



175
YEARS

LANDMARK

ROYAL AGRICULTURAL UNIVERSITY

ISSUE 19 | 2021



175
YEARS



CLARENCE HOUSE



As President of the Royal Agricultural University, I am delighted to introduce the 2020 edition of Landmark Magazine as it celebrates its 175th anniversary.

The dreadful disruption produced by this pandemic has meant that students' experience of life and learning at university has been very different from what they might have anticipated, and I can only too well imagine just how particularly hard it must have been for those new to university life, with many leaving home for the first time. So it is tempting, and understandable, to focus on the disruption, the failures and the challenges of this difficult period. However, if the life of the land teaches anything, it is the need to look at the long term; at the deep and enduring strengths and qualities that continue through the slow rhythm of the seasons, through Nature's ever-rejuvenating generation of new life. I am pleased to see, therefore, that the shared values, strength of imagination and tight-knit community that defines the RAU have enabled the University to ride the waves of this challenging year and reimagine student life through fresh and innovative thinking.

I have been enormously impressed to hear that, with typical self-sufficiency and imagination, academic staff have worked quickly to transform their teaching methods to allow online learning. While this has clearly involved a steep learning curve and many gruelling hours of effort, it is encouraging to know that the benefits have been enormous for learners and that, in the longer term, the digital transformation has opened up many new opportunities for the University. This ghastly pandemic has shown us how much more interconnected we are as a global community. With this technological leap, I am pleased to hear that the University will now be able to educate an ever wider and more diverse community of students at home and overseas.

Throughout its 175 year history, and despite its small size, the Royal Agricultural University has always worked for the benefit of the wider public, as well as the land-based industries it serves. I was therefore full of admiration to hear that during lockdown not only did the University catering staff provide meals for members of the local community in need, thus supporting the Bishop of Gloucester's Long Table Project, but students also worked as volunteers and academic staff contributed

to research projects that are addressing the impact of this pernicious disease. I need hardly say that it is wonderfully heartening the way that this pandemic, destructive as it is, has nevertheless brought out the best in so many kind and thoughtful people.

In 1845 The Royal Agricultural College (as it then was) was founded with the purpose of adapting the use of the land to produce food for an expanding and increasingly urban population at a time of great societal change. As the world recovers from the impacts of the pandemic the need to 'build back better' has never been more relevant or pressing. How we manage the land over the next few decades is pivotal to tackling the issues of climate change, food security and biodiversity loss. We simply cannot afford to do nothing and expect the planet to heal itself. The future of land management will therefore require a new skill set.

Change will be needed on many levels, from farming in a regenerative way to enable soils to sequester additional carbon, to natural capital enhancement and carbon sequestration, to how we link habitat across landscapes to make space for Nature. However, the most important and fundamental change will be in how we educate the farmers and land managers of tomorrow.

The RAU has a long history of fostering innovation, curiosity and a passion to care for the land and the communities that depend on it. As your President, I do very much hope, therefore, that you will lead the way in equipping those future land managers for the challenges that lie ahead.

HRH The Prince of Wales



175
YEARS

WELCOME TO LANDMARK



I am extremely grateful to His Royal Highness the Prince of Wales for introducing this special 175th-anniversary edition of our alumni publication 'Landmark'. As His Royal Highness has eloquently articulated, what ought to be self-evident truths; that education and new skills are critical for us to address the substantial range of problems that face us.

'Landmark will reach you as the world continues to try and control the Covid-19 pandemic. However, as vaccination programmes are being rolled out, by the end of 2021, the disease should hopefully be under control. It is difficult to see that any good could come from such a destructive event, but if it has shaken our collective confidence that we live outside the rules of the natural world, then some good may come of it.

The pandemic almost certainly resulted from our own ignorant forays in exploiting the natural world. Universities, and the knowledge that they hold so dear, should be key agents in protecting us from such folly. They also provide the expertise to save us from our mistakes, as the rapid production of effective vaccines makes clear. I hope that you will enjoy reading about how the RAU is committed to re-establishing a research culture that will allow us to continue to play our part.

We had hoped to celebrate our 175th anniversary with you in person and welcome you all back to the campus that alumni from across generations remember fondly. Unfortunately, this was not possible. However, despite the challenges of Covid-19, we have tried to mark this occasion as best we could. Our alumnus Richard Williamson started the year with a thought provoking 'face-to-face' lecture on farm business strategy and ended with an inspirational online Bledisloe lecture delivered by Helen Browning and chaired by another alumnus, Jonathan Dimbleby.

We had hoped to extend our 175th celebrations into 2021, but I remain cautious about suggesting a time when we may be able to meet, so would like to take this opportunity to thank you for your engagement and messages of support.

Looking ahead, your continued support will be critical, as it would be disingenuous not to highlight that Covid-19 has had a serious impact on our financial sustainability. For those interested in gaining a deeper understanding our Annual Report is a rich source of information and can be found under the Financial Statements section of our website.

Nevertheless, we face the future with great confidence. The University has pulled together magnificently to sustain the student experience during this pandemic, student numbers are on an upward trajectory (11% higher this academic year and applications for 2020/2021 are ~30% higher than for this time last year), and we have exciting new international, national and local partnerships. There is much to celebrate as we look ahead.

Professor Joanna Price
Vice-Chancellor

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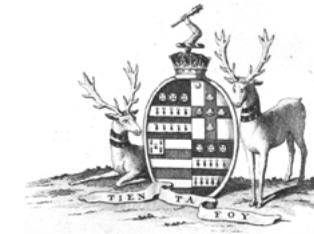


DAIRY CLASS WITH FRANK GARNER.



THE BATHURST ESTATE

A deepening, historic partnership



We are pleased to announce a new partnership with The Bathurst Estate that will provide students and staff with access to 15,000 acres of farmland, forestry, environmentally managed land, real estate, heritage properties and a range of rural enterprises for teaching, research and knowledge exchange.

The diverse range of rural enterprises that operate within the Bathurst Estate will provide invaluable real-world experience to students on all courses – including agriculture, business, the environment, real estate, rural land management, equine and the new cultural heritage programmes launching this year.

The historic Estate, “over the wall” from our campus is owned by Lord Allen Bathurst, an alumnus (1985) and one of the University’s Vice-Presidents. The Bathurst family has

supported our institution since its foundation 175 years ago.

We hope that the Estate will benefit greatly from an ever-closer working relationship with the University. Engagement with academics who are thought leaders, alongside staff and student research projects will inevitably add value to its future strategic plans.

The Vice-Chancellor said: “The University has been at the forefront of the land-based sector for 175 years and remains committed to continually enhancing the learning experience for its students. This is why we are delighted to announce this exciting partnership with the Bathurst Estate which provides a new and innovative approach to the delivery of practical teaching.”



“The traditional approach taken by land-based institutions like ours has been to rely heavily on facilities provided by their own farms. However, this can limit the students’ learning experience at a time of unprecedented change in the way we produce food, manage land, our natural resources and sustain rural economies into the future. To this end, we must ensure that our students’ horizons are as broad as possible.”

“This collaboration provides a wealth of additional opportunities on our doorstep for students to gain applied practical experience of innovative and sustainable approaches to managing the land, producing food in an economically sustainable way, while protecting the environment, supporting the rural economy and enhancing the local community.”

Lord Bathurst said: “I welcome this new partnership which will allow students to get experience and access to everyday practical land management issues. The Estate in return will gain from the students’ freer blue-sky thinking and a ‘can do’ approach and attitude to tackling some of the traditional problems found in the landed sector.”

Lewis Bebb, Student Union President commented: “I am very much looking forward to seeing the benefits it will bring to the student experience and the invaluable real-life skills which will be gained.”

“This new partnership between the RAU and the Bathurst Estate is a truly exciting move which will bring about a breadth of opportunities for students on all of our courses.”

A curriculum for changing times

In preparation for the 2020-21 academic year, an innovative 'Blended Curriculum' was developed for teaching across the institution. The aim was to ensure that the high-quality RAU learning experience was maintained via a combination of online and face-to-face teaching while conforming to government guidelines in relation to Covid-19.

How was our Blended Curriculum developed?

An iterative process was adopted by the 'Online Learning & Assessment' (OLA) group working closely with academics and student representation. The model has drawn upon educational literature and research as well as examples from across the Higher Education sector.

We held a 'Show & Tell' event in July for lecturers and representatives from partner institutions to launch the blended approach. The event included a showcase of online activities designed by our academics specifically to promote student engagement with learning e.g. using videos and other online resources, case-based learning, quizzes, eBooks, critiquing papers, etc.



