

# Women in Science





# The James Hutton Institute

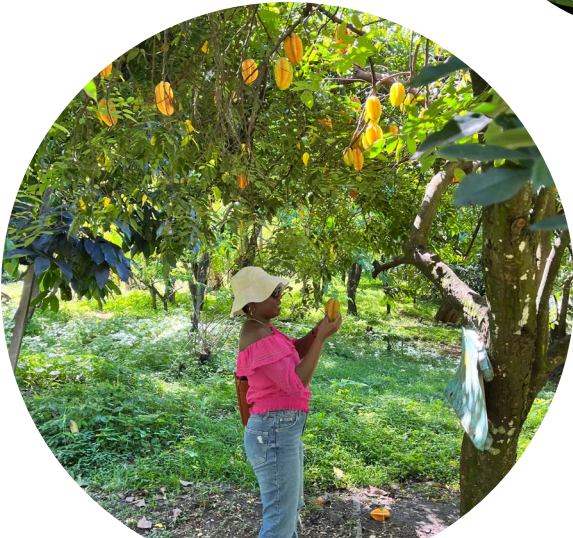
**The James Hutton Institute is a respected and globally recognised research organisation. We work in partnership with people, organisations, and governments to find solutions for the sustainable management of land, crop and natural resources that support thriving communities.**

Across the globe, nations are facing growing demands to provide food, energy and water from finite land and natural resources. These challenges are complex, interconnected, and ever-changing. We use our distinctive interdisciplinary research strengths in land, crop, water, environment and socio-economic science to deliver solutions to these critical global challenges.

Our scientists follow the inspiration of James Hutton. His observations on Scotland's rock, soils, agriculture, and landscapes changed the way we think about the world. We deliver global impact through excellent science, collaboration and innovation and, like Hutton, are willing to challenge conventional wisdom.



Our research and areas of interest cover a vast span of **scientific disciplines** including:



# Introduction



Being a scientist is a way of making a difference and improving people's lives. It is generally accepted that research and scientists are crucial in providing solutions to global challenges like climate change or food insecurity. However, science is not always considered as a potential career and women remain under-represented in many scientific areas.

The booklet hopes to help address the imbalance by describing the role of 20 of over 300 female scientists, technicians, and colleagues providing research support at the James Hutton Institute. It highlights some of the vast array of interesting, rewarding and appealing jobs and careers there are in science and social science. The work is often in other countries, typically with a very international community of colleagues and partners. Some of the women featured here have moved across or between science disciplines as opportunities and interests have evolved, while others have chosen to become specialists in their field.

It's increasingly recognised that gender-diverse workplaces are more innovative and productive, so gender equality has real economic benefits. This is just as true in science as other sectors. In contrast to the image often associated with science, most research projects today involve people from a wide variety of science or social science backgrounds working together to solve complex problems. At the Hutton, much of the work we do is interdisciplinary, team-based research that calls for people who can communicate well and deal with different opinions and uncertainties, as well as scientific and technical skills.

Thanks to all those who contributed to this booklet for their time and willingness to share their experience. We hope that it inspires you and contributes to a future generation of female scientists.

**Professor Deb Roberts**

*Deputy Chief Executive and Executive Director of Science  
The James Hutton Institute*



The James Hutton Institute was one of the first organisations of its kind to be awarded Athena SWAN Charter status in April 2014. The Athena SWAN Charter recognises commitment to advancing women's careers in science, technology, engineering, maths and medicine (STEMM) employment in academia.

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# Dr Ali Karley

## What do you do?

I am an Agroecologist and Research Leader within the Ecological Sciences department. I conduct research to understand how farming and food production can be carried out in an environmentally, economically and socially sustainable way.

## How did you get into it?

I wanted to be a detective when I was young, and doing research is pretty close to detective work! I started out studying plant nutritional physiology and plant-insect interactions looking at how nutrient inputs and crop pests could be managed more sustainably, but then I realised that farming in

**1994**

BA (Cantab) Natural Sciences **University of Cambridge**

**1999**

DPhil Plant Sciences **University of York**

**1999**

BBSRC-Wain Fellowship, **CSIRO Adelaide**

**2000-2003**

Postdoctoral Researcher, **University of York**

**2004**

Research Leader, **Scottish Crop Research Institute**, Dundee

**2006**

Birth of first child

**2008**

Birth of second child

**2010-present**

Research Leader in Agroecology, **The James Hutton Institute**, Dundee

**2022-present**

Science Challenge Leader, **The James Hutton Institute**

an environmentally sustainable way is only possible if it is financially and socially sustainable. So now I work with researchers from several other disciplines to understand the barriers to sustainable farming and food production and how we can overcome them.

## Essential qualities for this kind of role?

I enjoy having the opportunity to work with people from all walks of life. It is important to be able to support others in their work and not to get dispirited when things go wrong. Being open minded and prepared to look at things from different perspectives are other important qualities to have.

## Best thing about your job?

The people I meet, their enthusiasm, and the incredibly varied research that is carried out at The James Hutton Institute and by our collaborators.

## Anything you would change?

Less time in front of a computer and more time in the field.

## What might surprise people about what your work involves?

The variety in what we do would be surprising for some. A day at work for me can range from feeding aphids (insect culturing) to visiting field trials and sites for collecting samples, to talking to farmers, policy makers and other people working in agriculture. It's what makes the job so enjoyable.



# Alison Dobson

## What do you do?

I have worked as part of the Farm, Field, and Glasshouses department for 26 years striving to deliver quality plant material, for high value breeding programmes and experimental trials. My remit covers a range of plants produced under polythene tunnels, glasshouses and for open fields for a variety of different sponsors and projects. Soft fruit, cereals and potatoes are the main crops I produce, with additional smaller projects for PhD students and other companies, who co-locate on our site. Various methods of plant husbandry and propagation are involved in producing plants from seed, cuttings or tubers, some grown on to harvest others for long-term collections, depending on project requirements. Recent projects have included the adaptation of hydroponics and aeroponics to produce plant material, without the use of soil or substrate and this has helped keep my job current, while we work towards finding good, alternative, sustainable substrates.

## 1987-1993

High school, **Harris Academy**, Dundee, Scotland

## 1991-1997

Seasonal work various **Sottish Crop Research Institute (SCRI)**  
Departments- Potato Crop genetics, Cereals, Farm field glasshouses

## 1995-2000

weekend cover - **James Laurie and Son Ltd est. 1860** - Plant Nursery and landscaping

## 1995

**Dundee Technical College**, Dundee, Scotland. HNC Amenity Horticulture Higher Biology Various NC Amenity Horticulture modules NC module Introducing fundamentals of chemistry.

