

January 2020

FORESTRY@BANGOR

Bangor University's Forestry Alumni Magazine

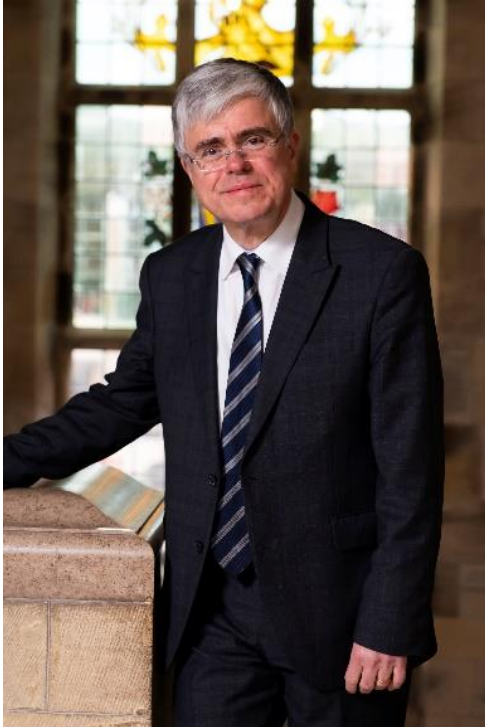
- High Achieving Alumni
- The Henman Award
- Overseas Adventures
- Research Highlights



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UNIVERSITY



Welcome from the Vice-Chancellor



I am delighted to present to you a fantastic collation of just some of the many highlights relating to forestry at Bangor University over the past two years. In many ways, forestry epitomises the spirit of Bangor University: a bold, traditional, international and dynamic university. Perhaps what strikes me most about this newsletter is the incredible achievements of our students who take such pride in, and responsibility for, their own learning through the Bangor Forestry Students' Association. It is a very rare student society that has the ambition to successfully take on the hosting a nine-day international meeting of forestry students and professionals! In time, current students will transform into alumni and young professionals with the capacity to make hugely positive contributions to society, to livelihoods, to biodiversity and to the health of our planet. And as measured by the achievements of our many alumni from the forestry and related programmes, the bar has been set very high, providing us all with inspiration and ambition. We are indebted to alumni for their generous and unconditional support.

Yours,
Professor Iwan R. Davies,
President and Vice-Chancellor

COVER PHOTO: Nepal 2019. Bangor student Tessa Fuhrmann stands above the treeline at around 2500 metres ASL, near Mt. Dhaulagiri.

New undergraduate and postgraduate students with staff at Llyn Elsi, Gwydyr Forest, **Welcome Week, September 2019**
© Mateo Roncancio



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Why this newsletter?

Two years on from our last newsletter (December 2017), the time is right for us to share with our alumni and other interested parties an update on what forestry@bangor has been up to.

There have been many highlights over the last two years. The photo below captures the undergraduates who completed the final year Forest Management Planning module in the autumn of 2018. Of this cohort, nine went on to receive first class degrees: the best result for at least a generation. Amongst this cohort were five students (Zongshi, Yang, Haoyue, Yuxi and Bocheng) who completed two years of study at the Bangor College China (based at the Central South University of Forestry and Technology). They then transferred to Bangor to complete the second and final years of the BSc Forestry programme. Between them, they achieved three first class and two upper second-class BSc Forestry degrees, heralding

the dawn of a new generation of graduates with a unique blend of forestry, language and cultural expertise.

What does 'forestry@bangor' mean?

forestry@bangor is a term coined by [Dr Mark Rayment](#), Senior Lecturer in Forestry, to encapsulate the wide range of activities taking place in Bangor University relating to forestry. Forestry was 'lost' from the School name in 2007, when the former School of Agricultural and Forest Sciences became the School of Environment and Natural Resources, and in 2018 became part of the School of Natural Sciences. Use of the term forestry@bangor is a way of retaining the important sense of 'forestry identity' that staff, students, alumni and other stakeholder's value.



Forest Management Planning undergraduate cohort – academic year 2018-19. © J Walmsley

Back row, left to right: Andrew Packwood (Teaching Associate), Matthew Clark, David Everard, Jan Natal, Ed Burniston, John Trimble, Alec Dauncey (Teaching Associate), Alex Donaldson, Ollie Stock, Christy Dowling, Zongshi Liu, Tom Fleming, Yang Yu

Front row, left to right: Sarah Ellis, Chris Andrews, Mathew Ince, Haoyue Zhou, Yuxi Zeng, Bocheng Zhang

Healthy and sustainable student recruitment for forestry@bangor

How can the 'state of a profession' be judged? We asked this question in our 2017 newsletter and we are pleased to say that, according to the measure we used then, the state of the profession remains healthy! Since 2016, enrolments on our undergraduate forestry degree programmes have increased by ~250%. We have also seen a growing number of students enrolling for the [BSc Geography with Environmental Forestry](#) degree which we launched in 2017.

We estimate that over 150 of our current forestry students are registered as student members of the [Institute of Chartered Foresters](#) (ICF). Perhaps unsurprisingly, forestry@bangor students were generously supported by the ICF to attend their Annual General Meeting and Wales Conferences in 2018 (Cardiff) and 2019 (Aberystwyth). At

postgraduate level, we have very healthy numbers of full-time residential, and part-time distance-learning students, studying forestry-related programmes. These include [MSc Environmental Forestry](#), [MSc Agroforestry and Food Security](#), [MSc SUTROFOR](#), [MSc SUFONAMA](#), as well as the part-time distance learning programmes [MSc Forestry](#) and [MSc Tropical Forestry](#)). A lively community of PhD candidates working on forestry and related research further enhances the diversity and strength of forestry@bangor. We expect the cohort of forestry-related PhD students to grow over the coming few years, as increasing societal recognition of the importance of trees and forests generates the resources required for vital research.

This newsletter provides many other examples of the vibrant state of forestry@bangor.



New undergraduate students visit to the National Trust Glan Faenol estate near Bangor, September 2019 © James Walmsley

**forestry@bangor Alumni
Graduations**

Graduation takes place twice a year, in July (mostly for undergraduates) and in December (mostly for postgraduates). In December

2018 we witnessed 48 graduates from 17 different countries gain postgraduate degrees, reflecting the truly international nature of our postgraduate community in forestry@bangor



Graduation: December 2018
From left to right: Robert Reed, Jonathan Sharp, James Walmsley (Senior Lecturer), Annie Weddle, Tom Sutton Nelthorpe

Graduation: December 2018
Sam Manning, Mark Rayment (Senior Lecturer), Daisy Sherwood



Graduation: December 2019
From left to right: Lars Markesteijn (Lecturer in Forest Sciences), Pete O'Rourke (MSc Forestry), Stephen Dudhill (MSc Tropical Forestry), Caroline Parker (MSc Forestry), James Walmsley (Senior Lecturer in Forestry), William Stafford (MSc Forestry), Stephen Bathgate (MSc Forestry), Dr Ruben Valbuena (Lecturer in Forest Sciences), John Healey (Professor of Forest Sciences)

A History

Details of the 110th anniversary event held in Bangor in 2014 can be found via the forestry.bangor.ac.uk website. As well as the successful event, which was attended by some 70 alumni, former and current staff, there are also some great stories from various alumni in the 'memories' area of the website, where a [timeline of forestry@bangor](#) from 1904 to the present can also be found.

Alumni Awards

The tremendous achievements of so many of our alumni astound us. Our alumni are fantastic ambassadors for Bangor University, and provide incredible inspiration as role models for our current students. We salute you all! forestry@bangor alumni play major roles in all aspects of forestry across the world, including the management of huge areas of public and private forests, and the forest products industries, as well as the development of forest policy, regulation, community engagement, conservation, protection, processing, value-adding, research, development and education. Our alumni also make invaluable contributions to aspects of our teaching and research, as well as our wider engagement with the forestry profession. To cover the achievements of all our alumni is unrealistic, so instead, here we summarise just a few of the recent achievements and contributions that we are aware of.

Geraint Richards (BSc Forestry 1992) was awarded the [RFS Gold Medal for Distinguished Services to Forestry](#). As well as having direct responsibility for over 2,000 ha of trees, woodlands and forests across the Duchy of Cornwall estate, Geraint is also heavily involved with various professional, charitable and research initiatives, including forestry institutes in New Zealand and Canada.



David Pelly (MSc Forestry 2018) was awarded third prize in the [Confor Future of Forestry Writing](#) event held on 20th November 2019.

Shireen Chambers (BSc Forestry and Soil Science 1985) was awarded an MBE in the Queen's Birthday Honours List 2019 in recognition of the contributions she has made to forestry. Shireen is well known throughout the forestry profession for her tireless efforts as Executive Director at the [Institute of Chartered Foresters](#) as well as for her role as the Chair of Trustees with [TREE AID](#). She was awarded an [Honorary Fellowship](#) by the university in 2015.

Thomas Ovenden (MSc Environmental Forestry 2017) was awarded the first [UK Masters Student of the Year Award](#) by the [FindAPhD](#) website. This was in recognition of the real-world impact of his masters' research project in which he investigated the potential to reintroduce the Eurasian lynx in Britain. His results revealed that Scotland possesses sufficient connected habitat to provide a realistic chance of establishing viable populations, and was published in the peer-reviewed journal [Biological Conservation](#) in June 2019.

Professor Julian Evans (BSc Forestry 1968, PhD Forestry 1971) was awarded the [2019 Sylva Trophy by the Royal Forestry Society](#) for his contributions to forestry in its broadest sense. The Sylva Trophy was introduced in 2011 as a ‘challenge prize’ and was donated by Patrick Evelyn, a direct descendent of John Evelyn, author of the seminal 17th century ‘Sylva or a Discourse of Forest-trees and the propagation of Timber’. Julian was awarded an [Honorary Fellowship by Bangor University](#) in 2017. In keeping with the spirit of inspiring the next generation of foresters, Julian visited North Wales in October 2019 and spent two days of his busy schedule with use in the University, during which he held a Q&A session with final year undergraduates,

delivered lectures to 2nd year undergraduates and MSc students and chaired a research group seminar with our PhD students. There was widespread delight amongst the students and staff to have the opportunity meet the author and editor of so many seminal forestry texts and learn all about his diverse career achievements. Thank you, Julian!