What is the Blended Curriculum?

The structure of the blended approach is best explained by 'A student's week at the RAU'. The week starts with an online introduction from the module leader, followed by online pre-recorded lectures and a range of other online activities specifically designed as part of the module content to help students prepare for, and get the most from, the face-to-face seminars at the end of the week.

What are the benefits of the blended approach?

Research studies across multiple sectors have reported many benefits for students including better engagement with learning, greater flexibility

and improved outcomes. Student feedback suggests that our Blended Curriculum has been well received and is delivering the expected benefits.

We continued to gather feedback and will capitalise on the opportunities presented through a blended approach as well as identifying further innovations to enhance the learning experience for all students.

Extending our global reach

We already have a strong reputation for fostering partnerships with some of the world's leading businesses, government bodies and organisations in the agritech sector.

Our intention is to expand this further, providing students with a breadth of academic and professional opportunities globally.

We have recently been successful in a bid to secure funding for GREAT scholarships, in collaboration with the British Council. This will enable us to offer scholarships to taught postgraduate students from India, Indonesia, Kenya and Mexico. All of our students benefit from programmes like this, as they share their different world experiences in their particular disciplines.

In September this year, we were also delighted to announce a major Joint Institute with Qingdao Agricultural University (QAU) in China which will help to expand transnational higher education in the land-based sector.

In a very competitive process, the RAU/QAU Institute was one of only 11 that were selected by the Chinese Ministry of Education to be established this year. In fact, the RAU is also the only small specialist university in the UK to have established a Joint Institute with endorsement from the Chinese government.

Named 'The RAU Joint Institute for Advanced Agritechology at QAU', this partnership will see double-award degrees offered across four BSc (Hons) programmes; Agriculture; Environment, Food and Society; International Business Management; and

Food Production and Supply Management. The degrees will be delivered at the QAU campus, with students being taught in English by both RAU and QAU academics.

The Vice-Chancellor remarked:

"The ability to share insight, knowledge and expertise across global boundaries is vital if our graduates are to provide the solutions needed to tackle key emerging issues and shape the future of sustainable food production in the face of climate change."

The timing, as Covid-19 heightens awareness of such major issues as international food security, global food supply chains and the interdependence of agribusiness in today's world, undoubtedly provides us with a platform through which we can make a sustained contribution to improving people's health and welfare, on a global scale.



Find out more about the GREAT scholarships online: greatbritaincampaign.com

Student experience during Covid-19: A year like no other

To say 2020 didn't go as planned is something of an understatement. The pandemic saw the RAU pivot to online academic delivery and assessment and sadly led to the postponement of the many activities marking our anniversary.

Graduation too had to be postponed. But what characterised what came next was a huge degree of classic RAU resilience and resolution, as the community looked to welcome our new and returning students back to an adapted campus, with new ways of working, to make our campus the safest, but still the most sociable and supportive, possible environment.

With as many activities as possible planned open air, to inhibit the risk of Covid-19 spread, the Student Union spent the summer organising activities to be sited in a 'Bubble Village' on Bledisloe Field, which was the central event arena. The SU booked 15 separate tents – or 'pods' – which would, in accordance with

the law, each be allocated to 'households' of up to 30 students living on campus. They organised a variety of entertainment which would be hosted in the Bubble Village during the daily induction programme and right into the evening throughout the week. The team was, rightly, incredibly proud of the variety and quality of provision, especially as many other university Student Unions didn't plan any social activities for their new cohorts. Then at the eleventh hour, just a few days before Welcome Week, new regulations threw a curveball. The Rule of Six led to a frantic and stressful few days (and sleepless nights) as the team had to scrap its plans and start again. With live entertainment no longer permitted, the Bubble Village

had to be re-imagined, with streamed entertainment on a big screen and an increased number of socially distanced groups, some located in the 'pods', with others in additional 4m carpet squares bordered with bunting. This meant everyone who wanted to attend could be accommodated, whilst adhering to the new law.

Students entered the Bubble Village via a one-way system, were registered for track and trace, and had their temperature taken before being allocated to a pod, each of which was equipped with its own table, lighting, speaker (to avoid the need for amplified music across the site), hand sanitiser and cleaning materials. In their welcome information, all new students were asked to bring along their own camping



chair whenever they used the Bubble Village to help keep touchpoints to a minimum.

Events started on Monday evening with a DJ streamed via a live internet link – from the SU Office. The induction programme included an online session on 'Getting to know your SU'; a pre-recorded video from the Police about road and personal safety; a welfare presentation via Zoom, and a Cirencester orientation film presented by the SU President.

Tuesday night was a fancy dress 175 'Royal Garden Party' to celebrate the RAU's birthday – and all the students were provided with a picnic box of food sourced from our alumni and local suppliers. This was followed by another DJ session, this time streamed live from the DJ's garden in Purton, about six miles up the road, complete with dancing girls!



There was a Quiz Night on Wednesday which included an RAU themed round, which generated some great answers to the question 'What was the Vice-Chancellor's first job?' Thursday evening provided some more music and Friday night's entertainment was a comedian, streaming from his lounge in Hull. The finale to the week on Saturday was an open-air movie night, with popcorn laid on.

As Welcome Week came to a close for another year, and learning and teaching began in earnest, the Student Services team started to work a rota to ensure support was available at any time and that those students having to self-isolate felt well looked after. Student peer supporters known as STARs (Support Team Advisor Representatives) made regular 'check-in and chat' calls to make sure they had all they needed. Students isolating off campus even had their shopping

delivered. There was also access to a 24-hour Assistance Service, and the STARS led virtual drop-ins and physical drop-ins in halls of residence.

The SU continued to offer a great, Covid-safe student experience throughout the term. Keeping the offering adaptable to the many Government changes, and interactive and relevant enough to keep students interested. From weekly quiz nights, to live fitness sessions, to 'cocktail masterclasses', all online, the RAUSU has relished the new student experience challenge, while listening to student feedback and trying to keep that RAU spirit running high through all the activities.

Everyone is very much looking forward to times ahead and being able to hold parties again, but at the time of writing with a vaccine on the horizon, Student Services, the RAUSU, and the students themselves, are embracing the storm and staying safe.

INDUSTRY & LEADERSHIP



FRANK GARNER OPENING THE NEW
RAC MACHINERY WING IN THE 1970s.



Bledisloe Lecture

“The next decade is key for biodiversity, climate change and humanity” audience hears.

The role that food, farming and forestry must play in meeting the challenges of climate disruption, nature depletion and human health was explored in an enlightening discussion at our annual Bledisloe Lecture.

Speaking to an online audience of 275 people, Chief Executive of the Soil Association Helen Browning, said: “We have certainly got to change the way we are farming. Farming is right at the heart of the problems we face now, and it needs to be at the heart of the solution - that is a big shift for us to make over the next decade.

“We know we have got this one decade to turn the oil tanker around. It’s probably last chance saloon for humanity to get this stuff right.”

In a novel format for the lecture, Helen was in conversation with eminent broadcaster, writer, historian and RAU alumnus Jonathan Dimbleby (1965), himself once an organic farmer. Helen discussed the responsibility that agricultural and food systems have for greenhouse gas emissions, ecological damage and the ability to provide healthy diets for the population.

“We have got to change quite rapidly and organic farming is a big step in the right direction. The principles of organic farming... of nature-friendly rotational, regenerative and agroecological farming, recycling nutrients, looking after animals well, having less of them probably but actually farming them in a different way... are going to need to catch fire and be taken up by all farmers, even if they do not become certified organic,” she said.

The prestigious lecture is named after eminent RAU alumnus Charles Bathurst, the first Lord Bledisloe (1867-1958), one of the staunchest supporters of the Royal Agricultural College (as it then was). It was held online for the first time in its history on Wednesday evening (25 November) due to Covid-19 restrictions.

The audience was fully engaged in the hour-long discussion, with students able to put their questions to Helen in a live ‘Question Time’ format, chaired by Jonathan, before the Q&A was opened up to others.

Questions poured in covering a wide range of topics including; the financial implications of going organic; the growth of organic retail; the



Helen Browning
Chief Executive of the Soil Association



Jonathan Dimbleby
RAU alumnus (1965)

role of certification bodies; how consumers can encourage a transition to regenerative agriculture; genetic modification and incentives for tenant farmers.

The Vice-Chancellor commented: “The Bledisloe Lecture is the most important lecture in the RAU calendar, and it was a great privilege to welcome Helen and Jonathan to discuss a subject that they both care passionately about. The fact that it was held online, enabled a large audience to engage in a wide-ranging and immensely informative discussion about issues that lie at the heart of sustainable food production and land management.