## 1997

Farm field and glasshouse **SCRI** - full time

## 1999

**Elmwood College**, Cupar, Scotland. HND Amenity Horticulture

## 2010

**Open University** Certificate of Higher Education Open (K05)

## 2013

**Met office** team leader on going

New opportunities on the horizon such as grafting apples, cherries, plums and pears will involve new learning opportunities for myself for the future.

## How did you get into it?

I came from a farming background and the institute was on my doorstep. I was first fully aware of the institute in the 1980s, while during the soft fruit picking season I would, along with many other villagers, help with harvest. The institute provided the opportunities for me to pursue a career in horticulture.

## Essential qualities for this kind of role?

A good, broad range of plant knowledge is essential to be able to provide support and advice to scientists and sponsors. Accuracy and attention to detail is important, as is the ability to adapt and innovate to meet requirements of specific requests. Of course, planning, prioritising and multitasking all help to bring projects in on time.

## Best thing about your job?

I think the variety of tasks I get to do every day is the best thing about my job. I often meet new challenges and the projects I work on are constantly changing. I get a chance to learn and gain new skills all the time.

We have many visitors to the department, so we regularly give tours to visiting groups, including, farmers, schools, further education, visiting researchers and the public. It is a good opportunity to share my knowledge and showcase the work of the institute.

## Anything you would change?

I enjoy my job although, there is so much to be done so a few hours more in the day at times would be welcome.

## What might surprise people about what your work involves?

It can be very fast paced especially at the start of the growing season. It also takes time, effort and skill to produce and maintain plants to a high standard and within the requested time scales. Our plants material is a valuable resource, which is key to many of our science projects and contracts.





# Dr Andrea Britton

## What do you do?

I am an ecosystem scientist working within the Ecological Sciences Department, researching how natural and man-made factors influence plant communities and the consequences of this for ecosystem functioning, habitat management and conservation. My work focusses on alpine habitats in Scotland: I investigate the effects of the deposition of pollutants, and climate change. I explore how these factors affect the biodiversity of plant communities and soil organisms such as mites and fungi which are important for controlling decomposition and nutrient cycling. I look at the effects on carbon storage in soil and vegetation and how this affects water quality in upland areas. Most of my day to day work is office based; planning and designing experiments, managing projects, supervising PhD students, analysing data and writing up research results for scientific journals. But I also do a significant amount of outdoor work, including plant and soil sampling in the mountains.

**1994**

BSc in Ecology, Conservation and Environment **University of York**

**1994-95**

Assistant Conservation Officer **Wildlife Trust for Bedfordshire**

**1998**

PhD in Applied Plant Ecology **University of Liverpool**

**1999**

Plant Ecologist **Macaulay Land Use Research Institute**

**2009**

Senior Plant Ecologist **Macaulay Land Use Research Institute**

**2012**

First child born

**2013**

End of maternity leave and begin part-time working

## How did you get into it?

I've always been interested in the natural world and enjoy being outdoors, but I first got seriously interested in ecology at university. I went intending to do molecular biology, but came out with a degree in ecology. My PhD was on lowland heathland ecology, but as a keen mountaineer I was very interested in upland management issues. When I moved to Scotland for my first post-doctoral job I found very little research being done on alpine systems in Scotland, so I moved into that area and have been working on it ever since.

## Essential qualities for this kind of role?

A lot of ecology is about understanding how the different elements of complex natural systems fit together. You need a keen eye for detail, while being able to keep the bigger picture in mind. On a practical note, ecological projects often involve team working; it helps to be good at getting along with colleagues, and to have good time management and planning skills. Working in mountain environments requires an extra dose of determination when the weather is not on your side!

## Best thing about your job?

Being outside in the mountains and knowing I am contributing to understanding how these ecosystems work and how we can conserve them. I love the "eureka" moments when our data show us something surprising or unexpected.

## Anything you would change?

Science can be a very competitive career path and many people work long hours. When you have a young family it can be difficult to achieve work-life balance.

## What might surprise people about what your work involves?

An important aspect of science is communicating your work to people from all walks of life. I once appeared on TV to explain how lichens might make Rudolph's nose glow in the dark!





# Dr Carol-Ann Craig

## What do you do?

I work within the Environmental and Biochemical sciences department, mainly working in the laboratory preparing and analysing various samples for their isotopes. The sample types I analyse range from rocks, waters, soils and food to teeth and bone. Depending on what is required, I either break the sample down or extract it, then chemically purify it so that all that is left is the element I am interested in. I then load it into a Thermal Ionisation Mass Spectrometer (TIMS) and measure the ratio between the different isotopes. The data is used either to date how old the sample is in geological timescales or to trace where it came from. As well as my role in science I also work as the quality manager for ISO17025 in the labs and quality co-ordinator with the HSQE team. As the ISO17025 quality manager, I have to make sure that all our accredited methods are being followed correctly, are fully traceable and follow official guidance and best practice.

**1994**

Switched to Environmental Geoscience **The University of Edinburgh**

**1997**

Obtained degree

**1998**

MSc in Environmental Analysis and Assessment **University of London**

**2003**

PhD in dating geologically young samples using isotopes **University of London**

**2003-2004**

**Various jobs** from draped life model to social services call handler

**2004-present**

**Macauley Enterprises/ Institute, later The James Hutton Institute** lab assistant through various positions to section head and quality manager

## How did you get into it?

I had always wanted to be a scientist and apparently told my primary school teacher I was going to become an environmental advisor to the UN. My father taught chemistry at a university and I spent my holidays there with him. I was always fascinated by the equipment and instruments (and smell!). As someone who loves nature and has a logical and questioning mind, the environmental sciences suited me perfectly. During my MSc I fell in love with lab work using multiple instruments and techniques and have pursued a lab career since. I also love organising and this led me to my QM role where I can put systems into place and make current ones more efficient and fool-proof.

## Essential qualities for this kind of role?

Having a logical and organised outlook is very useful for working in a lab, as well as being manually dexterous. Being focused and stubborn can also be very useful when dealing with “problem” samples or uncooperative instruments! Good communication is required to be able to discuss and present results to various audiences.

## Best thing about your job?

It's a tie between that satisfaction from your work helping the environment somehow and working with such a diverse and interesting group of people.