October 2019, outside the Thoday building, with the walnut tree that staff and alumni planted at the 110th anniversary directly behind Julian showing a very impressive growth rate!

From left to right:
Professor of Forest Sciences John

Healey, Stuart Sopp (PhD student) Ashley Hardaker (PhD student), Professor Julian Evans, Ibrahim Abdullahi (PhD student), Dr Hilary Ford, Dr Andy Smith, Dr Lars Markesteijn.

If you are aware of an alumnus who has received an award for their achievements, please let us know at: forestry@bangor.ac.uk

The Henman Award

Travel grants for forestry-related projects in a country other than the UK.

Warren and Beth Henman had a long and close association with Bangor University. Warren studied Forestry, graduating in 1955. Beth first came to Bangor to take up a research post in the Botany Department and later lectured in Botany and Forestry. The Henmans made a generous bequest to support students undertaking forestry related research projects. The School of Natural Sciences (forestry@bangor) uses these awards to support students working on

forestry related projects in a country other than the United Kingdom. To date, we have been able to support six students with research overseas in countries including Uganda, Spain, Costa Rica, Panama and the Philippines.

Here we highlight the most recent recipient of a Henman Award, Andrew Aldercotte. Andrew has just graduated (December 2019) with MSc Forestry and has an ambition to pursue a PhD programme in forest entomology / forest ecology. The following text was written by Andrew after he had completed his MSc Forestry dissertation fieldwork at the Smithsonian Tropical Research Institute (STRI) in Panama, under the supervision of Dr Lars Markesteijn.

What skills did you learn, how did you find the fieldwork experience, what were the most challenging and rewarding aspects?



Andrew Aldercotte at the Smithsonian Tropical Research Institute, Panama © Andrew Aldercotte

I learnt a lot in three months in Panama. I learnt how to use various tools to better prepare and identify insect specimens. I learnt various new methods of collecting nocturnal invertebrates that are attracted to light. I learnt how to drive in Panama..., which was more than a little terrifying at first. Fieldwork was tough... weather and the jungle rarely cooperated with me. Navigating in the dark, maintaining equipment, and the long night-time hours were a challenge.

Perhaps the biggest challenge was logistics: obtaining permission to be at the right sites at the right time, and then getting the equipment there, set-up, and then safely removing it along with the specimens was not always easy. The knowledge gained made it all worth it. I now know so much more about so many neotropical organisms, from trees and birds to moths and other insects. I was very excited to collect some truly incredible moth specimens (now with the collection of Dr Basset at the Smithsonian in Panama City). I hope that analysis of the data will add to our understanding of how insect herbivore community composition relates to stand diversity in neotropical forests.

Images take from the MSc Forestry dissertation that Andrew Aldercotte submitted in August 2019

What are the most interesting initial findings from your research?

The most interesting trend in the data, in my mind, is that two different taxa of moth appear to change in abundance along the gradient in tree species diversity and precipitation, but they do so in opposing directions.

The Saturniidae (commonly called silk-moths) were more abundant at the driest sites, and the Arctiinae (tiger moths) were more abundant at the wettest sites. These two groups also differ markedly in diet breadth, with the silk-moth caterpillars on average being generalists (eating the leaves of many tree species), while the tiger moth caterpillars tend to specialize on a specific host plant species.

How did The Henman Award help you?

I used the funds granted to purchase light-trapping equipment (specifically gel-cell batteries and UV bulbs). Equipment-related expenses for this certainly added up and were mostly paid for out of pocket, so being able to use the Henman Award funds to pay for some of those bigger ticket items was incredibly helpful.



FIGURE 3: Saturniid moths pinned to aid with identification. Clockwise from top left: *Rothschildia orizaba* Westwood, *Gamelia musta* Schaus, *Rhescyntis hippodamia* Cramer, & *Pseudodirphia regia* Draudt.

The Peter Henry Award

Peter Henry graduated in BSc Forestry from Bangor University in 1946 and went on to gain



an Honours degree in Botany (2:1) in 1947. He enjoyed a highly distinguished career as a Forestry Advisor for the UK Overseas Development Administration (now the

Department for International Development). He has a particular interest in tropical dry forests, and the award is made to the student who gains the highest mark for a dissertation relevant to dry forest research.

The winner in 2018-19 was Tonthoza Uganja (pictured)) studying MSc Tropical Forestry for her dissertation entitled "*Examining whether the gender composition of community management groups influences forest condition and governance outcomes of village forest areas in Lilongwe, Malawi*".

If you would like to find out more about how you could make such a bequest, please visit the [Giving to the University](https://www.bangor.ac.uk/giving/index.php.en) website, where you will find information, advice and contact details. <https://www.bangor.ac.uk/giving/index.php.en>

Recent contributions to field trips

We regularly call upon our alumni when it comes to hosting site visits. We are incredibly grateful for the time and effort our alumni devote to these activities. For many of our students, these visits are some of the most valuable aspects of their studies, enabling them to see the practical applications of their learning and, perhaps equally importantly, providing them with tangible insights into what they might achieve one day with their own careers. Some examples are listed below.

All images © James Walmsley.



Sam Brown (BSc Forestry 2011). Tihill Forestry, Palé Hall, Bala, North Wales. Sam and his colleagues at Tihill Forestry frequently host fantastic visits to sites across Wales. First year students were fortunate to have very fine weather on a visit to a privately-owned plantation on the edge of Snowdonia National Park in early October 2019.



Philip Nyeko (PhD Forestry 2001) is now the Professor and Head of The Department of Forestry, Biodiversity and Tourism at Makerere University in Uganda. He has provided invaluable contributions as a guest member of the staff team on the last three Tropical Forestry Study Tours to Ghana (2015, 2017 and 2019). He is currently scheduled to host the MSc Sustainable Tropical Forestry ([SUTROFOR](#)) study tour in spring 2020. SUTROFOR is an EU Funded Erasmus Mundus masters' degree programme in which Bangor is a partner. Philip is pictured in the blue shirt.



Stephen Ramage (BSc Forestry 2007), Hayden Morrison (BSc Forestry 2014) [Gresham House Forestry](#).

Neil McGovern (BSc Forestry 2005), [Euroforest](#).

Steve, Hayden and Neil regularly host visits to forests in Eskdalemuir, Scotland, Gwydyr Forest, Snowdonia and Llandegla Forest, near Ruthin, to introduce students to the many complexities and logistical challenges of planning and undertaking forest operations.



Rob McKenna (BSc Forestry and Forest Products, 1999), James Jones and Sons, Lockerbie.

Rob has hosted several fascinating visits to this huge integrated sawmill operation, providing valuable insights into how silviculture, species selection and markets influence sawmilling, as part of the UK Forestry Study Tour in April 2017, 2018 and 2019.



Luke Angelaare (PhD Agroforestry 2005). Forestry Research Institute of Ghana (FORIG).

Luke hosted a visit to a cocoa agroforestry shade experiment in Ashanti region, Ghana, as part of the MSc Tropical Forestry Study Tour in summer 2017 and again in 2019.



Dafydd Cadwaladr (BSc Agroforestry, 1992), Dafydd Cadwaladr Firewood and Tree services, Bethesda.

Dafydd hosts an annual site visit to his firewood business every year for our first-year students, providing them with unique insights into a firewood and forestry contracting business, as well as generous quantities of tea and bara brith. Diolch yn fawr iawn, Dafydd!



Imam Sayyed (MSc Environmental Forestry 2008) and Richard Parsons (MSc Environmental Forestry, 2002) regularly host visits to [Maelor Forest Nurseries](#), northeast Wales. These visits introduce students to the principles of tree breeding and improvement. They also enable students to learn about the very latest forest nursery techniques and about the complexities of seedling supply, quality control and customer relations.



Charles Gittins (BSc Forestry 1987) and Douglas Scott (BSc Forestry 2017) both work for [Scottish Woodlands](#) and regularly host field visits as part of the final year module 'The Forestry Profession', which explores professionalism, trust, honesty and ethics in forestry. In March 2019 they hosted one of the wettest visits in living memory to the fabulous Nannau Estate in west Wales. They even loaned one of our students full wet weather gear for the day!

Development of forestry at Bangor University: the international dimension

Forestry studies at Bangor University began before the introduction of the 1919 Forestry Act. Yes, more than a decade before the formation of the Forestry Commission, and well before concepts such as 'certification' and 'standards' existed!

Here, John Healey and James Walmsley put the history in perspective. A shorter version of the following was published in the Chartered Forester in July 2019, appearing on pages 10-12.

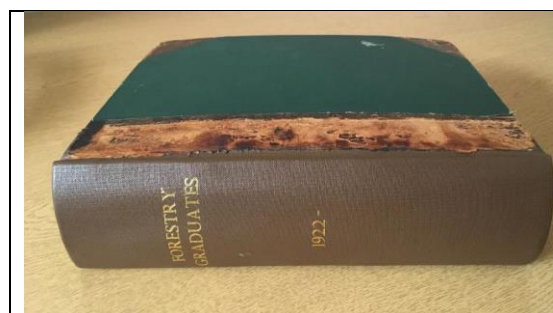
Bangor University was the first university to offer a degree in forestry in the UK with the subject dating back 115 years. Now, Bangor University is a world-leading institution that has achieved a huge impact on the profession of forestry and the sustainable management of forests globally.

One of the outstanding aspects is the role of international students throughout the history of forestry at Bangor, with students from more than 100 countries graduating over the last 40 years.

Education and research in forestry at Bangor University has progressed rapidly through substantial strategic developments with a strong international dimension. This continues the pattern established since forestry started in the University 115 years ago, on the recommendation of the UK Government's Board of Agriculture. Forestry education at Bangor took on a strongly international dimension after the appointment of Eric Mobbs CBE as Professor of Forestry in 1947, following his 20 years of senior experience in the Indian Forest Service. It then expanded rapidly as the Forestry Commission's afforestation programme grew and the role of forestry in international development became increasingly recognised. Over the 41 years of these full-time MSc courses, Bangor has, to date, educated a total of 835 postgraduate students in forestry, 327 from UK and 508 from 88 other countries.