“It is crucial that pressing challenges around climate change, biodiversity, the environment, food production and supply chains are addressed by governments, industry and each one of us as global citizens. As we mark our 175th anniversary this year, our educational programmes, applied research, thought leadership and purpose “To care for the land and those who depend on it”, have never been more relevant.

“Our graduates will be needed more than ever in the years ahead to help industry navigate the

critical and sustainable change that is required. I hope that our students left the lecture inspired and excited by the possibilities ahead of them and the opportunities they will have to make a real difference in their ensuing careers.”

Lord Bathurst, the University’s Vice-President, whose family provided the first land on which the College was built gave a vote of thanks and an uplifting closing address.

The Soil Association has recently published Grow Back Better, a new route-map to reinvigorate UK food, farming and land-use post-Covid-19.

The Bledisloe Lecture was sponsored by:



Scan the QR code (right) with a smartphone to open the Lecture on youtube.



Covid-19: A catalyst for greater food provenance

Professor Louise Manning
Director of Knowledge Exchange

It seems strange to reflect back to January 2020 when I spoke at the Foodservice Packaging Association conference in London about the change in single-use packaging legislation and the risk of viral contamination of uncovered food, reusable containers or food surfaces.

The virus I was talking about then was norovirus. At that time Coronavirus-2019, now shortened to Covid-19, was only beginning to gain international attention. Fast forward to now and the physical and social restrictions that have been implemented to address the continued rampage of Covid-19 across the world have caused us to pause and reflect on our food systems and the way we as both citizens, and as consumers interact with them.

The reflection on our profligate use of plastic, food waste, climate change, shocks, vulnerabilities, risk and resilience is profound. Food service suggested then to be 30% of food supply, disappeared overnight. Initially, physical

retail food stores struggled to fill the void. For many organisations supplying food service, their market was temporarily or is permanently lost. This brittleness across our food supply required business survival tactics to be deployed.

One aspect of business survival is agility. Many food supply businesses have had to pivot their business model to survive. Time was/is of the essence.

We see fantastic examples of businesses, large and small, forging new paths. Many of them focused on “direct to customer” or DTC for short. DTC is not new. Box schemes, on-farm vending and online shops for collection or direct supply have been around for a while, but the sea change in the last six months is incredible. DTC is not only about local food, it is about so much more and the sustainable value proposition created for customers. These are difficult, tragic times, but Covid-19 has proved a catalyst for business opportunities too.



Food Commission Report

Professor Tom MacMillan
Elizabeth Creak Chair in Rural Policy and Strategy

As the UK adjusted to our first lockdown in March, the RAU made headlines around the world by finding that just 9% of people wanted everything to go back to how it was before the pandemic. The survey of over 4,000 adults, commissioned from YouGov, heard people say they were noticing cleaner air and wildlife, throwing away less food, and trying to buy food directly from farms in unprecedented numbers.

We designed this survey in our role providing expert advice to the Food, Farming and Countryside Commission (FFCC), an independent inquiry that made recommendations in 2019, and is now helping to see them into practice.

It was among the first research to reveal the public's appetite to 'build back better' from the pandemic. Many of the early signs detected changes in attitudes and behaviour, for example on food waste, have been confirmed by further research.

We followed this poll with a second study, asking food, farming and rural professionals what they had learned from lockdown. Nearly 400 responded, including farmers and landowners, supermarket bosses, small businesses, campaigners and government officials.

This revealed an even stronger vote for change, with 80% saying they wanted



Professor Tom MacMillan

“most things to be different” in the recovery and not a single respondent wanting everything to go back to how it was before. How should things change? While many noted that food supplies had proved resilient, 90% supported investment in shorter food supply chains and more diverse UK food production. The same share stressed the need for better rural services, especially broadband and connectivity.

How will the mood change as the pandemic rolls on? Will more lockdowns sap or strengthen this demand for change among the public and professionals. And will a deepening recession make transformative change more difficult, or more inevitable?

Farmers were of course already facing extraordinary change even before the pandemic, driven by post-Brexit trade and payment shifts, and the move to net zero. How to make this a just transition is the focus of our ongoing work advising the FFCC.

You can find out more at
www.ffcc.co.uk



Sustainable land management in developing countries

Dr David O'Connor
Lecturer in Sustainable Land Management



Polluted agricultural soil represents a serious threat to vulnerable populations in rural areas of developing countries. Where land is severely degraded, intervention through remedial action is needed, but we know that such action will ultimately only be effective if it is performed in a sustainable manner.

Research on sustainable land management in developing countries has included the development of remediation assessment approaches for the agricultural land setting, with special consideration of soil health. An in-depth life cycle assessment was conducted for the remediation of agricultural land in an arid region of northern China, finding that for remediation to be sustainable, far greater attention to the socio-economic aspects needs to be paid. Another study revealed that socio-economic aspects of remediation can be categorized as (1) community inclusion, (2) economic gain, and (3) health, safety, and welfare.

To better understand Chinese farmers' perception of land degradation issues and their corresponding adaptation behaviour, a theoretical framework to explain the interactions among awareness, perception, mitigation, and adaptation was put forward. It was found that the farmers were often aware of land degradation issues, but they lacked in-depth knowledge about the situation and sophisticated adaptation methods.

This may be causing environmental displacement and accelerating urbanization, highlighting the urgent need for sustainable remediation of polluted agricultural soils. In summary, successful stewardship of agricultural land will only be achieved by the adoption of sustainable, holistic and integrative land management approaches that incorporate environmental, economic and social values.



Blink and you'll miss it

Dr Andrew Hemmings
Associate Professor of Equine Science



From a practical standpoint, why do we keep horses? Compared to livestock species they don't produce milk, food or other commodities. This is a somewhat rhetorical question of course, as the horse racing industry in the UK alone is worth £3.7 billion towards our GDP.

Moreover, those who keep any type of horse will be aware of the leisure and mental health benefits that go hand in hand with this species. Following on from this, without a trainable temperament and suitable behavioural profile horses and ponies will be of little use to us and can even be quite dangerous. Temperament and behaviour constitute the most important production trait where owners and breeders are concerned. It is on this rationale that research has been based over the past decade into developing non-invasive tests of brain function which predict a range of behavioural traits including anxiety, docility, impulsivity and compulsivity.

The behavioural test that has recently shown most promise is Eye Blink Rate. Fluctuations in a key behavioural neurotransmitter (brain signalling molecule) called dopamine lead to alternations in blink frequency. Findings show that horses prone to anxiety demonstrate elevated blinking, whilst the more docile animals display lower blink rate values. This should allow

pre-purchase examinations of temperament using this simple and easy to apply method. More recently, blink rate has been utilised as an indicator of the equine cognitive profile. In collaboration with Aberystwyth University and Cambridge Neuroscience, training has been developed for the world's first fully automated system for measuring impulsivity and compulsivity, two key aspects of cognition which apply to horse management and training.

Animals that fit into the high blink rate category have been shown in our studies to be significantly more impulsive and compulsive. In practical terms, an impulsive horse is more likely to react suddenly, without the riders commands. On the other hand, compulsive animals are much harder to train as they tend to be more prone to developing repetitive habits and rituals which impede advanced learning.

So where does the future lie in this topic area? In the last six months a genetic screening tool, which to date has been effective in the prediction of animals with impulsive and compulsive tendencies, has been developed. Therefore, with behavioural and genetic probes combined, the RAU will be in a position to offer breeders a much more strategic and waste-free route to horse production.

Worm watch

Dr Felicity Crotty
Lecturer in Soil Science and Ecology

Dr Felicity Crotty joined the RAU in 2018 as a Lecturer in Soil Science and Ecology. She has been researching soil biology and soil health for the last twelve years focusing on understanding the linkage between sustainable agriculture and soil health.

Utilising her expertise within soil biology (earthworms, springtails, mites and nematodes), and how agriculture has an impact on this in relation to soil quality, physics and chemistry, within both the livestock and arable sectors.

Earthworms are often used as the emblem of soil health, having a large effect on the physical soil environment – through burrowing, mixing the soil, increasing the amount of water infiltration and aeration within the soil profile. Deep burrowing earthworm species leave “casts” on the soil surface (earthworm poo), this is soil and organic matter that has been processed by the earthworm changing its chemical composition, redistributing nutrients from depth to the soil surface. The UK Government have included the aim of “improving soil health” in their 25 Year Environment Plan. Thus if earthworm numbers were to increase, the health of the soil is likely to as well - highlighting the national importance of earthworm activity.