## Anything you would change?

In my career path I would have probably done better to focus on a “pure” science for my undergraduate and only specialise later on (don't tell my dad!). Workwise, I would like funding for environmental research to be improved and more time to develop ideas that may not be profitable but are worthwhile.

## What might surprise people about what your work involves?

Sometimes I find imprint fossils in the rock samples I analyse. For one of the chemicals I use I have had to sign a declaration that I'm not making weapons of mass destruction.



Cutting peat during a trip to the Shetland Isles where I was undertaking interviews with the islanders to explore their perceptions of the importance of their peatlands in the face of climate change.

# Carol Kyle

## What do you do?

I'm a research assistant working in social, economic and geographical sciences. My job involves interviewing people, running focus groups and larger workshops, handling data, writing reports and travelling. I'm involved with multiple projects (for example, improving food security, assessing the effects of climate change, commercial poultry production and the backyard owner). The opportunities are endless and varied. Despite having no social science qualifications, I have a natural aptitude with people, I love to organise and I am flexible and willing to learn.

## How did you get into it?

Initially, I wanted to work with animals but there were few opportunities apart from as a vet (not clever enough!), kennel maid or groom (I didn't want my hobby to be my job) and a job at the Rowett allowed me to spend many happy hours interacting with cattle, sheep and pigs, feeding them new-fangled diets like ammonia-treated straw and whisky bi-products and analysing the "outputs". During my time there I also worked with red deer, llamas and dairy goats, developed a number

**1977**

Age 17 joined **The Rowett Research Institute** straight from school

**1983**

HNC biology **Robert Gordon University**

**1998**

joined the **Macaulay Land Use Research Institute** Aberdeen

**2011**

began running and facilitating workshops at the new **The James Hutton Institute**

**2013**

became research assistant in SocioEconomic and Geographical group at the **Hutton**

of analytical skills, completed an HNC in biology, achieved promotion and learned how to use the latest invention - a desktop computer! At the Macaulay my focus became more ecological and environmental, investigating the effects of environmental oestrogens (chemicals released from plastics) with particular emphasis on invertebrates (cockroaches and earthworms!).

When the Macaulay merged with the Scottish Crop Research Institute and became the Hutton, the start-up workshops showed me how much I enjoyed people-focussed work and that's been the area I've enjoyed since.

## Essential qualities for this kind of role?

I've embraced many changes throughout my 40-year career and I believe that this ability to adapt is still vital. The pressures on our world are increasing and ever changing and scientists have to be able to respond and react quickly.

## Best thing about your job?

I love the variety of different projects I'm involved with; there's always something new to learn. People are fascinating. I can honestly say that I find it rewarding and challenging and I've loved every minute of it.

## Anything you would change?

Getting funding for research is becoming very difficult and puts a real strain on researchers. In an ideal world I'd like to see easier access to more funding and permanent contracts for all staff.

## What might surprise people about what your work involves?

I think the picture above says it all!





# Charlotte Winspear

## What do you do?

I am PhD student with The James Hutton Institute, Moredun Research Institute, and The University of Edinburgh. My PhD project looks at the bacteria *Mycobacterium avium paratuberculosis* (MAP for short!), the causative agent of Johne's Disease (an inflammatory gut disease of ruminant species). I am looking at how the environmental preferences of MAP, as well as management of selected farmland and gut microbiome composition of the animals, may affect the incidence and severity of disease.

### 2017-2020

BSc Hons Zoology from  
**University of Lincoln**

### 2020-2021

MBio Zoology from  
**University of Lincoln**

### 2021-present

Currently undertaking PhD in Quantitative Biology, Biochemistry, and Biotechnology, will be awarded by **The University of Edinburgh**

## How did you get into it?

I have always had a fascination for the weird and wonderful and a great drive for science, so zoology was the perfect marriage of the two for me! As I progressed through my undergraduate degree and into my Masters, I found that animal diseases, plus their driving forces, were what really captured my attention. This, combined with my rural background, honed my interest in livestock diseases and their transmission.

## Essential qualities for this kind of role?

To be a PhD student, you need to have a passion for your craft! Being truly invested in your subject matter means that the work becomes less of a "job". A great deal of curiosity helps too, as you are always willing to learn more and develop your skills, which can lead you to explore avenues you hadn't thought of before!

## Best thing about your job?

The many paths it can take you down! One minute you're in the lab, the next you're out on the farm talking to a farmer about their animals and tomorrow you could be giving a talk to excited students looking to start a PhD!

## Anything you would change?

Accessibility and funding opportunities – funding is becoming increasingly competitive and many employers are not offering full-time contracts for amazing researchers once they have completed their qualifications.

## What might surprise people about what your work involves?

That it's not all white lab coats and safety glasses! A fundamental part of research is science communication and relaying your work where it is needed most. This can often mean getting out and meeting my project's farmers, giving talks at conferences about my work or going to agricultural shows and workshops to talk about animal health and disease.



# Claire Newman

## What do you do?

I'm a research assistant in Environmental and Biochemical Sciences. The main part of my job involves carrying out molecular and microbiological techniques including DNA analysis, real-time polymerase chain reaction and data analysis, and bacterial culture work. The main focus of my research group is E.coli transportation and antimicrobial resistance (AMR) in the environment. I have also been involved in a long-term project looking at the chemical and biological effects of pollution from farming in a catchment area near Forfar, going on fieldwork to collect samples, using monitoring equipment, and analysis of the samples in the lab. Identifying diatoms (a type of algae) is also part of my role. I look at their community structures to assess nutrient levels in watercourses. I also identify diatoms for our forensics department, helping establish whether a body or missing person has been in a particular waterbody from diatoms that have adhered to their clothing. More recently, I've organised sampling regimes and analysis on projects looking at the effectiveness of UV systems on treating private water supplies and developing new technologies for the provision of safe public drinking water.

**1990**

Microbiology lab work, food manufacturer, Dyce

**1995**

Public Health Laboratory work, **Forresterhill Hospital** Aberdeen

**2000**

**Scottish Water** microbiology lab, Turriff

**2002**

**Macaulay Land Use Research Institute**

**2010**

HND in Environmental Management

## How did you get into it?

I have been interested in science and learning about nature from a young age. I had a microscope when I was around 10 years old and that was great for finding out about things. When I left school I wasn't exactly sure what I wanted to study at university so I took an interim job in a microbiology lab and discovered how much I enjoyed this type of work. The hospital role in public health broadened my knowledge of pathogenic bacteria and I was involved in the investigation into an E.coli 0157 outbreak. Scottish Water's microbiology lab was very busy with a massive throughput of samples and led me into algae identification as we had to look for algal species in reservoirs, especially blue-green algae which are harmful to humans and animals. The Macaulay Institute move was motivated by convenience, but it was here that I had the opportunity to gain formal qualifications; an HND in Environmental Management.