Forestry education

In today's undergraduate programmes at Bangor, the BSc Forestry degree continues to form the core of the subject. In addition, the BSc Conservation with Forestry degree remains buoyant, linking two of the University's highest profile subjects, and the new degree in Geography with Environmental Forestry (launched in 2017) is growing well. An impressive 'tome' (below) records the names and degree results of a remarkable total of 1700 forestry graduates since 1922.



Rebound in 2015, this 'tome' is updated every year with the names and details of undergraduates who complete their studies. We have just reached page 238 out of 354 pages, so there potentially a further century of records to be added...

At the postgraduate level, the University's full-time MSc in Environmental Forestry started in 1978 and has continued strongly to this day. It was followed by an MSc in Agroforestry. A major boost has been the recent renewal of European funding for the Erasmus Mundus masters' degrees in Sustainable Tropical Forestry (SUTROFOR) and Sustainable Forest and Nature Management (SUFONAMA), through which a series of outstanding international students have spent one year of their joint degree studying at Bangor. The SUTROFOR programme includes a tropical forestry study tour, which in 2019 was hosted in Nepal (described in more detail below).

Over the course of 41 years of these full-time MSc courses, Bangor has, to date, educated a total of 835 postgraduate students in forestry, 327 from UK and 508 from 88 other countries

Over the past decade, the really notable growth in forestry student numbers has been in the University's part-time distance-learning masters programmes, with the successful MSc Forestry programme now joined by an MSc in Tropical Forestry, which has attracted generous support from the [Commonwealth Scholarship Commission](#) (CSC) since 2011. To date, 117 scholars (comprising staff from research and training institutes, government and private forest management bodies, environmental NGOs and other related

organisations) from 17 countries have registered for this degree, thanks to the ongoing support of the [CSC](#). 61 have now graduated and we welcomed 10 new CSC scholars in September 2019.

An indication of the combined success of all these degrees is, firstly, the South Scotland field course in February this year, which hosted 70 forestry students from across the BSc year 2, full-time MSc and part-time MSc cohorts, and secondly the biannual Tropical Forestry study tour in Ghana, run in collaboration with the Forestry Institute of Ghana and Makerere University, Uganda, which is typically attended by 30 students from 20 countries (image right).

Our largest forestry study tour ever? A group of ~70 spent a week together in southern Scotland in February 2019. This image was taken at James



Jones and Sons, Lockerbie, where we were kindly hosted by forestry@bangor alumnus Rob McKenna (BSc Forestry and Forest Products, 1999) © James Walmsley

Tropical Forestry Study Tour 2019 – with the impressive backdrop of the 3,500 ha teak plantation that Form Ghana have created in central Ghana © James Walmsley



Forestry PhDs

PhD students are a very important component of the University's forestry programme. They dominate membership of the 20-strong fortnightly *Forestry and Woodlands Discussion Group*, a crucial component of our research culture. During 2019 this forum has featured discussion of diverse topics including herbivore ecology, new approaches to inventory and 3D remote sensing, acute oak decline, the role of trees in landscape hydrology, and woodland expansion and planting. Over 40 years, more than 230 students from at least 50 countries have completed PhDs on forestry, wood science and agroforestry projects at Bangor, providing important high-level expertise to the sector in the UK and worldwide.

Funding sources for PhDs have shifted over the years. While Commonwealth Scholarships remain important for international students, for UK students a major development has been the prestigious *Envision* Doctoral Training Partnership jointly between Lancaster, Bangor and Nottingham Universities, Centre for Ecology and Hydrology (CEH) and Rothamsted Research, which was competitively awarded another five years of funding from 2019 by the Natural Environment Research Council (NERC). *NERC Envision* has recently funded Bangor PhD research in forests on the role of symbiotic mycorrhizal fungi in tree establishment, developing environmentally sustainable forestry value chains, quantifying the effects of deer on woodland structure, impacts of tree pathogens on regrowth of tropical forests in Panama, the conservation of red colobus in Zanzibar, and the effects of UV radiation, humidity and biological activity on litter decomposition. Discussions are under way to establish a joint "Forest College" to deliver specialist training in forest research skills with the University of Birmingham-led CENTA Doctoral Training Partnership, linked to the Birmingham Institute of Forest Research. This has already resulted in the launch of the UK's first ever national forestry-focused PhD conference "[Treescapes 2020: Bringing the future of trees, woodlands and forests into](#)

[focus](#)", which is cosponsored by the Royal Forestry Society, under the leadership of Bangor alumnus Simon Lloyd.

The Woodland Trust has been a particularly important co-sponsor of forestry PhD student projects funded via the University's European Convergence programme-funded Knowledge Economy Skills Scholarships in recent years. A set of projects starting in 2020 in partnership with Forest Research have been co-sponsored by Natural Resources Wales/Welsh Government

PhD students are core to much of the research conducted by forestry@bangor and much of this is of an exceptional standard. For example, Anita Weissflog was awarded the [2019 New Phytologist Poster Prize in Plant Biology at the 2019 Annual Conference of the Association for Tropical Biology and Conservation](#) (ATBC). Anita is not one to rest on her laurels and has recently also been awarded a short-term fellowship by the Smithsonian Tropical Research Institute to enable her to conduct a cutting-edge forest ecology research project on the effects of plant hairs (trichomes) on multi-trophic interactions between primary (insect herbivores) and secondary consumers (arthropod predators, and insectivorous bats) as part of the next phase of her PhD.

New Staff Appointments

To further support all this successful development, in the past 15 months the University has made five new academic appointments in the forestry area providing an enhanced international dimension to the curriculum and a strengthening of key aspects of new technology and of social sciences that are so crucial to forestry today.



Left – Rubén receiving his IUFRO award from Professor John Innes in Brazil, 2019.

Rubén Valbuena is an expert in the application of remote sensing to forest inventory and the assessment of many components of forest resources. His PhD is from the Forestry College of the Technological University of Madrid, followed by a Doctor of Science from the University of Eastern Finland, Joensuu, and research posts at the European Forest Institute, Joensuu, the UNEP World Conservation Monitoring Centre and the University of Cambridge, before starting as a Lecturer in Forest Sciences at Bangor. He also had a previous secondment to Forest Research. Rubén’s research has been carried out across Europe, as well as in Asia, Africa and South America. The world class research that Rubén completed for his PhD was recognised when he was presented with the ‘Outstanding Doctoral Research Award’ at the IUFRO conference in Brazil in September 2019. The IUFRO award recognized his previous doctoral work on adapting Lorenz curve methods to forest science and Lidar remote sensing. Lorenz curves are methods employed in econometrics to evaluate the

inequality of wealth in a society, and thus adapting these methods to forest science seeks to reveal the structural heterogeneity and competitive conditions in forests.



Isabel Rosa has been appointed as Lecturer in Environmental Data and Analysis. She has a BSc in Forestry and MSc in Forestry and Natural Resources Management from the Technical University of Lisbon, Portugal, a PhD from Imperial College London, and subsequent research posts at Imperial College and the German Centre for Integrative Biodiversity Research at Leipzig. Isabel uses spatial modelling to research deforestation, forest protection policy and impacts on biodiversity and greenhouse gas emissions, with a geographical focus on the Amazon, and other projects that are pantropical or in Africa or Europe.

Eefke Mollee has been appointed as Lecturer in Agroforestry/International Development. Eefke has an MSc in Environment and Resource Management from Vrije Universiteit



Amsterdam (VU) as well as an MSc in Ecology and Evolution from the University of Amsterdam, and a joint PhD between the University of Copenhagen and

Bangor University on the use of urban plant resources for health and food security in Kampala, Uganda. Her post at Bangor continues the close collaboration between the University and the World Agroforestry Centre (ICRAF), which has been maintained for over

30 years. As well as leading on the teaching of Agroforestry, she organises the [Global Food Security](#) module and Eefke has developed a new module in **Urban Forestry** (see below), which is an important strategic development in the University's forestry education. Eefke Mollee won a [best poster award](#) at the World Agroforestry Congress in 2019, held in Montpellier, France and attended by many [forestry@bangor students, staff and alumni](#).



Norman Dandy has been appointed as a Senior Research Fellow in the role of Director of the University's new Sir William Roberts Centre for Sustainable Land Use. Norman is an environmental

social scientist, with an MA and PhD in environmental politics, and his research expertise covers forest governance, land management and wildlife. He was previously a staff member of Forest Research, where he worked on the social aspects of forest health and tree biosecurity policy, on behavioural economics, forest recreation and collaborative landscape-scale wildlife management.

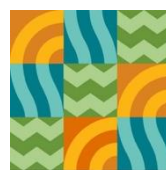


Bid Webb has been appointed as Teaching Associate in a role that has a specific focus on supporting our growing numbers of

postgraduate distance learning students. Bid is currently completing her PhD at Bangor University, studying the impact of trees and hedgerows on landscape hydrology. Her

research provides invaluable insights into the potential wider impacts arising from the loss of ash (*Fraxinus excelsior*) from European landscapes as a result of ash dieback.

These five new colleagues take the total complement of academic staff in Bangor University's forestry group up to 15. This group is a component of the University's new School of Natural Sciences, which includes a further 12 staff who contribute to our programme of research and teaching in forestry through their work on biodiversity conservation, soil science, hydrology, deer behaviour, environmental economics, ecosystem services, ecological modelling, life cycle assessment and a range of other subjects, all with a notable international dimension. In addition, while Bangor no longer teaches wood science as a degree subject, we have retained research strength in this area through the Biocomposites Centre, with five senior scientists amongst 16 research staff qualified at the PhD level.



The [Sir William Roberts Centre for Sustainable Land Use](#) is a new collaboration amongst staff, students and partners which aims to stimulate and

promote interdisciplinary land-centred sustainability research and teaching at the University. It 'launched' this September with an event attended by both representatives of external partner organisations and Bangor staff and students (see below). The Centre's establishment is being funded by philanthropic gift and its goals include continuing the growth of successful postgraduate and early career research across land-centred subject areas and further strengthening engagement with land-based stakeholders. See <https://swrc.bangor.ac.uk>

International research and its importance for forestry education

Within the UK, uniquely in Bangor, more than half of the staff teaching on the forestry degree programmes are “research active”, carrying out and publishing research of international importance. Given the rapid changes in the whole context of forestry, we can reasonably predict that professionals will see huge shifts in policy and practice during their careers, which makes it so important that their education gives them a strong capacity to adapt and to innovate, based on a robust understanding of the underlying science and the process of research through which it is generated. Therefore, Bangor is strongly committed to making its forestry teaching “research-led”, as well as informed by forest policy and practice, and to ensuring that it has a strongly international perspective.