Understanding how agricultural management affects earthworms and how they differ spatially within a field and across farms is key to enhancing earthworm population and consequently soil health.

One of the projects currently being investigated is the development of image recognition algorithms (AI and computer learning) to estimate earthworm activity within agricultural soils. Traditionally earthworm population monitoring is time-consuming and inaccurate. Citizen science monitoring programs have been trialled to reduce costs, but have not been extended across the country. Monitoring the number of earthworm casts on the soil surface as an indicator or the earthworm population below ground will increase our understanding of soil health, allowing large areas to be monitored. This research has also the potential to be extended as a farmer environmental monitoring tool, through the development of a smartphone app.



Grazing and soil biodiversity

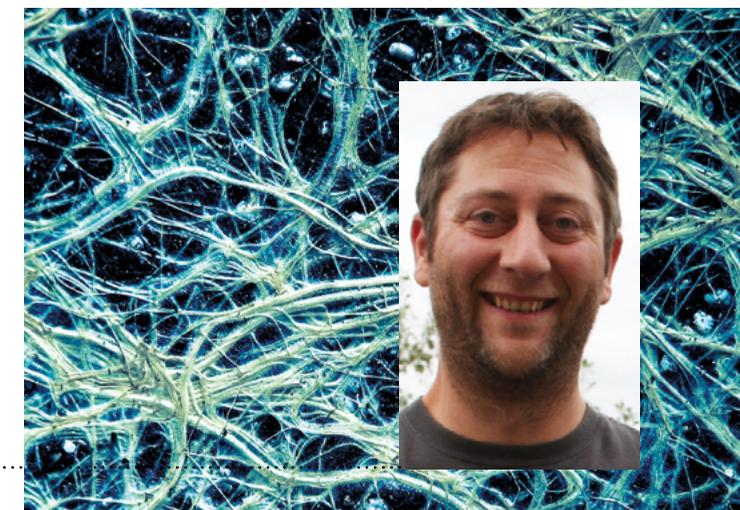
Dr Philip Staddon
Principal Lecturer in
Environment and Sustainability

A three-year project based in China, leading to the successful completion of a PhD by Maede Faghihinia, revealed some intriguing points about grazing impacts. Impacts of grazing have generally been studied by comparing grazed and non-grazed sites, but here the focus was on the intensity of grazing or livestock stocking rate.

The work was carried out in a large scale field experiment in Inner Mongolia which included seven different grazing intensities ranging from 0 to 9 ewes per two-hectare plot. The experiment had been running for 13 years. This timescale is important as it may take several years for ecological changes to become evident.

Efforts were focused on mycorrhizal fungi, which are symbiotic fungi forming associations with plant roots. Most plant species (around 90%) are mycorrhizal and the symbiosis involves movement of carbon from the plant to the fungus and movement of phosphorus from the fungus to the plant. The fungal partner produces extensive hyphal networks in the soil to take up nutrients and colonises plant roots where the exchange of products occurs.

We showed that the density of external mycorrhizal hyphae in the soil was strongly impacted by grazing and that it decreased as grazing intensity increased. This would mean



that the capacity for the fungus to obtain nutrients and translocate them to the plant partners would be decreased. The mycorrhizal fungal colonization within roots was however, unaffected, which would mean the ratio of these two fungal components (hyphae in roots vs hyphae in soil) would be modified leading to changes in the functioning of the symbiosis. Furthermore, this decrease in mycorrhizal hyphal density in the soil could have large implications for the potential for the more heavily grazed soils to sequester carbon.

Indeed, mycorrhizal fungi are a substantial pathway for carbon movement to soil and they also produce compounds which are slow to decompose thus facilitating carbon build-up in soil.

Further data also showed that some of these relationships between grazing intensity and mycorrhizal fungal abundance might be humped shaped, which would imply that there would an optimal level of grazing to maximise benefits to soil biodiversity and carbon sequestration. This has clear implications for two global challenges: biodiversity loss and climate change.

Evolution, not revolution

Emily Norton, Head of Rural Research, Savills

This is the first time in 50 years that Westminster/England has developed its own system of domestic agricultural support. Coming over two years after the Agricultural Transition period was first announced, the detail in this announcement is a significant step forward. The government has now set out how much BPS Direct Payments will be cut each year between 2021 and 2024, and how this released money will be used through new grants and schemes to help agriculture become more productive and prepare for there being no direct subsidies from 2028.

There is more detail on what the Environmental Land Management (ELM) scheme will look like, as well as information on the funding available throughout the transition. Businesses will now be able to plan towards their future, with greater certainty of what lies ahead for England's agricultural sector. The Agricultural Transition period began on 1 January 2020 and ends in 2027. In introducing the Plan, Secretary of State George Eustice explained that this transition will not be an overnight revolution, rather an evolution from an old system to a new system.

This much anticipated Agricultural Transition Plan offers the sector a better indication of what lies ahead, farmers can now budget for 2022-2024 with more certainty and know a little more about future schemes which to date have existed in name only.

However, it is not the end of the story, there is a lot of detail yet to be decided and shared, and big questions still to be demystified in how the plethora of policy facing the rural sector will interact to achieve the goals government has committed to. Defra has committed to multiple consultations on the detail behind schemes, so their final form can still be shaped by the farming industry.

The upcoming consultations will cover support for new entrants, animal welfare, slurry, delinked payments, lump sum exit scheme, pesticides, dairy contracts, and producer organisations. It is important to remember that anticipated income under ELM will have a similar profit margin as Countryside Stewardship; it should not be treated as a successor to BPS income within farm budgets.

In spite of all of the dramatic changes that the Agriculture Act signals, it seems that there is no shortage of new entrants wanting to get into farming. The challenges ahead are not insurmountable, but they will require entrepreneurial thinking and bravery.



Turbulence and opportunity

James Pavey, Head of Rural Business & Estates, Irwin Mitchell LLP

Covid-19, Brexit and climate change will have many economic and social implications: some painful, some overdue, others welcome, many positive. As advisers to land-based rural businesses, we predict the following will be high on the list.

More land will come to market.

The current market in agricultural land is relatively small and many transactions are "off-market". Debt finance has been available at low levels for the last decade and the 2016 Brexit vote caught lenders unawares. The Basic Payment Scheme (BPS) and its predecessors have kept many smaller farm businesses in the black. BPS begins to taper from 1 January 2021 down to nothing in 2028, and many may take the one-off lump sum payment, rather than struggle to unlock subsidy under the new Environment Land Management Scheme (ELMS), providing "public benefits for public goods".

All that militates towards more agricultural land coming onto the market, whether it is land which attracts farmers and growers, or housebuilders or lifestyle buyers. With increased landholdings, there are likely more opportunities for diversification.

The end of Agricultural Property Relief (APR)

Its demise has been predicted for years, but it is an easy target for a Treasury paying for Covid-19. Though the yield to the Exchequer from its abolition would be relatively small, APR looms large in generational planning for land-based businesses.

Business Property Relief for IHT is much less vulnerable. An increased reliance on it is likely to drive diversification and entrepreneurial activity, as well as taking land back in-hand.

A culture change regarding public access?

Lockdowns and staycations have seen a significant increase in the use of public rights of way, and, encouraged by mapping apps which do not discriminate between paths and public paths, a significant increase in trespass. With changes to working practices, selling, and letting agents are seeing a greater demand for rural living. ELMS, when fully on stream in 2024, will promote permissive access in return for payment. The 2026 extinguishment of unrecorded public rights of way hangs over landowners and user groups alike: will the Government bring it into force?

So, public access will be a hot topic for the 2020s. Will the ability to unlock subsidy and the potential to develop diversified tourist and leisure businesses based on access see a change in approach to this totemic issue for landowners? Plenty can be done to avoid public rights being acquired. Insurance and exclusion notices can protect against claims. Will that, however, be enough to overcome deep-seated attitudes?

We look forward to exploring these and many other topics as part of our collaboration with the RAU and its alumni during 2021.



Making headlines

RAU research and policy thinking is big news

PANDEMIC DISCUSSED ON HONG KONG'S PHOENIX TV

Phoenix TV in Hong Kong interviewed Professor Louise Manning in early April during the first lockdown to discuss the food supply and food security during the pandemic. Phoenix TV was especially keen to hear Louise's views on the immediate impact of Covid-19 on UK agriculture and what it might mean in the longer term for the industry.

BIG CATS IN THE UK

Dr Andrew Hemmings has regularly been in the news with his research on big cats in the UK. You can see more about his work in this area across the media including national press such as The Daily Mail, The Times, and more locally on Gloucestershire Live. Dr Hemmings' study has identified five animal carcasses with tooth imprints on their bones that could only be made by a non-native cat the size of a leopard or puma.