## Essential qualities for this kind of role?

Willingness to learn new skills as my job has developed in new directions since I originally started. Being able to communicate with members of the public is essential, whether with farmers or householders who have agreed to take part in one of our projects. Working away from home is required and organisational skills are essential for organising sampling regimes for sites all over Scotland.

## Best thing about your job?

Meeting different people who are taking part in our projects is an enjoyable part of my job and building a rapport with them is very satisfying. I love the great variety of tasks in my role and specific tasks like diatom identification are very interesting and often challenging.

## Anything you would change?

Sometimes I have to work in difficult conditions outdoors, such as trying to download data from one of our data loggers in the rain! Some of the molecular work I do can be frustrating when things don't work the first time - typical of this type of work. A lot of time is spent running repeats, trying to work out what went wrong!





# Clare Macaulay

## What do you do?

I work within the Cell and Molecular Sciences department. For the past 27 years I have been running the Sanger sequencing and genotyping service within the Genome Technologies facility. The facility provides affordable access to a range of genomics technologies and expertise from Sanger based sequencing and genotyping, high throughput DNA extraction and quantification and Next Generation Sequencing (NGS). This valuable resource supports and impacts on many areas of work within the Institute and with external researchers.

## How did you get into it?

After completing my degree, I decided against further study, and chose instead to pursue a career working in the laboratory. I started out as a Research Assistant at SCRI, providing technical support for an RNA transcription research project. I spent three years gaining experience in a wide range of molecular biology techniques before taking up the position running the institutes Sanger sequencing and genotyping service.

## Essential qualities for this kind of role?

Over the years, the technologies and equipment I use have evolved rapidly. Consequently, the job requires a high degree of flexibility and an ability to adapt to change. These changes bring the opportunity to learn new techniques, machinery and develop new protocols. Our group has some of the most specialised and costly equipment onsite, requiring considerable care and technical expertise to run. The service deals with hundreds of samples simultaneously, all of which require tracking from receipt through to data delivery. Planning and performing the work requires a great deal of organisation, multitasking and precision. Excellent communication skills are essential for the job, not only for staff

management and training, providing demonstrations and facility tours, but also for interacting with 200 customers within and outside the Institute. The extensive knowledge and expertise which I've gained over the years are essential for providing feedback and advice to customers.

## Best thing about your job?

I enjoy the level of autonomy that I have in the job. I decide how the service operates and am solely responsible for researching, optimising, and establishing the protocols and procedures employed. I particularly enjoy giving tours of our facility to visiting workers, students, and school pupils. I love helping and getting to know the variety of students and scientists, who come from all over the world to work here and make use of our facilities. Hearing about their different backgrounds and cultures is fascinating and life enriching.

## Anything you would change?

Providing a service means our workload fluctuates with customer demand. We must respond rapidly to sudden increases to ensure timely return of customer's results. I would love to be able to spread out the workload to avoid these peaks and troughs.

## What might surprise people about what your work involves?

It's staggering how rapidly sequencing technologies have advanced. The amount of data which we can generate today has increased 50,000 times since I started the job. Equipment capabilities were once the limiting factor in sequencing. The bottleneck however now lies in downstream processing the vast quantities of data produced.

### 1994

Degree in Biological Sciences **University of Edinburgh**

### 1995

Joined SCRI (now **The James Hutton Institute**) as Laboratory Technician

### 1997-Present

Began running the institute's Sanger sequencing and genotyping service.



# Cristina McBride

## What do you do?

I am a soil science PhD student at Lancaster University and the Ecological Sciences department at The James Hutton Institute. I am investigating the impact of cover crop diversity on soil-associated ecosystem services to improve the resilience of UK agricultural systems to the varying rainfall patterns we are currently experiencing. At the Hutton, I mostly spend time in the field assessing the soil erosion control capacity of different cover crop combinations by conducting overland flow simulations. I also work in the lab processing soil cores from the field and measuring a variety of soil and root properties.

## How did you get into it?

Growing up in semi-arid Spain, I became aware of the challenges of using natural resources at a young age. My interest in soil science was sparked by an agricultural module I took during my undergrad, where I realised how important soil management is to help us adapt to climate change and achieve sustainable agricultural systems around the world. This led to an MSc in Soils in Edinburgh and then a technician role in a large EU project in Lancaster, during

**2012**

Moved from Zaragoza, Spain to Dundee for university.

**2016**

BSc (Hons.) Environmental Science at **University of Dundee**.

**2016**

Research Assistant at the **Calakmul Biosphere reserve**, Mexico.

**2017**

**Environmental Investigation Agency** and **EarthSight** researching environmental crime, London.

**2018**

MSc Soils and Sustainability at the **University of Edinburgh** and **SRUC**.

**2019**

Soil Science research technician and interim community manager at **Lancaster University** for SHui, an EU funded project to improve soil and water management in agriculture.

**2021**

PhD at **Lancaster University** and **The James Hutton Institute**.

which I connected with international crop and soil scientists and was involved in research improving soil and water management in EU and Chinese agricultural systems. My supervisors encouraged me to continue this line of research and thanks to them and my then prospective supervisors in the Hutton, we got the funding for this PhD!

## Essential qualities for this kind of role?

Organisational and interpersonal skills are key. Being able to communicate well with a range of people in different roles. Always being open to learning and respecting different points of view as well as being able to ask for and offer help. Being a good team player is vital in creating a positive working atmosphere.

## Best thing about your job?

Working on something I am passionate about where no day is ever the same: from outdoors to indoors, lab to office, thinking and writing to picking slugs off pots or chasing rabbits away, building a polytunnel or digging holes with your supervisors and colleagues, from nice weather to sideways snow. I have been very lucky with my four supervisors and the people I work with.

## Anything you would change?

In an ideal world, science would be fairly funded, and researchers would spend their valuable time working towards overcoming the challenges society is facing.

## What might surprise people about what your work involves?

Off-road driving courses are needed to get to field sites! That was a happy surprise for me.