More than 93 research papers have been published in international journals on forest topics by Bangor University staff during the past two years. In the area of **forest management and silviculture** they include: [“Methods for predicting Sitka spruce natural regeneration”](#) (in collaboration with Forest Research), [“Reduced impact logging and silvicultural interventions in Ghana”](#) (co-authored by Bangor MSc students attending our tropical forestry field course), [“Effects of logging on roadless space in intact forest landscapes of the Congo Basin”](#), [“Modelling tree growth to determine the sustainability of current off-take from miombo woodland”](#) and papers on [how tree species mixtures in plantations affect the rate of biomass production](#), the economics of upland forestry, on selecting native tree species for reforestation in Lebanon, and on the impacts of understorey vegetation in oil palm plantations on ecosystem function in Indonesia.

Research into **improved methods for forest inventory and assessment of structure**, based on the latest technology, has produced papers

on using airborne laser scanning for forest canopy height measurement, biomass estimation and structural classification, monitoring forest restoration, modelling tree diameter distributions, and its use in combination with citizen science observations to determine habitat preference of forest birds. A paper related closely to improved forest practice is [“Valuation of growing stock using multisource GIS data, a stem quality database, and bucking simulation”](#).

Research on **tree disease** includes two projects jointly with Forest Research, one funded by [Woodland Heritage](#). Resulting papers have reported advances in fundamental understanding of the microbiology of acute oak decline, including the amazing discovery that it is [caused by a consortium of separate bacterial species, whose whole genomes we have now sequenced](#). Linking to forest management and policy, bioeconomic modelling has shown how tree species diversity influences the economic costs of pests and diseases and what factors influence public willingness to pay for forest disease control in UK.

Research into the ecology of forests and their soils has resulted in high profile papers on how tree fine roots regulate soil carbon stocks, and how the soil microbial community responds to afforestation with monocultures and species mixtures (based on the [BangorDIVERSE](#) experimental site, part of the global [Tree Diversity Network](#)). In Welsh woodlands we have found that grazing causes a notable shift in the functional diversity of the tree and sapling communities and their tolerance of shade, drought and waterlogging. The abundance of lianas (woody climbers) has been increasing in many areas of tropical rain forest and an important new study shows how lianas are able to conduct water very efficiently from roots to leaves without the high risks inherently faced by trees of breaks in their water columns through cavitation, thus allowing lianas to outperform trees under the drier conditions occurring with climate change. A major new analysis of seasonally dry tropical forests of the

Caribbean islands showed how a combination of longer-term speciation and current climate variation combine to determine the geographical distribution of their tree communities. Long-term monitoring of permanent sample plots in the montane tropical rainforests of the Jamaican Blue Mountains provided the data for advanced modelling that has shown how site exposure to hurricanes over 155 years has a dominant influence over tree diversity and density. forestry@bangor is also a consortium partner in a new [£3.7m NERC funded research project](#) called 'QUINTUS', led by the University of Birmingham's Institute of Forest Research (BIFoR). This international research project aims to answer key questions relating to CO₂ fertilisation of forests and the degree to which this might be limited by nutrient uptake.

Forest conservation is a major strength of interdisciplinary research at Bangor spanning between science and social sciences. It has produced recent high-profile papers on research in Africa showing that strictly protected forests in national parks have suffered the least loss of forest cover, yet some of the poorest people on the planet are bearing a high cost of policies for forest conservation. Our work has shown that across the tropics tree species diversity in forests is only weakly linked to their carbon storage, which indicates that policies targeted at protecting carbon stocks may miss many high diversity ecosystems of importance for biodiversity conservation. Research in Africa and South America targeted at improving policy reports on the implications of human migration to the forest frontier, how land change modelling can be used to inform policy to reconcile economic development with commitments to forest conservation and climate change mitigation, and the complexity of assessing the impacts of a Payment for Environmental Services programme on deforestation. Study of mangrove forest rehabilitation projects has revealed the complex institutional constraints and knowledge gaps that have led to low overall success rates. Another important theme has been the conservation of large tropical forest

mammals, and the complexity of socio-economic factors influencing the hunting of bushmeat. Closer to home, [we found new evidence on the importance of sacred woodland groves of the Greek Orthodox church for biodiversity conservation](#). A major feature of conservation research in UK has been on the challenges of red squirrel conservation, with Anglesey being a famous case study, [and the ecology of the pine marten, a predator of both grey and red squirrels!](#) While Bangor staff have provided [a new perspective on the current controversy of "rewilding" in the forestry context](#).

Agroforestry remains a major research focus at Bangor including modelling of how tree shelterbelts reduce windspeed and provide thermal benefits to sheep and how hedgerows influence soil organic carbon stock in livestock-grazed pastures, as outputs from the [Multi-land](#) Sêr Cymru National Research Network cluster led from Bangor. Most of the agroforestry papers are on engagement with farmers in a range of African countries to determine the factors influencing their willingness to adopt agroforestry practices, with a focus on response to climate change, and their selection of tree species. Linked research in East Africa has reported on the potential of beekeeping to alleviate household poverty and on the collection of wild urban plants for food and medicine.



Dr Tim Pagella with alumnus Dr Carlos Cerdan

Bangor University was well represented at the 4th World Congress on Agroforestry held in Montpellier, France in April 2019, with several staff and research students presenting their research. This also provided a great

opportunity for a [successful alumni event](#), recognising the impressive legacy that several decades of agroforestry teaching and research has created.

Bangor has a world leading research group on **soil science** who carry out important work on forest ecosystems, including indicators of woodland condition during dieback of beech stands in the New Forest, greenhouse gas emissions from the floor of boreal forest, and [delivery of ecosystem services from riparian zone woodland](#).

The Biocomposites Centre's research on **forest products** has maintained Bangor's long-standing strengths in the chemistry, materials science and fungal decay of wood.

Fundamental wood science research has characterised the lignin-carbohydrate complexes of eucalyptus. While work continues into how to protect wood from decay, innovative new research has tested the use of wood-decay fungi to pre-treat forestry biomass to improve the efficiency of biorefining for production of a range of industrially valuable chemicals. Reflecting the Centre's title, research continues into wood polymer composites, including surface activation to improve adhesion, and modelling to predict stress state and deformations. A new area of research has produced papers on methods to improve indoor **air quality** resulting from the use of wood composite panels. Novel innovation in construction has been explored by assessing what can be learned from plant cell walls to develop design principles for building envelopes. The Centre's expertise has even been applied to new technology to improve the conservation of archaeological waterlogged wood.

Bangor also values the impact of its research on **forest policy and practice**, for which efficient communication of research findings to decision-makers is key. A recent example is the policy brief "[Impacts of trees on farm ecosystem services](#)".

The student experience

At the core of the University's mission is how the international research of its staff enriches the education and experience of its students. This is a major feature of how the university markets its undergraduate and postgraduate forestry degrees, and recruitment to both continues to grow.

This will be of huge importance to meet the increasing demand for expertise to meet both the challenges of reducing rates of deforestation and forest degradation, and expanding forest area to meet demands for forest products, carbon sequestration and the delivery of other ecosystem services.

A high proportion of Bangor's British forestry students have a strong interest in international forestry and the University provides many opportunities for this to develop. Across the University, Bangor is now promoting the benefit of students gaining international experience during their degree, and forestry has been in the vanguard with a long record of students spending a year studying at partners such as the University of British Columbia or University of Eastern Finland, or spending a "sandwich year" gaining forestry work experience overseas.



A major development at the BSc level has been the opening of [Bangor College China](#), a partnership with the Central South University of Forestry and Technology in Changsha, Hunan Province. The BSc in Forestry & Environmental Science was a founding degree, with Bangor employing international forestry teaching staff in Changsha. Five of the first cohort of Chinese students transferred to Bangor for the second and final

years of their degrees and graduated in the summer of 2019. They greatly enriched the experience of the whole forestry cohort in Bangor. All our MSc classes have a high proportion of overseas students from around the world.

Bangor's forestry students are themselves taking the initiative in developing international links. The Bangor Forestry Student Association (BFSA) is very active in organising an excellent programme of weekend work experience, guest lectures and international exchanges. BFSA highlights can be found in dedicated sections elsewhere in this newsletter.

BFSA strongly supported its member, Jemima Letts, in implementing the pilot phase of her

'Tree Sparks' social media initiative, which she presented at the Institute of Chartered Foresters National Conference in April 2019. As far as we are aware, the first time that an undergraduate forestry@bangor student has been invited to give a keynote at an international conference!

With this level of commitment by both its staff and students to develop an ever-greater international dimension to the forestry programme at Bangor University, its prospects look set to grow from strength to strength.

Bangor Forestry Student's Association (BFSA) ACTIVITY REPORT

Bangor Forestry Students Association (BFSA) is a student society at Bangor University, run voluntarily by students, for students. BFSA works to enhance the learning and enjoyment of all students, partnering with local businesses, local community groups, conservation projects and a whole range of expert guest speakers to provide a full and varied programme. Here we present an overview of what was a fantastically varied and successful autumn 2018 programme.

AUTUMN 2018

By James Walmsley, Sarah Ellis, Chris Andrews, Max Battison, Lily McGuinness, Karen Batten, Eefke Molle

September 2018

BFSA starts the academic year with a bang!

The 2018-19 committee exhausted themselves before the academic year had even begun! This included hosting a spectacular stall to sign up hundreds of new student members at the annual Students' Union 'Serendipity' event, an evening meeting where the committee introduced themselves to new members and unveiled the programme for the year ahead, and a trip to the very successful [Anglesey Woodland Festival](#) at [Plas Newydd](#).

Students mixed with hundreds of members of the public at Plas Newydd @ James Walmsley



The BFSA stall at Serendipity, ready to sign up lots of fresh and energetic new members and hoping to talent spot some for future committees!