RAU PARTNERS IN THE FUTURE OF FOOD AND AGRICULTURE

Professor Tom MacMillan was instrumental in the RSA and the Food and Farming Commission's 'Our Future in the Land' report, warning that: "Our own health and the health of the land are inextricably intertwined [but] in the last 70 years, this relationship has been broken." The report called for a radical change to production practises and values, warning that the true cost of cheap food was ill-health and poverty. The report was featured in a range of national and internal press.

ORGANIC FARMING ON CHANNEL 4

Laurence Smith from the School of Agriculture discussed organic farming with Jimmy Doherty in 'Can Jimmy Save the Bees?' which aired on Channel 4. Laurence's research on organic farming and greenhouse emissions both at the RAU and in his previous role at Cranfield University meant that he was well placed to give an expert view.

TOP EDUCATION AWARD FOR BUSINESS SCHOOL LECTURER

Dr Inge Hill, Senior Lecturer in Business Strategy at the RAU has received the Education Practice Award from the British Academy of Management for her programme entitled: 'Pop-up Shops for Increasing Employability - enterprise for all through learning via doing'. The award is designed to recognise individual or team initiatives that enhance management learning and education.

CONSPIRACIES DECODED

Professor Mark Horton has taken part in several TV series around the world. 'Conspiracies Decoded' looks at popular conspiracy around Emilia Erhart. Mark also appeared on 'Enslaved' with Samuel L Jackson in two episodes looking how trans-Atlantic slavery became integral to wealth creation, and also at how the slave trade ended. The Enslaved series in which Mark appears (in episodes 2 and 4 on the BBC) has been sold to 150 countries around the world.

Our timeline...

175 years at the forefront of agricultural education



175 YEARS



1842
Conceived by
Founder Robert
Jeffreys Brown



1845



Queen Victoria granted the Royal Charter to the Royal Agricultural College (RAC)



1931



Professor R ("Bobby")
Boutflour becomes
Principal of the College



1982

Prince
of Wales
became
President
of the RAC



1984

The first modern degree programme was launched - BSc (Hons) in Rural Land Management

2001

First received funding from the Higher Education Funding Council for England (HEFCE)



2013

Privy Council awarded the College full University Status



2016

Appointment of Professor Joanna Price as first female Vice-Chancellor



2017

Awarded TEF Silver. The first phase of our Farm491 project opened at the University's Harnhill Farm



2018



Launched our state-of-the-art £4.2 million Alliston Centre.



2020

RAU obtains consent from the Chinese Ministry of Education to open the RAU Joint Institute for Advanced Agritechology at Qingdao, China

ENTERPRISE



BUTTER MAKING AT DAIRY COTTAGE.

THE Award finalists 2020



Our growing reputation for entrepreneurial success has been recognised in the annual Times Higher Education (THE) Awards 2020. The University was one of only six finalists in the 'Outstanding Entrepreneurial University' category of the 16th THE Awards, widely known as the "Oscars of higher education."

The biggest celebration of UK higher education in the calendar, the THE Awards recognise outstanding work across a wide range of university activity, covering leadership and management, professional services and academia.

Our Enterprise Programme provides a supportive environment for students to develop their enterprise skills and business ideas via its Think, Try, Launch, Grow framework of support. The Programme has been supporting students for over 13 years to get involved with enterprise to explore and develop their business ideas. Also, the University provides access to two live student-led social enterprises Cotswold Hills wine and Muddy Wellies beer, both stocked widely in retail outlets including Mid-Counties Co-Op and Waitrose. Proceeds from these social enterprises also contribute to the proof of concept funding available to students wanting to test their ideas.

Dr David Bozward, Head of the School of Business and Entrepreneurship, said: "We were delighted to have been shortlisted for 'Outstanding Entrepreneurial University' in these prestigious THE Awards. As a university, we have developed close links between our degree curriculum and the student enterprise activities which means students

develop a more in-depth understanding of entrepreneurship. A good example of this is our BSc (Hons) Rural Entrepreneurship and Enterprise degree which supports students who have a business idea as well as those who want to take over an existing business."

In 2019, we were awarded the title of 'Enterprising Learning Provider of the Year' at the Small Firms Enterprise Development Initiative (SFEDI) and IOEE awards and recognised as a Enterprising Learning Provider of the Year.

Admissions Teams win Outstanding Contribution to HE.

Our Admissions Team, along with all Higher Education (HE) Admissions teams across the sector, won the Award for Outstanding Contribution to HE for how they worked so well during the summer exam results period by dealing with very anxious and distressed applicants and their parents.

Jennie Stewart, who led our Admissions Team during this difficult period, commented: "Our own Admissions Team were exemplary during this very difficult year, being exceptionally calm and reassuring with the applicants in the face of so much uncertainty around the changing exam result algorithms and decision-making methods."



Grand Idea winner 2020: Veg-Tech

Our Grand Idea competition is now in its 13th year, but for the first time in its history, the Dragon's Den-style event was held 'virtually', (on 1 May) with students pitching their business ideas to a panel of expert judges over Zoom in a bid to secure £2,500 of investment.

Joining the event online, the panel of judges included: Sam Pullin (RAU Enterprise alumnus and Co-Founder Beaufort & Blake); Jamie Murray Wells OBE (Head of Retail, Google); Christine Cross (RAU Honorary Fellow and Retail Consultant); and the Vice-Chancellor.

Luke, 19, who is in his first year studying agriculture won the top prize in May 2020 with his business Veg-Tech which explores the practicalities of commercially farming hydroponics. Hydroponic systems are where plants are grown vertically, in buildings without the need for soil or sunlight.

Commenting on Luke's win, Chair of the judging panel Christine Cross, said: "The Grand Idea gives budding

student entrepreneurs the chance to demonstrate their technical and creative skills plus business acumen real-time! This year all four finalists have businesses which are very much up and running, despite coronavirus, and impressed the judging panel with their enterprise, enthusiasm and social purpose."

Commenting on his experience, Luke said: "Winning will allow me to take my business Veg-Tech to the next level, developing a more sustainable and profitable agricultural enterprise."

The runners-up this year were student-duo Liz Boher and Fergus Tribe with their business BE Country, a specialist country gifts business based in Somerset. Liz, who is studying Business and Fergus who is studying Rural Land Management have won £500 to invest in their business.

The Grand Idea 2020 was sponsored by law firm Harrison Clark Rickerbys and insurance and financial services company Lycetts.



"The winning entry Veg-Tech epitomises the very best of the RAU Enterprise culture. Agri-tech innovation with a tangible and profitable growth plan, a quantifiable environmental impact, and a young man whose enthusiasm and knowledge the judging panel just wanted to bottle!"

RA FARM 491

AGRITECH INNOVATION & INCUBATION

Update



At Farm491, we have been guiding companies through the challenging period of Covid-19, whilst also learning to adapt ourselves.

Covid-19 brought a set of challenges for our members as well as the Farm491 team themselves, who have become familiar faces on the agri-events and shows circuit. Our usually full programme of seminars and events, both on-site and nationwide was suddenly put on hold, with no confirmed date for the return of in-person events and conferences.

From March, we made the move to put all of our events online, offering a selection of webinars on a wide range of topics from legal and financial advice, to more holistic subjects such as 'How to Lead Through Crisis' and 'Social Media Hints and Tips' for both start-ups and established businesses.

We also moved our bi-monthly 'Inspiring Agritech Innovation' online, offering entrepreneurs interested in the future of food and farming invaluable insights into how to succeed in the sector. Our Innovation Specialist, Sarah Carr leads these sessions and many of the attendees go on to become members. Farm491 strengthened our academic relationship with the RAU through a series of six webinars delivered by Professor Louise Manning, focusing on 'Bad Behaviour' in food

supply chains, data led decision making and food fraud. We have a number of exciting collaborative projects with the university, including engaging with students who are a part of the RAU'S new MBA programme, Innovation in Sustainable Food and Agriculture.

In January, we will be announcing the winner of our Challenge Prize competition in association with BASF, 'Digging for Innovation', inviting ideas from innovators who are working on tools and approaches across the agricultural sector that address the issues between soil health, climate change, productivity and biodiversity.

We are inviting alumni to join our farmer network which will work with innovators to advise on the needs of the sector and potentially trial out new products. If you work in either arable or livestock industries, we would like to hear from you.

Please email
tara.dickinson-barry@rau.ac.uk
 for more information.

