcast is also available on YouTube (see below). It was an interesting experience and a chance for us to help listeners get a better understanding of the cosmetics sector and its links to academia.

Our own undergraduate degree in Chemistry will offer an optional module on cosmetic science from 20/21 which we hope will be attractive to prospective students and meet the needs of future employers in this sector.

Links to the webinar and the RSC education support webpages are below.
https://youtu.be/8MpaZuLtCIQ
https://www.rsc.org/careers/

Podcast

In microbial bioinformatics, there are a lot of tools, approaches and theory out there in a rapidly changing field but most knowledge of best practice is holed up inside the heads of the experts. This podcast series tries to break this down, with such experts discussing different topics and giving opinions on approaches and the future of the field. In this episode, **Dr Conor Meehan** pairs with Dr. Leonardo Martins and Dr Nabil Alikhan of the Quadram Institute in the first of a 2 part discussion around modelling microbial evolution in terms of phylogenetics. They focus especially on what constitutes good data for such research and when to use what method, especially for transmission and deep evolution questions.

https://soundcloud.com/microbinfie/11-phylogenetics-with-the-arborists-part1

BCB Radio

Dr Gisela Helfer has been invited to host the next Research matters radio show on BCB radio (106.6FM and online) for International Women's day. The special programme will feature Dr Sarah Pike from our School of Chemistry and Biosciences and Dr Ellie Bryant from the School of Social Sciences.
The show will be broadcast on 8th of March at 12noon(for more information see https://www.bradford.ac.uk/researchmatters/).

Café Scientifique

The programme for Café Scientifique is in full swing and we heard some great talks and had some interesting discussions over the last few months. Café Scientifique is a friendly place where anyone can come to hear about and learn the latest ideas in science and technology. Café Scientifque is a free event, everyone is welcome and it takes place monthly in the National Media Museum. Details on the programme can be found here https://www.scienceandmediamuseum.org.uk/whats-on/cafe-scientifique. You can also follow us on twitter @BfdCafe or facebook www.facebook/BfdCafe for more information.

Next events:

- 12 March 2020: Dr Chris Hassal (University of Leeds) 'What insects tell us about Climate Change'
- 2 April 2020: Dr Catherine Quinn (University of Bradford) 'Is it possible to live well with dementia?'
- 14 May 2020: A discussion round led by a speaker from Fight for Sight, a charity dedicated to finding cures and treatment for blindness and other eye conditions.

Molecular Music

Dr Anaïs Pitto Barry and **Dr Nicolas Barry** engaged the public with Molecular Music during **the National Science and Media Museums** half term event.

Admissions and Outreach

Twitter Campaigns

Joining in with **Twitter** campaigns are a simple and easy way for us to improve our outreach and help to spread the word on all the exciting research that we are involved with as a school. Our campaign this quarter was all about International Women and Girls in Science Day – keep an eye out over the coming months for exciting news on the other types of research we do!

BSc Biomed Undergraduate Projects

January-February 2020 saw the teaching labs inundated with our final year BSc Biomed students for the highlight of their degrees – projects! Four weeks of intensive, 9-5 lab work five days a week – what's not to love. We are proud of our students and their achievements and hope that this is reflected in their dissertations!

Prize-winning Plastic Surgeon

Lucy Trevor won the **Presidents Prize** at BAPRAS (THE BRITISH ASSOCIATION OF PLASTIC, RECONSTRUCTIVE AND AESTHETIC SURGEONS) Winter Scientific Meeting in Monaco December 4-6th 2019 for her presentation of her research titled: Pre-adipocytes modulate the migration, proliferation and metabolism of dermal fibroblasts derived from breast skin following radiotherapy: applications for wound healing. This is an incredibly prestigious award and we offer Lucy our warm congratulations!

The link to the prize website is here:
http://www.bapras.org.uk/professionals/training-and-education/prizes-grants-and-fellowships/the-president's-prize

Student Zone

Student Societies

We have two societies for our students – **ChemSoc**, and the **Biomedical Science Society**. Did you know you can even join both if you fancy it? Please keep an eye out as to how to join and all the different events that they put on – it's a great part of being an undergraduate. While you're at it, why not follow the School on twitter - @UoBBio and @UoBChem to find out all our latest developments.

BIO MEDICAL SCIENCE SOCIETY

ChemSoc

VOLUNTEERS NEEDED!!!

Are you interested in helping out with the newsletter? Do you want to quiz your professors on how they reached their positions? If so, then we would like to hear from you! We are looking for volunteers from either Chemistry or Biomedical Science (or indeed both) who would be interested in conducting the 'Meet Your Professor' interviews that are normally found at the end of this newsletter. All it takes is a ~1 hour timeslot with yourself and the professor, and then a write up of what you discussed. It's easy, and our two roving reporters from last year (**Absari Choudhury** and **Ridha Ali**) really enjoyed the experience. If you would like to volunteer, please contact **Dr Kirsten Riches-Suman** (k.riches@bradford.ac.uk) or **Dr Andrew Tedder** (a.tedder@bradford.ac.uk) – we're looking forward to hearing from you!

Student Ambassadors

The University are currently recruiting for student ambassadors, who play a key role in supporting recruitment activities. Student ambassadors act as advocates for the university and their degree programmes, working on events such as Open days and UCAS fairs, as well as acting as role models, helping to raise aspirations and awareness of higher education. Outbound calling ambassadors help to encourage attendance at events such as open days, as well as supporting enquirers and applicants with any questions they may have about university life.

If you are interested, you can fill out an application form here!

We are also asking all staff to please help us in promoting this opportunity to ensure we have the best advocates for our courses and the university. You can do this by encouraging students to enquire by emailing ambassador@bradford.ac.uk before the application **deadline of 23:59 on Thursday 17th October**

Join our LinkedIn Groups

LinkedIn is a great tool for building your professional network, showcasing your skills and can even lead to employers contacting you, rather than the other way around. Here at Bradford we have our own LinkedIn groups so please, sign up for your free LinkedIn profile at www.linkedin.com and join the community!

Bradford University School of Biomedical Sciences
Bradford University School of Chemistry