October 2018

BFSA member Jemima Letts introduces her social enterprise 'Tree Sparks'



Jemima Letts (BS Forestry 2019), presented her newly founded social enterprise [Tree Sparks](#) to BFSA and introduced members to the ideas behind the initiative. Tree Sparks wants to help current students and recent graduates to gain key skills such as social media management, business management and entrepreneurship. Tree Sparks worked closely with BFSA as it launched its pilot scheme in 2019.



Find more about Jemima in this [press release](#).

BFSA teams up with the Royal Forestry Society



BFSA president Sarah Ellis receives a commemorative award from John Roe of the North Wales Division of the Royal Forestry Society © James Walmsley

For the first time in its history, BFSA teamed up with the North Wales Division of the [Royal Forestry Society](#) to host a guest lecture. The speaker was Charles Dutton [MICFor](#) of [Tilhill Forestry](#) and Trustee and Director of the [European Squirrel Initiative](#). Charles gave an engaging and wide-ranging talk on grey squirrel control, why grey squirrels damage trees, what happens at the red / grey interface, why we have not been able to control grey squirrels and possible ways forward. BFSA was delighted to host many professional and retired foresters to G23 Thoday: BFSA was similarly honoured to be presented with a much sought after 'RFS commemorative plaque', which is now proudly on display in the main corridor of the Thoday building.

BFSA members help Elwy Working Woods with practical woodland management



BFSA members at Elwy Working Woods © Max Battison

Elwy Working Woods, in the Elwy valley, hosted a visit from eight BFSA members on 21st October 2018. Following a welcome to from Adrian Farey and a reconnaissance of some of the woodlands, the group split into two. One group spent several hours removing redundant tree guards from well-established broadleaves who had outgrown the risk of deer browsing. The other group high pruned a stand of larch trees and warmed up by stacking large quantities of coppiced hazel brash.

Max Battison, who coordinated the day with Nick Perrin from Elwy Working Woods, said “The day was a success and opened up new opportunities for people to volunteer at Elwy whether it be through BFSA or via the Undeb (Student Union) volunteering scheme. We are looking forward to returning to Elwy for another visit in 2019.”

BFSA: Honoured to host Dr Gary Kerr



Gary with the final year BSc Forestry students in room G2, Thoday Building, where he studied in the 1980s. © James Walmsley

Gary Kerr, principal silviculturist with Forest Research, was delighted to return to Bangor where he spent the day and the evening reminiscing with current students about his own experiences. Gary graduated in 1985 (BSc Forestry) and again in 2002 (PhD Forestry). He gave several excellent and engaging guest lectures, and even illustrated different silvicultural systems through a series of interactive sessions with the audience, where students and staff were repeatedly ‘felled’ and later ‘regenerated’. Gary challenged the many who attended the evening BFSA guest lecture, posing the question “The Glentress Trial Area: Norway spruce-silver fir-beech mixed selection forest – is it possible to reproduce this in upland Britain?”

John Trimble (BSc Forestry 2019) is now working with Gary Kerr and his colleagues at Forest Research as a Silviculturist.

NOVEMBER 2018

**BFSA hosts alumnus and honorary fellow
Shireen Chambers, Executive & Technical
Director of the Institute of Chartered
Foresters**



Shireen graduated from Bangor University with BSc Forestry and Soil Science in 1985 and is now the Executive and Technical Director of the Institute of Chartered Foresters (ICF). Her evening BFSA guest lecture on the 13th November

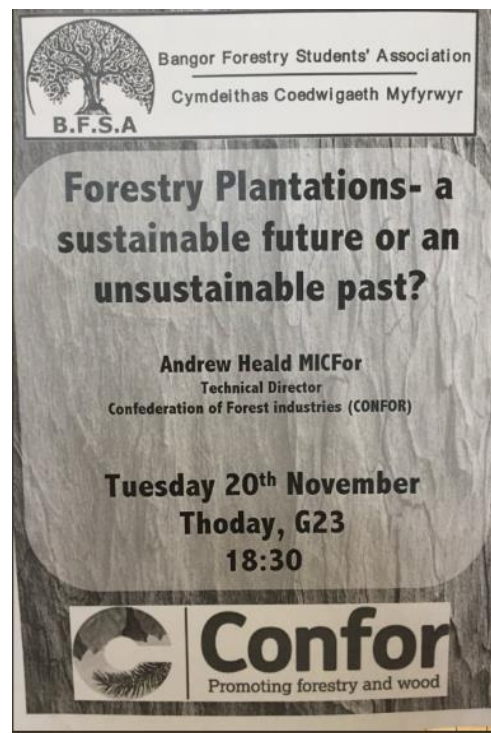
2018 was the first time that she had set foot in the Thoday building in since! (although she did come to graduation in 2015 to be awarded an Honorary Fellowship for services to forestry in 2015). Her talk on ‘a career in forestry’ engaged the attention of all those present, particularly her adventures in the Caribbean. Many students said that it was the most inspiring talk they’d heard. Shireen is a tremendous role model for all current students and particularly for our growing number of female forestry students.

BFSA hosts Andrew Heald, Technical Director of Confor

Andrew Heald, Technical Director of Confor, spent a day and an evening at Bangor University in November. During his visit he met with final year BSc Forestry students, who quizzed him on a whole range of issues relating to his career, forestry in the UK and international issues. He also met 1st year BSc Forestry and BSc Conservation with Forestry



students, informing them of the work of Confor and encouraging them to participate fully in any and every opportunity that they come across during their degree. Andrew then presented an evening BFSA lecture, sharing his thoughts on the history of plantation forestry (highlighting both successes and mistakes) and setting out his hopes for future plantations.



Reflecting on his visit, Andrew commented: *“It was great to visit forestry@bangor which is so full of enthusiasm and clearly thriving. It was impressive to see over 30 students in the first year of their degree studies and to chat with postgraduates who are undertaking such crucial research not just for Wales but also in wider global forestry issues. The recent Committee on Climate Change reports call for a significant expansion in forestry and in the use of timber in the UK. We need skilled foresters to deliver this expansion and, in particular, we need foresters that understand the trade-offs that are part of this landscape scale change in land use.”*

Generous support from the Institute of Chartered Foresters enables BfSA attendance at Wales AGM and annual conference

Shireen Chambers joined a large group of BfSA students for an excellent event in Cardiff on the 15th November. Karen Batten (BSc Forestry year 2) took on the organisation of the BfSA delegates, including the tortuous return journey by minibus from the north-west to the south-east corner of Wales. After an enjoyable evening on the Wednesday chatting with foresters and learning about the career they will one day pursue, the students sat down to an engaging and interesting discussion on the topic of “Land use in Wales: where are we going?” Guest speakers included Clare Pilman (Chief Executive of Natural Resources Wales), Jon Westlake (Head of the Policy Land Management reform division, Welsh Government), Corisande Albert (land owner) and many others (pictured below). Feedback from students was all positive and we hope to continue the high attendance of Bangor University students to events like this in the future.

December 2018



Job done! 400 trees planted in the space of a few hours, despite adverse weather and ground conditions. © James Walmsley

Tree planting in the Ogwen valley

BfSA volunteered time, energy and expertise to help out a local business, the Snowdonia Mountain Hostel, based in the spectacular (yet virtually treeless) Ogwen Valley, just south of Bethesda. Despite drizzly and grey conditions, the minibus was oversubscribed and 14 keen, committed BfSA members made short work of a tree planting scheme involving holly, willow, birch and alder. In return they were rewarded with some great hospitality, including a hot lunch in the recently renovated hostel: highly recommended for anyone planning a visit to this part of Wales on a shoestring! A full press



release is available [here](#)

Send a Cow: 30 Years of Learning from African farmers – how holistic livelihoods development programmes mature



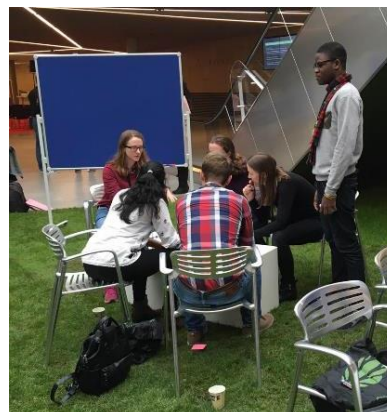
Smallholder farmer in Zambia © Send a Cow

BFSA hosted an excellent guest lecture, in collaboration with Dr Eefke Mollee, new Lecturer in Agroforestry. Dr Richard Alford, Director of Research and Impact, who has been working for [Send a Cow](#) since 2004, came to Bangor to meet with current students and staff, sharing his insights and enthusiasm for this great initiative that works across Burundi, Ethiopia, Kenya, Rwanda, Uganda and Zambia. One of our [MSc distance-learning](#) students, Alessia Cogliandro, has since undertaken her dissertation fieldwork with Send a Cow in Zambia in the summer of 2019 and is currently writing up.

BFSA members travel to Bonn, Germany

Catherine Pearson and Lily McGuinness (2nd year BFSA members) were selected to represent BFSA at the [Global Landscapes Forum](#) in Bonn in December 2018.

Lily also attended the Youth in Landscapes Initiative workshop in the days leading up to GLF Bonn, in which she delivered a workshop on social entrepreneurship, and learnt how to



utilise different leadership qualities. This was aided by meeting other young leaders from around the globe who had set up their own (agro)forestry/environmental businesses, such as Fe Cortez, founder of [1 menos lixo](#). At the main GLF event many of the talks built on the involvement of youth, and cooperation across all sectors to ensure efficiency in action by utilising the different skillsets of each sector. The focus was also on the roles of indigenous peoples' ancestral knowledge as pathways for ecosystem regeneration. Lily came away from this experience inspired to start her own environmentally-oriented campaign, [EnvironmentalLily](#).

Their visit also included meetings with the [International Forestry Students Association \(IFSA\)](#), with which BFSA maintains strong links.



Catherine and Lily were amongst a large and international group of delegates at the Global Landscapes Forum, Bonn, December 2018.

BFSA Autumn 2019 GUEST LECTURES

Rob Hawkins – Institute of Chartered Foresters

BFSA's academic talks were opened by the Institute of Chartered Forester's technical director Rob Hawkins who came in to discuss how the ICF can implement, enhance and maintain a career in forestry. This talk was especially beneficially to all first year foresters who attended, as this was their first introduction to the Institute. Rob offered a fantastic insight into the route to become a chartered forester and why it is a worthwhile venture. The evening concluded with Rob joining us for a pint to discuss how he became involved in the forestry industry and to tell us about the upcoming opportunities with the ICF.