Introducing the John Alliston Prize for student enterprise



Many among the RAU community will remember with great fondness the late Professor John Alliston, former Dean of the School of Agriculture. This year, we are launching a new prize in John's name, funded solely through donations from alumni.

As an addition to the portfolio of opportunities available through our award-winning RAU Enterprise and Entrepreneurship Programme's Grand Idea initiative, the John Alliston Prize of £500 will be awarded annually to the best student enterprise idea in Agriculture and/or Agri-tech.

As many will recall, John was a consummate networker and a generous and wise mentor, influencing the lives and careers of many.

It's fitting then, that as well as the cash prize to take their ideas forward, the winning student will be given a mentor to work with as their business develops.

Katy Duke, Head of Enterprise, welcomes this new award: "It is an honour to be able to add a prize given in John Alliston's name to our enterprise provision at the RAU. John was a great advocate of encouraging and supporting young people to pursue their dreams of starting an agricultural business and through this prize, and the support of the Cirencester Growth Hub housed within the Alliston Centre we will be able to continue to support the next generation of budding entrepreneurs."



Cotswold Hills: A blossoming reputation

As January fog settles over our scenic vineyard situated in the wintry, yet beautiful Cotswold landscape, it's the perfect time to reflect over the past year and enjoy the fruits of our labour. There have been many successes since the starting of the Cotswold Hills project in 2016 when we took the tenancy of our 2.6-hectare vineyard. In the past four years Cotswold Hills has been able to create a finely crafted array of award-winning wines and products all based on our core belief of sustainability,

while also allowing students of the university to gain a range of experiences and opportunities within the wine industry.

The grape varieties grown at our vineyard in Down Ampney include Ortega, Bacchus, Chardonnay and Seyval Blanc. These grapes are then carefully handpicked before being transported to the winemaker, and alumnus of the RAU, Martin Fowke (1984) at the Three Choirs in Newent, Gloucestershire, where our wines are then produced. From blends of our grape varieties, we have created a range of relished and award-winning products including our wonderfully zesty dry white wine which has been referred to as a "fruity, dry white wine with aromas of peach and country hedgerows". This white wine is now available as a canned bubbly alternative, offering a refreshingly fizzing white wine with slight and subtle notes of apple. A new

addition to our Cotswold Hills repertoire is an exquisitely crafted still rosé from our Rondo and Oretga grapes which offers summer notes in every sip.

Our award-winning wines are now stocked in over 120 outlets, including 87 Mid-Counties Co-Op stores across five counties. Nicky Wildin, Buyer at Mid-Counties Co-Op states, "We're proud to showcase new food and drink entrepreneurs across our region - especially young people - which is why Cotswold Hills was such a good fit for us." He adds, "The branding and the name define the uniqueness of the brand, culminating in an eye-catching and memorable label. The taste is extremely well balanced, delicious chilled, and a perfect accompaniment to a Christmas dinner".



You can purchase Cotswold Hills by the case online via: www.cotswoldhills.org.uk



175
YEARS

Special limited edition 175th anniversary gin

This year, we introduced two tipples to toast our 175th anniversary. As well as our anniversary wine from our own student-led social enterprise Cotswold Hills, our friends at British Polo Gin have worked with us to produce our very own limited edition gin. The gin is made in the Cotswolds with 100% organic ingredients and quadruple distilled. It's light and refreshing with a smooth and elegant mouthfeel, laced with elderflower, orange peel and angelica.

Just around the corner, is an RAU sloe gin. Students have been out foraging for sloes which will be blended with aromatics such as vanilla, clove, orange, cinnamon and cardamom. Perfect for the winter months.



www.britishpologin.co.uk

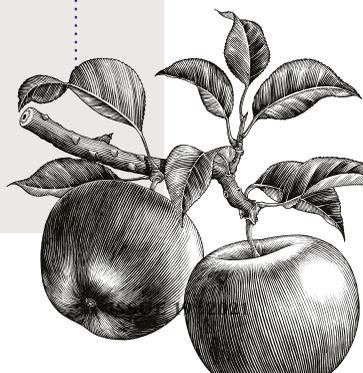
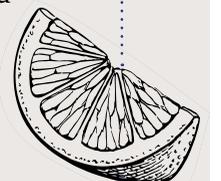
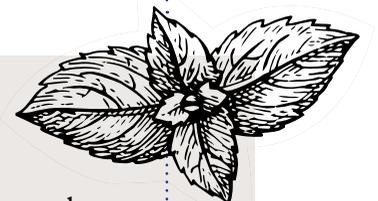
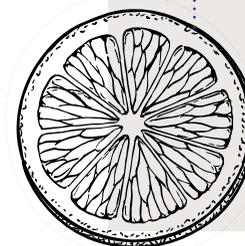
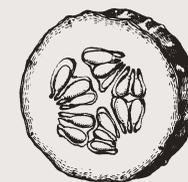
Treat yourself to a RAU 175 celebratory cocktail!

This is a West Country take on a classic Southside Fizz and the French 75, using the RAU 175 Botanical Gin devised by our Head of Retail and Catering Ryan Hanson.

- 50ml RAU Botanical Gin
- 20ml lemon (or lime juice)
- 15ml sugar syrup
- 15ml elderflower cordial
- 65ml sparkling apple juice

Garnish with fresh mint and/or cucumber.
Shake gin, lemon juice, sugar syrup and elderflower cordial.
Pour into ice laden glass.
Charge with apple juice and garnish.

To be drunk long.



RESILIENCE & SUSTAINABILITY



KING GEORGE VI PLANTING A
TREE WITH PRINCIPAL, ROBERT
BOUTFLOUR TO CELEBRATE THE
100TH ANNIVERSARY OF THE ROYAL
AGRICULTURAL COLLEGE IN 1946.

Wild Campus

Creating a wildlife haven in Cirencester

We are proud to lead Wild Campus Cirencester; an exciting initiative that will transform wildlife habitats across an area approximately half the size of Cirencester.

Working in partnership with our neighbours Deer Park School and Cirencester College, the Wild Campus project will promote biodiversity across all three campuses and create a haven for bats, birds, and small mammals, as well as pollinators and their insect prey, plus a dark corridor for bats. James Hargreave, Wild Campus

Project Manager explains the aims of the Wild Campus to maximise ecological connectivity across the educational sites and surrounding area:

“The project will offer staff and over 4,000 students ongoing education opportunities on the doorstep”

“We will be rehabilitating land that has been ‘manicured’ for many years to achieve habitats with improved biodiversity. Between now and 2023, we will diversify 4 hectares of lawn, plant

1 km² of native shrubs and seed 3 km² of wildflowers. The surrounding area is home to eight species of bat that could benefit along with many other birds, mammals, and invertebrates.

A major element of the project will focus on creating dark corridors to connect bat populations and increase foraging opportunities, with lighting replaced or improved with directional baffles - in addition to the installation of 150 bat boxes.



“Between now and 2023 we will diversify 4ha of lawn, plant 1 km² of native shrubs and seed 3 km² of wild flowers. The surrounding area is home to eight species of bat”

James Hargreave, Wild Campus Project Manager

With Covid-19 travel constraints and the need to reduce our carbon footprint, developing and utilising natural environments on the doorstep has never been more important. Much of the changes will provide opportunities for involvement in design, practical implementation, monitoring and ongoing management.

James is supported by a small team of staff from all three educational establishments, all of which are encouraging the involvement of students and academic staff to

transform their campuses and better connect with nature. The project will offer staff and over 4,000 students ongoing education opportunities on the doorstep, as opposed to travelling to locations further away.

The project is part funded by the European Development Fund.



In association with:



A Research Campus for the University



When the Agricultural College was founded in 1845, its aims were twofold – to educate farmers in more efficient farming methods, and to undertake research to enable more food to be produced for the expanding populations in the towns and cities during the Industrial Revolution.



Since its foundation in 1845, the RAC (since 2011 the RAU) has contributed to agricultural research in the traditional way – interested and talented individuals on the staff developed an interest in a circumscribed subject and investigated it to the best of their ability using the capabilities of the time. Their contribution over time has not been insignificant. For instance, in the immediate post-war period, Bouffleur used studies on the College’s dairy herd of 13 cows to revolutionise the feeding of dairy cows enabling substantial increases in their productivity.

Sadly, the times when such significant advances can be made with such slight resources are substantially past. Consequently, during the latter part of the twentieth century, the College prided itself on

the quality of the education it offered and its knowledge exchange activities rather than the quality of its own research.