# Prof Deb Roberts

## What do you do?

My work is really varied but essentially I am responsible for ensuring the institute delivers research that contributes to food and environmental security and rural wellbeing. This means making sure that our scientists have the skills and expertise to address current and future issues, that the science we do has impact (makes a difference) and is high quality. It also means ensuring the scientists in the Institute have the support and facilities to allow them to conduct world-leading research. I am also the Deputy Chief Executive, which means supporting and standing in for the Chief Executive when required. I have an Honorary Chair at the University of Aberdeen, which allows me to continue to do some research and also supervise PhD students.

## How did you get into it?

I come from a farming background and my choice of undergraduate degree reflects the fact that I hoped to get a job in the agriculture sector. I had no aspirations to become an academic (partly because I did very badly in my A-levels), but I really enjoyed my degree, especially the dissertation, which was my first experience of doing research,

**1986**

BSc Agriculture and Agricultural Economics (Wales)

**1989**

Lecturer in Agricultural Economics, **The University of Manchester**

**1992**

PhD in Agricultural Economics (Manchester)

**1994**

First son born

**1995**

Second son born

**1996**

Research Fellow, **University of Aberdeen**

**1997**

Third son born

**1998**

Senior Economist, **Macaulay Research Institute**, Aberdeen

**1999**

Fourth son born

**2003**

Senior Lecturer, **University of Aberdeen**

**2006**

Reader, **University of Aberdeen**

**2012**

Professor, **University of Aberdeen**

**2013**

Science Department Head **The James Hutton Institute**

**2016**

Director of Science

**2020**

Deputy Chief Executive

and accepted the offer of a PhD scholarship just after I graduated. From then on, I followed a fairly conventional career path, although my teaching and research has changed focus a lot over time. If I'm honest, this wasn't always a result of proactive choices. It was more a case of having to adapt to changing circumstances and opportunities, but it definitely helped broaden my horizons and increased my confidence in dealing with change. Since moving to the Hutton, I have become interested in, and responsible for, the way we do science and the importance of ensuring the institute's research is robust, credible and trusted. I am also committed to supporting equality, diversity and inclusion across the organisation. My current role allows me to focus on these aspects.

## Essential qualities for this kind of role?

First and foremost the role requires a belief in the importance of research in addressing critical societal challenges like climate change and food insecurity. At a more pragmatic level, having good listening, negotiating and communication skills is also important as the job is mainly about supporting and bringing people together.

## Best thing about your job?

Constantly learning and meeting lots and lots of people from a wide variety of backgrounds, including the general public, other scientists, farmers, civil servants and government ministers.

## Anything you would change?

I wish I had more confidence throughout my career and trusted myself more. I still get nervous about lots of aspects of my role but realise that that isn't a bad thing!

## What might surprise people about what your work involves?

The scientists I work with at the institute come from all over the world and cover a huge range of disciplinary backgrounds, from molecular biologists looking at ways of improving crop traits through to anthropologists looking at the social impacts of onshore wind farms.



# Debbie Fielding

## What do you do?

I work within the Ecological Sciences department, working across a variety of projects, most of which focus on how land management affects biodiversity. As a research assistant I provide support to the researchers. This can involve contributing ideas during the early stages of project development, offering suggestions on appropriate methodology, collecting and managing data, as well as assisting with data analysis and report writing. However, as the projects I work on tend to have a large fieldwork component, much of my time is spent organising and carrying out fieldwork. This often involves obtaining access to sites, preparing maps and datasheets for use in the field, ensuring we have all the kit to collect the data and collecting the data itself. Vegetation surveying is my main area of expertise, however my fieldwork can be quite varied, involving vegetation monitoring, soil sampling and surveys of birds, mammals and earthworms.

**2005**

BSc (Hons), Environmental Conservation **University of Wales** Bangor

**2006**

MSc, Conservation and Land Management **University of Wales** Bangor

**2007**

Seasonal Field Surveyor **Thomson Ecology Ltd**

**2007-2008**

Conservation Officer **Countryside Council for Wales**

**2008-Present**

Research Assistant in the Ecological Science Group at the **The James Hutton Institute**

## How did you get into it?

I always enjoyed spending time outdoors and was interested in nature from a young age. This led me to study Environmental Conservation at university. My inquisitive mind and enjoyment of experimentation led me to pursue a career in ecological research. Before this research assistant role, I had a couple of short-term contracts where I gained useful skills for my current role. I also developed my practical survey skills through voluntary work which supplemented the theory I learnt at university.

## Essential qualities for this kind of role?

This job requires a high level of flexibility. Some work is highly seasonal. Due to the remoteness of many sites, long hours are sometimes required. Unfortunately the sun doesn't always shine, so a willingness to work in all weather conditions is a must, as is an ability to walk long distances on uneven terrain carrying lots of field kit!

## Best thing about your job?

The opportunity to work in some amazing places across Scotland.

## Anything you would change?

Spending lots of time away from home and the anti-social hours worked when carrying out bird surveys can be quite disruptive to social activities.

## What might surprise people about what your work involves?

One day I might be recording plant species, while another day I might be seeing what scavengers feed on deer carcasses, tracking deer with GPS collars or chasing sheep and cattle back into experimental plots and repairing fences so they don't escape again!





The James Hutton Institute hosts Biomathematics and Statistics Scotland (BioSS), which provides quantitative expertise to underpin research in the James Hutton Institute and its sister organisations (Moredun Research Institute, Rowett Institute, Royal Botanic Garden Edinburgh and Scotland's Rural College)



# Dr Helen Kettle

## What do you do?

I am a mathematical modeller at BioSS (Biomathematics and Statistics Scotland). My work involves simulating biological systems which span applications from gut bacteria in humans to managing crop pests. I spend time developing the equations that describe how the system changes with time and then I write these into a computer program so they can be solved to produce a simulation/prediction of what we think will happen in certain circumstances. We can then compare the results with any data we have to check if we really do understand the system we are studying.

**1991-1994**

Bsc **Lancaster University**

**1995**

Msc **Heriot Watt University**

**1996-1999**

PhD **Lancaster University**

**2000-2008**

Post doc and fellowship at **University of Edinburgh**

**2009-2021**

Mathematical modeller at **BioSS**

**2023**

Principal Researcher in Process & Systems Modelling Group **BioSS**

## How did you get into it?

I loved maths, physics and geography when I was at school so I did a degree involving maths, environmental/geo-physics. During my degree I realised applied maths was my true love so I did an MSc in mathematics of nonlinear models. After that I did a PhD on modelling solute dispersion in rivers. Following this I did two post-doctoral research posts at GeoSciences at The University of Edinburgh and then obtained a NERC personal Fellowship. Following that I joined BioSS as a mathematical modeller and thus moved from environmental systems to biological systems.