Jordan Harris – British Horse Loggers

The second talk of the year was delivered by our very own Jordan Harris. Jordan delivered a fascinating talk on behalf of the British Horse Loggers. He discussed his experiences in the horse logging sector, especially focusing on his experiences gained whilst horse logging on Dartmoor. His talk included: the benefits of using horses instead of heavy machinery, the different breeds of working horses, the mechanics of horse logging, the different roles a horse can carry out and why horses are still relevant in such a technologically advanced sector.

George Dennison and Dolores Pavlovic – International Forestry Students' Association

George and Dolores delivered a riveting talk about how the International Forestry Students' Association can increase a student's employability whilst travelling the world and meeting other forestry students from all over the globe. The stories and experiences they shared about their involvement in IFSA were both insightful and inspiring. They described how they had learnt about

different cultures and forestry techniques used in a variety of different countries. Their talk illustrated how travel through the medium of a student organisation builds a person as well as a career. One of their reoccurring points was that the opportunities prevented by IFSA are open to everybody. There is no major financial constraint.

Anthony Geddes - Confor

The talks for 2019-20 autumn semester were rounded off by Confor's National Manager for Wales Anthony Geddes. Having a background in finance, Anthony's talk looked at a different angle at how



climate change might affect the forestry industry. He discussed how rising sea levels will influence the price of land being purchased for forestry. He also took a fun angle on financial markets in the forestry sector, by looking at how many timber framed boats we would need to build in response to flooding caused by climate change. Anthony's talk was interesting and very relevant. He is an excellent speaker and BFSA are very lucky that he accepted our invitation to talk. He also joined the students in the pub after his talk to tell us about his not-so-conventional way into the forestry industry.

Anthony Geddes in action in the Gareth Edwards-Jones lecture theatre © Peter Roe

EVENTS AND ACTIVITIES



Bob Case enjoying the meditative rhythm of a traditional pole-lathe

National Coppice Week @Moelyci Woodlands

A personal account by Bob Case (BSc Forestry year 2)

"This year I was lucky enough to be involved in BFSA's trip to Moelyci Woodland to celebrate National Coppice Week. The woodland is a short walk from Bangor and consists of coppiced hazel, ash and sweet chestnut. One of the biggest management problems of this woodland was the presence of grey squirrels. The damage sustained to the trees is still noticeable, even though the greys have been eradicated from the woodland for many years now. Ash is slowly being phased out in this woodland due to persistent ash dieback and is being replaced by regeneration of sweet chestnut. In the afternoon we all had a go at green woodworking with sycamore timber sourced from the local Penrhyn Castle grounds. It was great fun and a skill that I have been wanting to try since I started Forestry at Bangor over a year ago. We were tutored by Mike, the woodland owner, in a variety of techniques including axe shaping, using a draw knife

with a shave horse and use of a lathe. By the end of the day I had a piece of sycamore that vaguely resembled a spatula which was nice and pleasing. Thank you to Jordan Harris, BFSAs Local Opportunities Officer, for organising a great event.”

Tree planting at Newborough Forest



BFSAs members after a busy day of planting trees at Llyn Parc Mawr community woodland, Newborough Forest, Anglesey

BFSAs was involved in the Woodland Trust’s Big Climate Fight back, with the objective being to plant 1,000,000 trees across the UK in one day. The event was hosted by the community woodland Llyn Parc Mawr, so it was an excellent opportunity for students to get involved in local activities. In total, 600 trees were planted by students and local residents.

BFSAs Trip to ICF Wales AGM and National Conference 2019

Once again, BFSAs supplied students with the opportunity to attend the ICF’s national conference and AGM in Aberystwyth. Thanks to a generous donation from the ICF, BFSAs were able to stay the night in Aberystwyth and meet the ICF committee for a pint before the conference. This was an excellent and unique opportunity to network with experienced foresters in a more casual setting than at the conference itself. The conference was titled Technology in Trees and Timber, which led to a range of interesting and informative talks about what the future of forestry may hold.



Christmas Bazaar

December 2019 saw the BFSAs committee raise their game at Bangor Students’ Christmas Bazaar. Norway spruce trees were sold in pots, as well as BFSAs mugs and handmade Moelyci blackthorn coasters. We increased the publicity of BFSAs as well as turning a tidy profit for the society.

BFSAs committee members in action at the Bangor Students’ Christmas Bazaar, December 2019. From left to right: Jack Thomas, Thea Rush and Bob Case © Mark Barrow

**BFSA report:
Northern European
Regional Meeting of IFSA,
April 2019**



Wales – Summary and Report

By Peter Roe, NERM chairperson / BFSA president / Bangor University
(Thanks to James Walmsley for assistance with editing!)

Organising Committee: Chairperson, Peter Roe; Vice Chair, Chris Andrews; Secretary, Sarah Ellis; Treasurer, Jan Lester Natal; Entertainment Manager, Max Battison

NERM Programme 2019

Day 1 – 12th April: *Arrival Day*

Day 2 – 13th April: *Climb Snowdon and IFSA Workshop*

Day 3 – 14th April: *Site visit to Porthmadog and Maentwrog*

Day 4 – 15th April: *Community woodlands on Anglesey*

Day 5 – 16th April: *Newborough forest on the beach*

Day 6 – 17th April: *Gwydyr Forest*

Day 7 – 18th April: *Bounce Below at Blaenau Ffestiniog and Penrhyn Quarry*

Day 8 – 19th April: *Departure Day*

A HUGE thank you to the Sponsors

We, the organising committee for NERM 2019, must take a moment to thank our sponsors for helping put on such a fantastic event. Without their help this would not have been possible.

Firstly, a thank you to [BSW](#) and [Tilhill](#). They are the UK's leading forestry management and timber harvesting and marketing company and without their initial support we would not have been able to get this event off the ground. Furthermore, they were able to provide us with an excellent field trip to Porthmadog, taking us on the steam train to a beautiful site and then furnishing us with hotdogs and beer at lunch. We are all truly grateful for their overwhelmingly generous contribution to NERM. Secondly, we would like to thank [Woodland Heritage](#), specifically Guy Corbett-Marshall. The level of support and guidance provided was incredible. Guy was always able to keep us on track and provide crucial support throughout the organising process. Beyond that he was able to help us find further sponsorship which otherwise would have been unobtainable. He was also able to join us on two of our site visits and share a wealth of knowledge with many of the attendees. For that we are all very thankful.

We would also like to thank the [Welsh Government](#) for their generous sponsorship of the event. They hosted us on a wonderful visit to Newborough forest and beach. Their willingness to help was fantastic and inspired us in many ways to push forward and strive to create an exciting and informative event for everyone.

Huge appreciation is due to the [Henry C Hoare Charitable Trust](#). The trust supports a wide range of charitable causes and interests with a

background in estate management and a knowledge of forestry. We are very grateful for their contribution to NERM as they were so willing to help us out immensely.

Finally, a thank you to our university, [Bangor University](#). Throughout the organisation process we were able to turn to the University for guidance and assistance with whatever we were worried about. Whether it be activities, transport or merchandise, they were able to help us decide what we wanted and offer financial assistance with it as well. Specific thanks are due to Professor Morag McDonald, head of the School of Natural Sciences, who was a key point of contact for us. Similarly, we thank Angharad Thomas at the university's International Office for her support and input throughout the process. The Students' Union, [Undeb Bangor](#), provided us with financial support as well as tools which were very useful throughout the event.

The Northern European Regional Meeting 2019, hosted in North Wales by the Bangor Forestry Students Association, the IFSA branch of [Bangor University](#) started on 12th April. The week was busy from start to finish. It was filled with late nights, early starts and busy days. There was plenty of engaging debate within the IFSA delegation and with a wide range of forestry professionals hosting our site visits. Particular interest was found in the challenge of balancing a variety of management objectives in typical forest conditions. One such example was Newborough forest, which accommodates not only incredibly high tourism levels but also sand dunes encroaching upon it. The evenings were punctuated with workshops, Welsh dances (known locally as 'Twmpath') and bonfires with little time to spare in between.



Images of the city of Bangor © Peter Roe

Day 1 – 12th April

Day one was dedicated to welcoming 30 IFSA members from across Northern Europe, with a few from further afield to a sunny Bangor. Delegates had the opportunity to explore the history and coastal setting of the city, and get to know the other IFSA members that they would be spending the week with

Day 2 – 13th April

Day two of NERM 2019 had a simple goal: get to know each other and summit Wales' highest mountain, Yr Wyddfa (Snowdon). Standing at 1,085 m it dominates the landscape and the climb helped to bond everyone together with the one common goal

of reaching the top. The ascent was a success, we made good time and spirits were high. After a short break at the summit for pictures and food we started our climb down. This did not go so smoothly, we took the wrong path down the mountain, hence some re-arrangements were required to change our pickup location and avoid an additional 15 kilometre walk to our intended rendezvous! It was a happy accident, the descent was down a beautiful and much quieter path, and there was plenty of chat and laughter throughout the delegation. Our day one adventure ended with a tired, happy group of IFSA delegates, blessed with magical memories of their successful ascent of Yr Wyddfa.



Learning about the diverse woodlands of Maentwrog – Peter Roe

Day 3 – 14th April

Our third day took us to the sunny seaside town of Porthmadog to catch the Ffestiniog Railway steam train to Maentwrog forest hosted by Tilhill. This site was particularly interesting to visit as it demonstrated a forest being managed under a diverse set of objectives, with timber production generally a lower priority than conservation objectives. We discussed issues apparent in various sub-compartments which were under attack from *Phaeocryptopus gaeumannii* (Swiss needle cast), as well as controlling invasive species and managing for biodiversity, whilst still turning a profit on investment. We were also treated to an excellent lunch in the middle of the woodland: gourmet hotdogs and craft beer were on the menu with cake to follow it up. Tilhill's generosity here was greatly appreciated by the whole party.