“To be a modern University in the twenty-first century, research is increasingly important”

By the time the RAU gained University status, the concept of the ‘well found’ laboratory being supported from Government grant funding had, alas, been abandoned, making it increasingly difficult for smaller teaching-focused Universities to establish and maintain the firm, supportive, research base necessary for research to flourish. The RAU’s submission to the last National Research Excellence Framework exercise (REF) in 2014 demonstrated the newly

formed University’s inability to rise to this challenge.

To be a modern twenty first century University with global reputation research is critical for many reasons; it attracts world-class academics and grants and government funding, informs the most up-to-date teaching and improves league table performance that influences student recruitment. In consequence, it was a major objective of the Vice-Chancellor appointed in 2016 to reverse this situation and establish research capability as a significant strand in the University’s operation. To achieve this the RAU has made several appointments, from professors to lecturers who have a global research reputation. In parallel, the number of research postgraduates from around the world continues to grow and

grant income has doubled in the last year. However, to establish an institutional research base, our academics must be provided with the facilities necessary for them to be productive.

The idea of a research campus has been born to transform our ability to undertake this cutting-edge research. We have the space to create an environment by reviving the old arboretum and gardens around the Garden House, and repurposing the ‘Food Centre’, a now redundant building, as modern research labs and a data centre. We have been given a modular clean lab that will house our new genetics facility next door and hope to invest in new analytical equipment, that are fit for modern science. The Garden House will become the University’s postgraduate centre, where students from around the world can work

productively and share ideas etc. Our ambitions go beyond just buildings, as perhaps the greatest challenge to UK agriculture at present is to re-configure the use of our existing landscape to best reconcile the social, political and production-based objectives of our time following Brexit and responding to climate change. To do this the University has plans to create a “Living Land Lab”- possibly the first in the world - where we will use our surrounding landscape (in cultivation at least since Cirencester was the second city of Roman Britain) for research innovations.

“Our ambitions go beyond just buildings to create a Living Land Lab”

Working with Farm491, we plan to use the space to offer it up to innovators with the opportunity to work with RAU academics to create new ways to deliver smart agriculture. Already we have several experiments ongoing in the Steadings – the field that is between Farm491 and main campus - and there are plans for future expansion.

In the same way as 175 years ago, the world now faces immense challenges and the land sector has to find solutions fast. These include global food poverty, climate change, loss of biodiversity, and sustainable recovery from Covid-19. Our research campus is the modern response to these challenges and will hopefully once again fulfil the aspirations of our founders all those years ago.

RAU ALUMNI



BEAGLING IN THE 1930s.

ALUMNI IN THE PANDEMIC

James Mansfield & James Flower

International Equine and Agricultural Business Management, 2002.

Having featured 'Field and Flower' in Landmark a few years ago, we return to see how the business duo are adapting their business in the light of the global Covid-19 pandemic.

The 24 hours after the first lockdown was announced. When Boris announced lockdown our website saw a 500% surge in traffic as the move from high street shopping into our online world seemed to happen in a matter of hours. We were being inundated with emails, social media messages and phone calls asking whether we deliver to all corners of the UK as well as internationally. For every phone call we answered, ten voicemails were left on our answerphone. Orders were being placed every ten seconds.

As founders we had two priorities, ensuring the health of our team wasn't compromised at work and prioritising our existing customers with the level of service and quality of product they have come to expect. Late-night calls were made to our website agency to expand server capacity to respond to order demand and to impose delivery day caps which prioritised subscription customers and

their preferred delivery day. **No turning back.** Order forecasts were challenging as basket size grew, and discussions were had around how many scotch eggs could feasibly be rolled in a day and how long chorizo took to mature. We decided that rather than cancel orders, we'd invest in ensuring we got orders to our longstanding customers.

Our small-scale farmers and producers tried to increase product stock as quickly as possible to fully match orders increasing, but some substitutions were inevitable. Feedback from our longstanding customers was that they would prefer an order with a substitution rather than not at all. We're very grateful for the level of understanding we received from our customers in these cases.

Our farmers lost a lot of restaurant trade and were grateful for the additional orders – our customers played

a pivotal role in supporting them. A Times journalist asked us how we'd manage to continue fulfilling more orders during lockdown. Put simply, it was down to the relationships we've forged with our farmers and the short supply chain that field&flower was founded on. For example, there was a national shortage of chicken for several weeks. Our relationship with Stu at Castlemead ensured we were well supplied throughout.

With our mission to get orders to customers (many of whom were shielding, NHS workers or in remote locations) came significant financial investment. As a small business, we didn't take this decision lightly. Such consideration for this level of financial investment would normally have taken months, we had hours to decide.

What did that investment look like? We needed more refrigeration, staff and space.



James and I gave up our desks and moved to a new portacabin on-site, converting the original office and staff room into further picking and packing facilities. We increased the team in Somerset by 182% and introduced a new rotating shift pattern from standard working day hours to 24 hours a day seven days a week.

Further Covid-19 measures were introduced: PPE, sanitation stations and an increased level of daily cleaning of the operations facility. The customer service team was increased by five to maintain our service levels during lockdown. Dave, our main delivery driver and head of logistics, managed to recruit seven new drivers that had found themselves out of work to ensure we maintained 50% of our own deliveries each week. We invested further in our IT infrastructure and server to increase capacity and robustness. Where supermarket websites went down, and other food retailers introduced virtual

queuing, our website continued to perform. We didn't increase the minimum spend, product prices or delivery fees.

This investment happened as our ops team (now key workers) continued to work, putting their own health at risk. We were doing our equivalent of two Christmasses every week.

The dedication to ensure we fulfilled every order was truly inspirational and we couldn't be more grateful.

What does the future look like? The beginnings of normal life are starting to return for many, and that's a welcome relief. As a small business that invested substantially in increasing our infrastructure to deliver orders during this period, we are proud to have stuck to our principles during lockdown. We hope our free-range, high-welfare meat will continue to be enjoyed by many. It's important to remember the small

farmers that we work with and who continued to deliver product throughout the pandemic – for many, trade has still not returned to pre-pandemic levels and with many restaurants either still closed or at reduced capacity, it is not clear when trade will fully recover. For these farmers, we will continue to support them with every order that is made.

Customer feedback has confirmed what we've known all along, the quality of our produce is noticeably different. It's been quite a journey.



fieldandflower.co.uk
[@fieldandflower](https://www.instagram.com/fieldandflower)

ALUMNI IN THE PANDEMIC

Edward Magor

Agriculture, 2009.

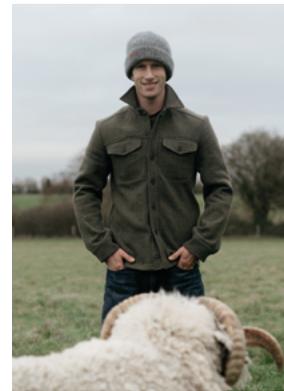
Using wool grown by their own Merino sheep, Herne offers pioneering apparel that's designed, grown and made in Britain.

Since graduating from the RAC in 2009 with a degree in Agriculture, I have worked for our family business managing our mixed farm in Wiltshire, running our retail tea business, Williamson Tea, and assisting in the management of projects on our tea farms in Kenya.

The retail market for tea is highly competitive and my focus has been developing the Williamson Tea brand, concentrating on our unique selling point of being family tea farmers and the only brand of tea available in the UK market whose teas come solely from their own farms. Over ten years I learnt how to create and brand value adding products for what is essentially a very low value commodity.



herneclothing.com
@herne_clothing



Through my studies at the RAC, I developed a keen interest in organic, holistic management of land. However, traditional livestock and arable options on the largely north-facing, clay soils of our land did not lend themselves to profitable, subsidy-free farming. A chance read of a 1920s book referring to woollen overshirts as 'the most fundamental piece of outdoor clothing' sparked an interest in wool apparel and the idea of a new value added business where I could use the skills and experience we learnt from Williamson Tea to develop a new vertically integrated business.

I began working with one of the oldest mills in Yorkshire to develop a specialist wool fabric for use on outdoor clothing. Wool is nature's performance fibre and I wanted a fabric that combined fantastic warmth with durability and weather resistance and was also very soft to touch. The fabric had to compete with synthetic options and meet modern consumer expectations. Following a

lengthy trial period, we succeeded in developing two fabrics.

Next, I set up our fine wool flock. This was quite a challenge as, despite many famous towns - including Cirencester - being built on the wool trade, the UK sheep industry is now focused almost entirely on meat production. Eventually, I managed to source a foundation Merino flock and from there we have expanded significantly.