## Essential qualities for this kind of role?

I think you need to enjoy problem solving and since a lot of the work relies on collaborations with multiple people, you need to enjoy trying to explain your ideas to people who aren't experts in your field. Likewise you have to be committed to trying to understand new ideas and topics that you don't necessarily have a background in.

## Best thing about your job?

The best thing is the work is so interesting and I get to collaborate with talented and enthusiastic people! My job involves a very wide range of application areas so I feel like I am always learning something new. Also I love problem solving so programming is very enjoyable and satisfying – lots of little solvable problems! It is also very fulfilling when you write code (for example, a software package) that other people start using.

## Anything you would change?

Higher salary would be good but doing a job I love is (just about) sufficient compensation!

## What might surprise people about what your work involves?

People might be surprised how maths can be used to predict how your gut bacteria behave, how much methane cows produce and how spiders and parasitic insects can be used to control pests that damage crops!



# Helen Watson

## What do you do?

I am a research assistant in the Environmental and Biogeochemical Science Group. Over the years I have carried out a variety of field and laboratory work measuring water quality and quantity at our main research sites. I manage a small team of people and I'm responsible for leading a couple of small projects and for contributing to larger ones.

**1995**

BSc in Geography  
**University of Aberdeen**

**1997**

MSc Sustainable Agriculture  
**University of Aberdeen**

**1998**

Started at **Macaulay Land Use Research Institute**, Aberdeen (which became part of The James Hutton Institute in 2011)

**2013**

Birth of my son

**2014**

Return from year's maternity leave

## How did you get into it?

I was brought up on a farm and loved being outdoors. After completing my studies I wanted to remain in Scotland so that I had easy access to mountains and open spaces. But when I applied for "science jobs" for a couple of months nothing came up, so I decided to take time out to go mountaineering in South America (funding the trip by shop work). I returned, hopeful that I'd find something, and four months later I successfully applied for a job at the Macaulay institute in Aberdeen. I enjoyed studying whilst I was a university student, but my real sense of satisfaction came from practical work. I was fortunate enough to see a post advertised for a research assistant and thought I might be a good fit. When my son was born around five years ago I took a year off but returned to the same post and I continue to work full time. I've been in this role for 20 years and have been promoted a couple of times which demonstrates that progression within a technical team is possible, regardless of working part-time working hours due to family commitments.

## Essential qualities for this kind of role?

Some tenacity; things rarely work as you hope the first time!

## Best thing about your job?

I enjoy the variety in my day to day tasks and the challenge of solving problems: trying to get instruments to work, making emergency repairs to field equipment, collecting environmental data from remote locations - it can be a real treat to be outside on a cold, bright snowy day!

## Anything you would change?

No. In terms of my role I'm quite happy.

## What might surprise people about what your work involves?

I have collected samples by mountain bike, ski and snorkel (once, in a pond on the lawn of a stately home whilst a wedding was taking place with the full knowledge of the bride and groom).





# Dr Jean Robertson

## What do you do?

I work within the Environmental and Biochemical Sciences department. In my role, I use a technique called infrared spectroscopy to analyse all different types of materials and determine what they are made of or how their composition has changed. The samples I look at can be either for research projects and are things such as rocks, soil, fungi or crops or are commercial samples such as chemicals and products from industry. The many different roles, all part-time since 1991, were taken on to balance keeping an interesting science based job, while fitting round having a family and farm outside of work.

## How did you get into it?

The institute needed an infrared (IR) spectroscopist and I had used this technique before during my PhD, although in a completely different type

of work, and absolutely loved it. I was later appointed head of the IR Section.

## Essential qualities for this kind of role?

An aptitude for problem solving and troubleshooting is definitely needed, as is the ability to communicate effectively. Being able to successfully apply chemical knowledge to new and different areas of work is also necessary.

## Best thing about your job?

One of the best things is successfully solving problems, for clients or in research. The diversity of the job and the amount of new things I am continually learning is also great.

## Anything you would change?

Having too much to do in too little time (both at home and work!)

## What might surprise people about what your work involves?

All the problem solving and insight that I can give people, into both natural and manmade systems, is essentially done through looking at a squiggly line on a computer screen. People have told me that they thought I was just making it up – until I was proved right!

**1986**

BSc Hons in Chemistry  
**University of Aberdeen**

**1987**

Married and moved on to the family farm in Aberdeenshire

**1990**

PhD in Organometallic Chemistry  
**University of Aberdeen**

**1990-1991**

Research Fellow, studying conducting glass, University of Aberdeen

**1991**

Daughter born

**1991-1997**

Foundation Science Tutor with the Open University

**1992-1994**

Lecturer in Chemistry,  
**Aberdeen College**

**1993**

First son born

**1995**

Teaching fellow. **University of Aberdeen**

**1996-1999**

Research Fellow, developing thin film batteries, University of Aberdeen

**1998**

Second son born

**1999-2002**

Research and Teaching Fellow, University of Aberdeen

**2002-2003**

Lecturer in Chemistry at **RGU**

**2004**

Joined the then Macaulay institute as an infrared spectroscopist

**2005-present**

Head of the IR Section, The James Hutton Institute



# Dr Katherine Irvine

## What do you do?

I work in the Social, Economic and Geographical Sciences group. I study the relationship between people and natural environments, how contact with nature might benefit our health and wellbeing, and how we might live more sustainably. I work outdoors and indoors, both on my own and with other researchers (some in different disciplines), as well as non-academics using a variety of methods such as statistics and interviews. My projects look at the wellbeing benefits of biodiverse environments, how to assess the impact of nature-based activities such as group walks and how to involve people in creating a more sustainable world.

## How did you get into it?

I was going to go to medical school, but a summer on a sailing ship studying the marine environment reminded me how much I loved being outside in nature. I took a job as an environmental educator helping high school kids to explore and learn about the Chesapeake Bay in the USA. I went on to help foresters, teachers, park managers and the like from around the world learn from each other, then worked as a consultant

helping set-up environmental education programs in Africa and the Caribbean. I saw first-hand how just being in the natural environment helped transform our outlook on the world. I decided to find out why.