Queuing for hot-dogs © Peter Roe

Day 4 – 15th April

Day four was our first venture onto Anglesey. We spent half a day at the [Llyn Parc Mawr](#) community woodland, which has been successfully run with the support of [Llais-y-goedwig](#) community woodlands scheme. It plays host to a variety of activities such as charcoal making, engaging young and disabled people with woodlands as well as wildlife spotting and conservation. The second site visited was a relatively new woodland with many areas dedicated to coppicing. We enjoyed learning about the financial backing to these ventures and how they were viewed by the local and wider community.

In the evening we introduced our guests to one of the more energetic parts of Welsh culture, the Twmpath. It can be likened to a Scottish cèilidh, a high energy group dance involving lots of swinging round, changing of partners and skipping. Everyone thoroughly enjoyed getting involved and yet again we finished the day happily exhausted.



Action from the 'Twmpath' © Peter Roe

Day 5 – 16th April

The next day we were straight back to Anglesey to visit the biggest forest on the island. Newborough forest is managed by Natural Resources Wales and hosts an incredibly popular beach on its seaward edge. We discussed many issues of managing the site including pests and diseases, red squirrel conservation, timber production, ecosystem services and aesthetics. We spent time in the woods, as well as long the beach, talking about how the forest copes with being in such a challenging location. We also visited research plots looking at the water table and how the forest alters it. We visited this site with one of our lecturers, Dr Lars Markesteijn, as well as a range of forestry professionals from: [Woodland Heritage](#), [Natural Resources Wales](#), [Forest Research](#), [Welsh Government](#).



We were introduced to the challenges of establishing a plantation on sand-dunes in the 1940s and 1950s, and the controversies that surround the management and restoration of this rare habitat in 2019 © Peter Roe

In the evening we held the famous IFSA International evening which was a wonderful fast track



experience of everyone's cultures. We went around table-by-table explaining the food and drink that was on offer as well as demonstrating a traditional song or dance. The evening carried on late into the night and many good times were had.

Action from the IFSA international evening © Peter Roe

Day 6 – 17th April

Our next site visit was to Gwydyr forest, predominantly a plantation surrounding the town of Betws-y-Coed, which is known for its adventure tourism. We were guided by Dr James Walmsley. Here we practiced some basic tree identification skills, discussed why the forest was planted in the first place and evaluated its success. We took a break in the middle of the day to go for a wild swim in the stunning Afon Llugwy, one of many scenic rivers that runs through the forest and a recently designated Site of Special Scientific Interest, due to its unusual geomorphology and rare assemblages of lichens and bryophytes. We explored the forest, visiting restock sites, young plantations and mature stands managed under a range of different silvicultural systems, including the beautiful Artists Wood, managed under a 'close to nature' approach.



James Walmsley exploring some of the challenges of managing a plantation forest in close proximity to a SSSI waterbody (the Afon Llugwy) © Peter Roe

Days 7 and 8 – 18th and 19th April

Our final day of activities took us to two different sites. Firstly, we visited [Bounce Below](#), a fantastic trampoline park located in the slate caverns of Blaenau Ffestiniog. As shown in the photos below, it's an incredible place and it certainly tired everyone out. After

an exhausting hour of bouncing around we got back on the coach and headed to Penrhyn quarry, which has found new life as the host to [Zip World](#). Here we walked around the edge of the site, observing the natural ecological succession through which woodland is slowly regenerating on the old waste slate tips and discussing how it can act as a model for ecological-based approaches to woodland restoration on such post-industrial land.

In the evening we enjoyed our final hours together with a bonfire, drinks and a BBQ. We sang and chatted until late in the night making the most of the short time we had left.



NERM 2019 delegates on their final evening. Happy, tired and friends for life © Peter Roe

On the final day of NERM 2019 we woke with a heavy heart and packed our bags. We bundled everyone into the minibus to wave them off at the station. As we said our goodbyes to old and new friends alike as they boarded their trains we were sure that memories had been made that would be treasured for many years to come (or at least until the next NERM).

forestry@bangor

At Buckingham Palace

Bangor foresters Sarah Ellis and James Walmsley were privileged to attend a royal [Garden Party](#) in the grounds of Buckingham Palace recently, as a result of their work with the charity [Woodland Heritage](#). Sarah and James spent much of their afternoon exploring the extensive gardens, a 40-acre oasis in the centre of London and host to an impressive collection of specimen trees. They also enjoyed glimpses of members of the Royal family, including Her Royal Highness the Queen and His Royal Highness, Prince Harry. Read the full story [here](#).



James Walmsley and Sarah Ellis at Buckingham Palace, May 2019 © James Walmsley

Heads to the Alps

[Forestry](#) graduates and MSc students from Bangor University experienced high-quality alpine forestry management when they visited the Piedmont region of Italy as part of a recent [foreign study tour](#). Read the full story [here](#).



Bangor MSc Forestry distance learners in the Alps in June 2019 (from left to right) David Cracknell, Sean Hoskins, Peter Comerford and Simon Møller © Sean Hoskins

In Westminster



In June 2019, five Bangor University [foresters](#) were privileged to be invited to join other students, forestry professionals, Members of Parliament and forest industry representatives to mark the recent launch of the national [Confor](#) #TheFutureIsForestry competition. Read the full story [here](#).

At Westminster, from left to right: John Healey, Professor of Forest Sciences; Sam Hollick, MSc Agroforestry graduate; Jemima Letts, BSc Forestry graduate; Mat Curtis, MSc Forestry student; Solange Montero Terry, MSc Forestry student

Employability

Graduates of the forestry@bangor programmes continue to enjoy high levels of success when it comes to gaining relevant, interesting and challenging roles within the profession. We attribute their success to the quality of the forestry teaching and learning experience provided at Bangor, combined with the strong national and international links that forestry@bangor has established over more than a century. Successful graduates include both those who have come from a related background (perhaps introduced to forestry through family or friends and/or a rural upbringing), as well as those with completely different backgrounds. Since completing their BSc Forestry (and closely related) degrees in 2018 and 2019, many graduates have gained positions with Scottish Woodlands, Tilhill Forestry, Natural

Resources Wales, Pryor and Rickett Silviculture, and Forestry Commission England, as well as starting a range of PhD projects. Graduates from the MSc programmes in recent years have gone on to secure similar roles, with a number of the distance learning MSc students appointed to posts within the profession well before their graduation. These include roles in community woodland management and with the National Trust, Woodland Trust, local government and private businesses. Our overseas students are also achieving similar levels of success with a whole host of different organisations, including national government ministries, international charities and development organisations, universities, colleges and research agencies.

One of our MSc Tropical Forestry CSC scholars, Mr Tankiso Lechesa, was promoted twice during his [MSc Tropical Forestry](#) (distance learning) studies and has just been appointed to a national-level position of 'Principal Forestry Officer' in Lesotho, with responsibility for increasing tree cover (currently 1.3%) as well as development of food security coping strategies that relate to forestry, such as beekeeping.

Teaching innovations

New MSc module in Urban Forestry

In September this year we have started to run our first [MSc Urban Forestry module](#). With 24 residential students and five distance learning students from a total of 14 countries, the module has been dynamic and interesting. With contributions from various staff and high-profile guest lecturers, we have been able to deliver a balanced multidisciplinary curriculum of academic and professional insights. [Assistant Professor John Gallagher](#) from Trinity College Dublin, and honorary lecturer at Bangor University, shared his insights on urban pollution from an engineering perspective, while Clare Olver from [Mersey Forest](#) contributed with a practitioner's view. Clare's lecture was also an introduction to a field trip that took place with her colleague Ben Greenaway in November 2019 to [St. Helens](#), where we visited multiple sites in different stages of land remediation from the coalmining years. We also visited [Alder Hey's NHS children's hospital](#) (see photo) earlier in the day where David Houghton showed us around with infectious enthusiasm and opened our eyes to another way of looking at healthcare. Finally, we had a contribution from Keith Sacre, founder of [Treeconomics](#), and providing much needed insights from the field to the importance of tree valuations systems and tools, in particular i-Tree.



Urban forestry fieldtrip to [Alder Hey children's hospital](#) and community park in Liverpool. The hospital is designed with nature as its the leading theme. David Houghton the project manager and driving force behind the project showed the students and staff around the hospital (in the back), and the park. November 2019 © Eefke Mollee

Staff

There have been several new appointments of forestry@bangor staff over the last few years, as discussed above. The details of all forestry@bangor staff can be found on our [website](#).



FROM OUR COVER

*SUTROFOR – Nepal 2019. Here, Bangor student Tessa Fuhrmann stands above the treeline at around 2500 metres ASL, near Mt. Dhaulagiri. In the centre of the picture is the farmland that is fertilised with litter from the *Pinus wallichiana* forests that protect communities from frequent snow and landslides*

Overseas

A recurring theme of forestry@bangor is overseas activities relating to teaching, research, capacity development and wider engagement. A few highlights from the last two years in relation to overseas teaching and learning are discussed here.

SUTROFOR heads to the Himalayas

In March 2019, students on our SUTROFOR (Sustainable Tropical Forestry) Erasmus Mundus MSc programme visited Nepal. Taking "tropical" forestry to a whole other level, students and staff from the consortium partners (University of Copenhagen, Technical University of Dresden, AgroParisTech in Montpellier, University of Padova, plus, of course forestry@bangor) spent two weeks learning how the fragile forest ecosystems of the Himalayas function, and how the forest-dependent local communities manage them.

Films of the study tour were created by the students and can be viewed through the links below:

- [Video 1](#)
- [Video 2](#)
- [Video 3](#)
- [Video 4](#)
- [Video 5](#)

MSc Tropical Forestry heads to Ghana

Following from the success of the two week residential study tours held in Ghana in [2015](#) and [2017](#), forestry@bangor once again partnered with the Forestry Research Institute of Ghana and Makerere University to hold a fantastic learning experience for 25 scholars from 16 different countries.



MSc Tropical Forestry Study Tour 2019 – Aburi Gardens, near Accra. Familiarisation with some of the more common tree species found in Ghana, such as this *Ceiba pentandra*.