The flock is managed to meet the quality requirements of the mill, shearing twice a year at the end of January and June. Two shearings increases our yield, with the simple maths of one sheep-per-shirt-per-shearing, and ensures high-quality consistent wool vital for product quality. Old skills are mixed with new: EID ear tags and performance recording guide our breeding plans and manage the flock's health, whilst the best organic practices learned in Nicky Cannon's lectures are combined with new ideas for

regenerative farming to improve our pasture and soil health. We rotate through pastures, graze herb-rich leys and set aside large areas of the farm for wildlife and nature.

Once milling is completed the finished fabrics are manufactured into apparel in north London with the designs inspired by the clothes of early pioneers. A unique selling point for the business is that Herne's products are designed, grown and made in Britain.

Having had ten years of dealing with major multiples I decided that any new business must be able to market and sell direct to customers, so worked to create a website and develop a social media network. As customers become increasingly interested in how and where their products are grown, showcasing the vertical integration of 'Wool to Wardrobe' and life on the farm has proved popular and we have achieved sales all around the world, most notably North America.

ALUMNI IN THE PANDEMIC



Victoria Jenner

International Equine and Agricultural Business Management, 2002.

“Covid-19 - my accidental business pivot that has given me a new direction, a new brand and the ability to raise money for charity.”



As a small enterprise focussing on embroidery and branding for the equestrian industry and local businesses, during the lockdown I expected my work to completely dry up. All the equestrian events were cancelled, businesses had to close their doors and were under financial strain - so investing in branded kit would not be the top of anyone's agenda.

Whilst trying to remain positive, I printed a sweatshirt with 'Socially Distant' on it in colourful lettering, wore it on an Instagram video - and without realising it I had opened up an opportunity for me to offer something completely different to my usual branded products. Everyone wanted a Socially Distant sweatshirt!

I found that I really enjoyed creating and designing the

slogans, so I set up 'Bear Hug Goods' with the aim to spread some positivity and bring a smile to people's faces. I now have a small collection of slogan tops that are all designed to make the wearer not only look good but feel good - and best of all DO good, as 10% from each sale is donated to the mental health charity, Mind. The 'Don't Quit' range is particularly popular with riders, whilst the 'Woman Up' and 'Socially Distant' sweatshirts have proved to be great working from home options.

The sweatshirts, hoodies and t-shirts are organic, sustainable, ethically manufactured and decorated by me in my workshop on the farm. I have seen a definite move towards supporting small businesses, as well as increased demand for sustainable fashion, so hopefully, Bear

Hug will continue to grow. I have recently invested in my own clothing labels and branded packaging, so now I feel like a real brand!

As a 40-year-old farmer's wife, who has never been particularly 'trendy', I am still slightly taken aback that strangers actually want to buy things I have designed but I am sticking with it, as I am passionate about building a community around my brand, and raising as much money for Mind as possible (all whilst continuing to run Stitched Equestrian and constantly having hay in my socks....).

bearhuggoods.com
@bear_hug_goods

stitchedquestrian.co.uk
@stitchedquestrian



We have launched a generous new prize, funded by alumnus Richard Pilkington (1987) of Pilkington Farms Partnership, which will see the recipient awarded their final year tuition fee based on sustained, excellent, academic performance throughout the first two years of study.

The Pilkington Farms Partnership Prize will be given to the top second-year undergraduate student in the School of Real Estate and Land Management (RELM), with the final year's fees (currently £9,250) awarded as a fee-waiver in their third year.

The Pilkington Farms Partnership Prize has been created together with Richard Pilkington, Director of Pilkington Farms Partnership, an arable and livestock farming partnership based in Hertfordshire with farms in both Yorkshire and Hertfordshire. Richard Pilkington said of the award:

“We, here at Pilkington Farms Partnership, are delighted to sponsor this prize. All those working in the agri and environmental industries are faced with ever more complex issues and the need for professional expertise

to solve these has never been more needed. We are delighted that the RAU will be educating, encouraging and emboldening a new generation to take on this challenge and that we can play a small part in helping them do so.”

William Leschallas, Head of the School of RELM commented:

“I am so grateful to Richard for offering this generous award and for his ongoing support for the RAU. This prize offers a great opportunity for a student who joins one of our undergraduate courses, and I hope it will encourage students to push themselves to perform to the best of their abilities and achieve excellence.”



PILKINGTON FARMS PARTNERSHIP



Farewell Dai Barling

1924 - 2020

Dai Barling at a Cotswold Cereal
Study Group field meeting c.1986



What is the mark of an outstanding lecturer? Perhaps it is the number of students who pass examinations and go on to succeed in the life they choose, illustrating that someone provided inspiration at the right time. Then again, it might be those who flog through huge quantities of notes, hoping that will lead to quality in answers able to be regurgitated at will. Or possibly dedication to a particular subject with research expertise and enthusiasm, leaving the student in awe of the lecturer, and remembered for the way in which they were taught, even when the detail may be a distant memory. Put simply it is the memory of the lectures throughout your life; such a person was Dai Barling. The Royal Agricultural Society of England (RASE) recognised Dai Barling with an 'Outstanding Lecturer' award in 1991.

Appointed lecturer in 1946 when the College opened again after the Second World War, by 1951 Dai's talent made him the natural choice to be promoted to Head of the Department of Agricultural Sciences, a post he was to hold until 1989. This was a glorious time for RAC in which

Dai played a great part, with students influenced by him going on to play leading roles in agriculture around Great Britain, and increasingly around the world.

Dai maintained throughout his life the interest in grasses that had begun in his student days at Aberystwyth. He wrote papers on the genus *Poa* and maintained a lifelong interest in grassland ecology. With the setting up of the Cirencester Cereal Study Group in 1977, Dai became an instant supporter. This Farmers' Study Group is still going in 2020 and is now called the Cotswold Arable Study Group (CASG).

Those of his colleagues who held him in the highest esteem included Vic Hughes who succeeded to the position of Principal, who was delighted when it was announced that Dai had been chosen to be an Honorary Fellow of the Royal Agricultural University (FRAU), a very rare honour for a lecturer and richly deserved for this son of a Welsh miner who scaled the heights of his profession and remained personally modest and undemanding.



Remembering Mick Ponting

1943 - 2020

Mick Ponting at
Cirencester Polo Club

We are sad to report the passing away of an Alumnus (1963) and Lecturer at the RAC, Mick Ponting. During the time Sir Emrys Jones was Principal in the mid-1970s, Mick joined the academic staff as a lecturer in Veterinary Science and also took the responsibility of vet to the College's farm stock.

Mick will be remembered by the alumni who attended his lectures as an inspirational teacher. He motivated his students to understand the fundamentals of veterinary science in relation to farm stock. He once said, 'When I was a student in the 60s, I was greatly impressed by Dai Barling's lecturing skills and I copied some of those where I

could. I believe he influenced the way that I lectured. If it worked, then I give Dai the credit.'

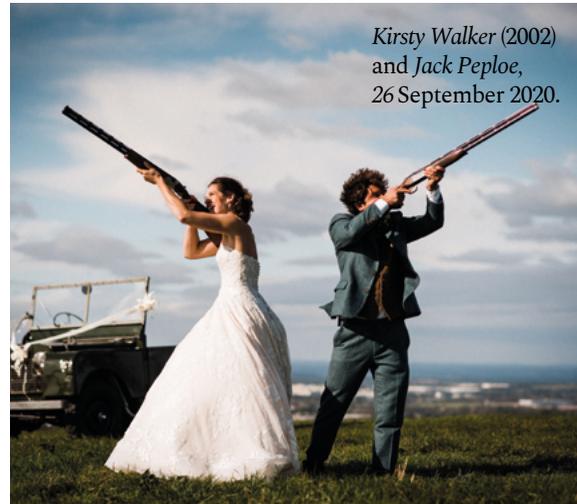
Mick loved horses and will also be remembered for his enthusiastic polo playing. He played on many famous polo grounds around the world, Argentina, Brazil, New Zealand, and Brunei.

Mick had been in poor health for the past year. He died in his sleep on Monday 16 November aged 77 years. He is survived by Maureen, his wife, and Michael, his son. Ron Coaten's Facebook page has many alumni comments that will warm the hearts and give comfort to Mick's family.

Your weddings



*Hugh Sancroft-Baker (2009)
and Annabel Henderson,
1 August 2020.*



*Kirsty Walker (2002)
and Jack Peploe,
26 September 2020.*



*Anton Henselman (2013)
and Chloe Lassman (2013),
11 January 2020.*



*Tom Brown (2016)
and Laura Rigon,
1 August 2020.*



175 YEARS

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