## Essential qualities for this kind of role?

Patience: science is a creative profession, often with no fixed time by which we will find answers to the questions we have. Ability to work with both words and numbers: some researchers work almost exclusively with numbers or with words; I use both. Reading and writing academic literature to keep up with the research that other people are doing, as their findings can shed light on my work, and vice versa. Science involves talking and working with a wide range of people, sharing ideas and recruiting people to take part in my studies.

## Best thing about your job?

The opportunity to play with ideas and see how different things fit together; a facet of being a researcher in general. I like working to help bring us closer to the natural environment.

## Anything you would change?

I wish there were not so much paperwork associated with being a researcher and more administrative help with “housekeeping” jobs arising from the work.

## What might surprise people about what your work involves?

There are no lab coats.

**1986**

BA in Biology **Haverford College** (USA)

**1986**

Environmental Educator at the **Chesapeake Bay Foundation** (USA) and Research Scientist in the Caribbean

**1990**

Environmental Education Consultant

**1997**

MSc in Natural Resource Policy and Behaviour **University of Michigan**

**1997**

Lecturer at **University of Michigan**

**2004**

PhD in Environmental Psychology **University of Michigan**

**2005**

Senior Researcher/ Senior Lecturer at Institute of Energy & Sustainable Development **De Montfort University** Leicester

**2013**

Senior Researcher at **The James Hutton Institute**, Aberdeen





# Prof Lee-Ann Sutherland

## What do you do?

I'm the Director of Hutton's International Land Use Study Centre (ILUSC). It involves a wide range of activities, focused on leading strategic decision-making about new research, contributing to senior management, and working with our architect and project management team to build the "Nature-based Solutions Space" – a redevelopment and extension of the main building on our Craigmyle site. I'm also developing "open science awards" to recognise staff and external scientists who are making great headway in opening up our science, as well as leading research for Scottish Government in areas of my scientific expertise – farmer decision-making. It's a varied role with a lot of flexibility – there is always more that I could be doing!

## How did you get into it?

I grew up on a farm in Canada, which gave me a real passion for farmers and the challenges they face in trying to make a living while caring for the land and their livestock. I took a bit of a circuitous route into academia – my first degree is in occupational therapy, which has come in very handy for thinking through accessibility issues for the Nature-based Solutions Space. I pursued graduate degrees in international development and the sociology of agriculture, which is where I really got hooked – I loved academic research.

- 1995**  
Bachelor of Science in Occupational Therapy  
**Queen's University**  
Canada
- 2000**  
Master of Science in Rural Planning and Development  
**University of Guelph**  
Canada
- 2005**  
Doctor of Philosophy,  
**University of Aberdeen**
- 2005**  
Social Scientist  
**Macaulay Land Use Research Institute**  
Aberdeen
- 2011**  
Senior Social Scientist: **The James Hutton Institute**  
Aberdeen
- 2020**  
Director of **International Land Use Study Centre**

## Essential qualities for this kind of role?

Curiosity and flexibility – you need to be interested in a lot of issues to be able to lead research across the broad range of topics included under "land use". Flexibility is crucial – you have to be able to reprioritise at short notice when new opportunities appear. You also have to have incurable optimism – that new proposals will be funded, that ideas will work. It also helps to be organised – to keep on top of competing deadlines and still make progress towards longer term goals.

## Best thing about your job?

I get to make a difference in people's lives – my research is increasingly focusing on social justice, enabling new entrants to come into farming, promoting women in agriculture and highlighting the lack of diversity in the sector. I love that I get paid to learn about things I'm interested in and to travel to tell people about what I've learned and where the Hutton is heading. I've got a fair bit of freedom to set my own agenda – from how I develop ILUSC to the research proposals I submit and the partners I work with – and therefore visit! I tell people I have the best job ever, and I mean it.

## Anything you would change?

At this level there is always a fair bit of bureaucracy – reporting on projects and activities, crunching numbers, sitting in meetings. Of course the checks and balances are necessary, but it can be quite tedious and time consuming. It can also be quite draining to have meetings about six different projects or activities in the same day! I'm getting better at managing my calendar to group related activities together.

## What might surprise people about what your work involves?

Playing computer games! We're developing a set of virtual reality and PC games to engage farmers and practitioners in learning, but I've also published on my own recreational computer game play – assessing the implicit messages embedded in farming games. There are literally millions of people playing farming computer games who may never set foot on an actual farm; what they are learning through their game play will influence how they think farming is or should be. Throughout history, games have been humanity's way of teaching and passing on wisdom – I see tremendous potential in games to enable us to make the behavioural changes needed to address climate change; biodiversity loss; food, fuel and water security; and ensure that the transition towards net zero is both social and environmentally just.



# Prof Lorna Dawson

## What do you do?

I am head of the Centre for Forensic Soil Science at The James Hutton Institute, which works across disciplines from forestry to molecular biology. I work with police, forensic scientists and lawyers on areas such as food authenticity, searching for missing people, contaminated land, serious crime, evaluating evidence, report writing, and presenting evidence in court. Another part of my work involves coordinating information and expertise from Scottish Government-funded research on food, agriculture and environment and making sure it reaches and is used by people who will apply it to policy-making and industrial practice. I value the importance of science communication, whether that is in court or talking to a farmer over the farm gate. A component of my communication is working with crime writers and TV producers on correct forensic practice and have had the privilege of working with authors Val McDermid, Mark Billingham, Ian Rankin, Ann Cleeves, Lin Anderson and Alex Gray, and have advised on TV dramas such as Vera, Shetland and Silent Witness, and on programmes such as the 2022 Christmas lecture and University Challenge. I've also produced materials and teaching aids for school geography courses such as soils posters for higher geography. I was delighted to be recognised with a Pride of Britain Award in 2017 for assisting and communicating in the criminal justice system.

**1980**

Bsc (Hons) Geography  
**University of Edinburgh**

**1984**

PhD Soil Science  
**University of Aberdeen**

**1984**

Joined **Macauley Institute**

**1989**

Eldest child born

**1991**

Second child born

**1994**

Third child born

**2006**

Head of Centre for Forensic  
Soil Science, James Hutton  
Institute

**2007**

Changed direction to Forensic  
soil science

**2009**

Visiting professor at **RGU**

**2009**

Chartered Scientist status

**2010**

Expert Witness Certificate  
Criminal law  
**Cardiff University**

**2010**

Registered Expert with the  
**National Crime Agency**

**2011**

Science Communications  
Master Class

**2017**

Fellow of the Royal Society of  
Arts

**2018**

Pride of Britain Award for  
service to forensic science

**2019**

Commander of the Order of  
the British Empire for services  
to soil and forensic science

**2020**

Fellow of the Royal Society of  
Edinburgh

**2021**

Diploma in Scots Criminal law

**2023**

Awarded the RSE James Hutton  
medal for excellence in earth  
and environmental science

**2023**

Commissioner of the Food  
Farming and Countryside  
Commission

## How did you get into it?

I always loved the outdoors, and grew up on a farm. My dad was a Special Constable and I also always loved mystery books in my youth! I was initially motivated to help farmers produce better crops. Now I mainly work on criminal cases to assist the triers of fact reach the truth and minimise human suffering. I guess I'm motivated by helping to improve people's lives.