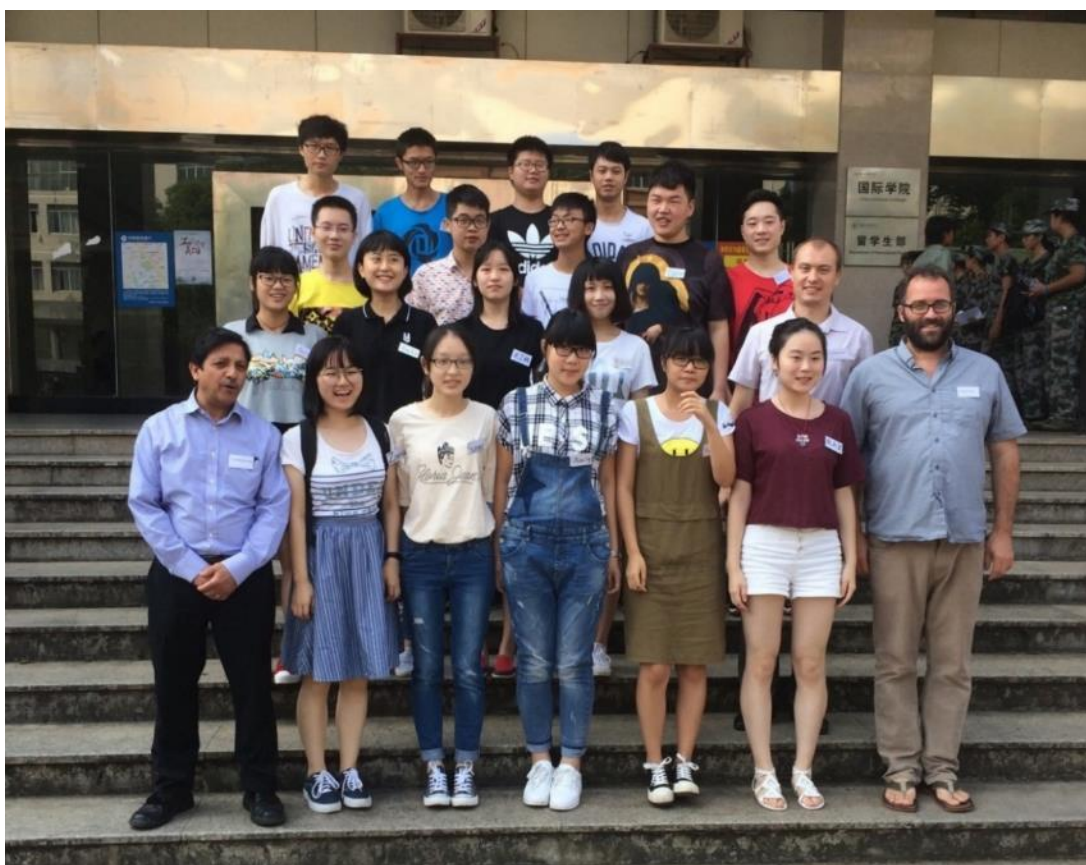


MSc Tropical Forestry Study Tour 2019 – Asubima Forest Reserve, where [Form Ghana](#) have successfully reforested an area of ~3,500 ha.

In China

A key driver for the establishment of [Bangor College China](#), a new campus of Bangor University established in Changsha, Hunan Province jointly with the Central South University of Forestry and Technology, was the strong track record of forestry@bangor for excellence in teaching and research. Since 2015, forestry@bangor staff have been visiting China and teaching Bangor University students in Changsha, where we now have nearly as many undergraduate forestry students as we do in Bangor! After successful completion of part of their degree in China, and subject to passing English language

requirements, these students can either transfer to Bangor to complete their degrees or complete them in China. In 2019 the first cohort of Chinese forestry students to transfer to Bangor graduated, with great success. During the second and final years of their degrees they integrated very well with their UK classmates, greatly enhancing the international perspective of the Bangor forestry degree. This is further enhanced by exchange students from our partner universities, such as the University of New Brunswick, Canada. This generates a greatly enriched teaching and learning experience for students and staff alike.



forestry@bangor students in Changsha, China in October 2016, pictured with forestry@bangor. staff including:

Tim Pagella (front row – furthest on right): Course Director for the forestry undergraduate programme in China;

Madan Gautam (front row – furthest on left): Senior Lecturer in Forestry, Bangor College China and forestry@bangor alumnus (MSc Environmental Forestry, 1991);

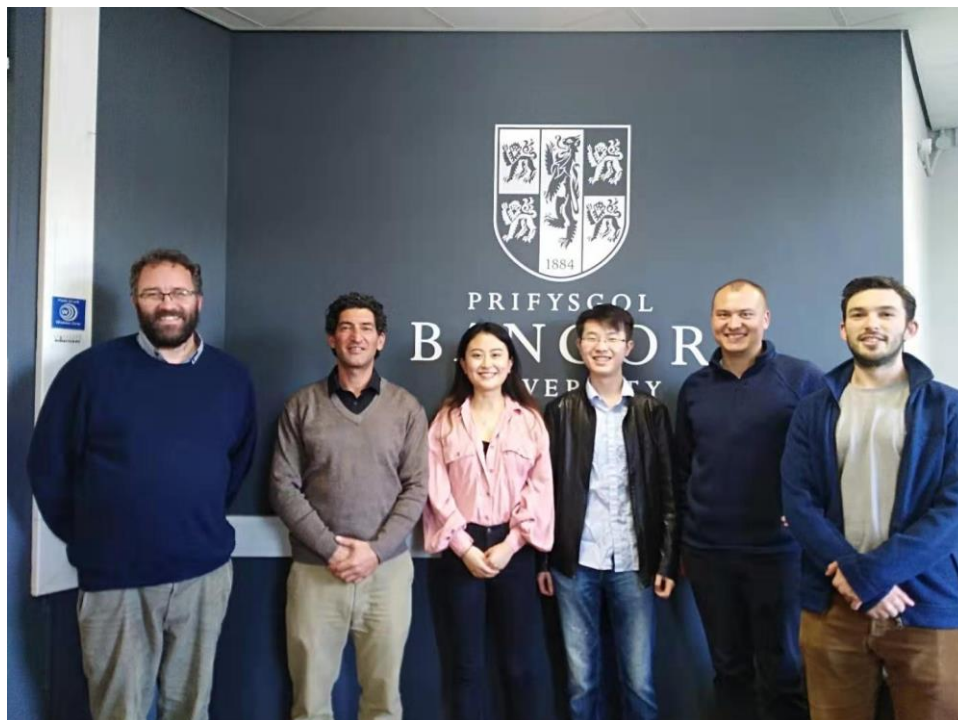
Mykola Kutia (second row – furthest on right): Lecturer in Forestry, Bangor College China. © Andy Smith



Our two current lecturers in Forestry at Bangor College China, Dr Arbi Sarkissian (left) and Dr Mykola Kutia (right) teaching forest mensuration skills to first year forestry undergraduate students in woodlands near Changsha in Hunan province



The 2019 first year undergraduate foresters at Bangor College China



The Bangor College China teaching team (Tim Pagella, Arbi Sarkissian and Mykola Kutia) reuniting with final year undergraduate BFSA forestry students in Bangor and exploring options to start an IFSA group in Changsha

The Bangor China College link with the Central South University of Forestry and Technology (CSUFT) is now yielding further benefits, as highlighted by a recent publication in the [Proceedings of the National Academic of Sciences](#). This research revealed that waterbodies in China of greater than 1 km² are [1.5 times more abundant than previous estimates](#). Inland waterbodies (i.e., lakes, ponds, reservoirs) provide an important array of ecosystem services. This research has resulted in a step-change in our understanding of the impacts of climate change on water body distribution and area in China, and the mechanisms pertaining to the these changes.

National and international university league tables

Bangor was recently placed 4th in the 2020 Guardian League Table for Agriculture and Forestry and in 7th place by the Times/Sunday Times, placing Bangor much higher than any UK university teaching forestry. Bangor University as a whole has been ranked in 10th place in the new [UI Green Metric international league table of world universities](#), one of the top four institutions in the UK, scoring the full marks available for its sustainability education and research.

Future of forestry@bangor

We are confident that Bangor's forestry education will continue to attract the best students to study forestry at both undergraduate and postgraduate level in the UK. In addition, with the great success of our forestry degree programme at Bangor China College, and in the recruitment of high calibre students from around the world to our full-time and part-time distance learning MSc forestry degrees, Bangor's international status in forestry education has never been higher. Bangor's forestry staffing has never been stronger in terms of the breadth and depth of its expertise. Together with our excellent reputation for high quality teaching and learning, and the many successes of our alumni both recent and past, we look forward to the future of forestry@bangor with high confidence.

The high esteem of Bangor's forestry degree education is now matched by our strongest ever international status in forestry research. As well as the notable success of staff in winning competitive research grants and publishing prestigious papers, we attach importance to the continuing success of our PhD students. In the UK, current policies of all the major political parties place great emphasis on increased tree planting as a major component of the countries response to the climate emergency. Yet, as well know, this presents many challenges in terms of land use change, and how to establish and manage resilient, productive and valued forests in the face of climate change and associated threats such as pests and pathogens. There are many important evidence gaps that we hope our current and future PhD students will help to fill, in collaboration with important partners such as Forest Research, the Woodland Trust and the forest industry. We are particularly keen to help foster the expansion of Forest Research in Wales, building on its new base in the Environment Centre Wales building on the Bangor University campus, under the leadership of Tom Jenkins, a former forestry@Bangor staff member. This research base in Bangor is of the greatest importance

in feeding into our forestry education, to equip our graduates with the knowledge and skills they need to address the challenges that will be faced by the forestry sector through their careers.

There are certainly challenges ahead, including the huge economic uncertainty relating to Brexit, the financing of university degrees and the ever-changing nature of higher education. However, in this review of the past two years of forestry@bangor there are a multitude of reasons to be optimistic, with Bangor continuing to lead the way in providing both the forestry graduates and research evidence needed to carry the profession of forestry forwards in the UK and internationally.

We are always delighted to hear from our alumni, near and far, so do feel free to visit us at forestry.bangor.ac.uk, drop us a line via forestry@bangor.ac.uk or call us on +44(0)1248 3882281, or stop by if you are ever in the vicinity of your *alma mater*!

James Walmsley

John Healey

Morag McDonald

Lars Markesteijn

Tim Pagella

Eefke Mollee

January 2020

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