## Essential qualities for this kind of role?

I can sleep anywhere at any time so have been able to work long hours and travel extensively, without it affecting my sleep pattern or appearance in public! I have an enquiring mind and am very determined to find an answer to any question posed to me. I really enjoy being part of investigative teams working on cold cases and pulling information together; useful in forensic reporting and also in work with industry and policy.

## Best thing about your job?

The variety of the work - no two days are ever the same, whether attending a crime scene or speaking to a farmers group, or to a class of school pupils about science. Another great thing about my job is working with and meeting really interesting people.

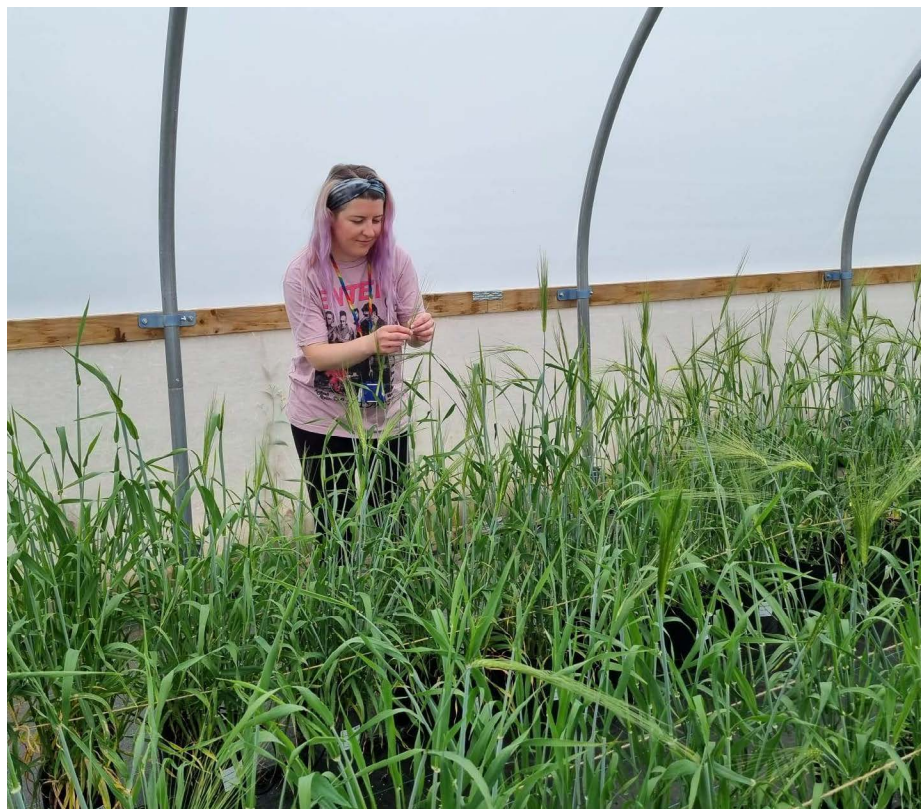
## Anything you would change?

Apart from "more funding", I'd encourage scientists to communicate the outputs and outcomes from their research better by working with science communicators. I would also try to promote people to work more across disciplines and professions as I have gained so much from marrying soil science with law and forensic science.

## What might surprise people about what your work involves?

I work in really strange places at times, such as in a wet cold woodland recovering a body as well as taking part in activities involving sampling while abseiling off a cliff! I've also had to work in a secure unit in a police station, analysing golden artefacts so valuable, they had to stay in police custody.





# Ruth Hamilton

## What do you do?

I work as a barley geneticist with the barley group based at Dundee, currently working on the R-evolve project. Cultivated barley (*Hordeum vulgare* ssp. *vulgare*) was domesticated from its wild relative (*Hordeum vulgare* ssp. *spontaneum*) around 10,000 years ago in the fertile crescent. We are crossing wild barley with elite modern barley to “rapidly evolve” wild barley, with genes most important for researchers and farmers. The aim is to improve genetic variation in the barley gene pool. Wild barley is adapted to extreme environmental conditions like desert/ mountain regions. We hope to produce beneficial breeding material for a changing climate.

**2008-2012**  
**University of Glasgow**  
B.Sc. (Hons.) Genetics

**2012-2014**  
Sushi chef

**2014-2015**  
**University of Glasgow**  
M.Sc. Food Security

**2015-2020**  
**University of Dundee**  
Ph.D. in the Division of Plant sciences at **The James Hutton Institute**. Thesis titled “Genomic selection for accelerated barley breeding”

**2020-2021**  
PDRA ERC SHUFFLE project **The James Hutton Institute**

**2021**  
Lab technician GCRF project **University of Dundee at the Hutton** with Dr Sarah McKim

**2021-2026**  
R-evolve project **the Hutton**

## How did you get into it?

I was interested in biology in high school (even though it was my worst science grade!) so applied to do genetics at university. I quickly realised I was much more interested in plants and food production than human/animal genetics. One undergraduate course about biotechnology and global change inspired me that the time is now to focus on crops and the environment.

## Essential qualities for this kind of role?

You need to be organised and detailed focused. The most important quality is resilience, sometimes practical work doesn’t go as planned and that’s okay.

## Best thing about your job?

I love that my job is in tune with the seasons. I would hate to be in a role where I’m doing the same tasks year-round. I’m interested in old and heritage crop varieties, its exciting feeling like you are part of something bigger: with wild barley it’s the beginning of humanity farming, and with heritage varieties you feel attached to the farmers and breeders who came before us.

## Anything you would change?

If only research related to food production/the environment was funded as well as biomedical sciences. People with extreme wealth aren’t worried about food security.

## What might surprise people about what your work involves?

I think people would be surprised how much time/effort/resources goes into producing results. If you love the subject you work on it doesn’t feel like effort, I’m fortunate to be doing a job I love so much.



# Dr Trinity Senda Ndlovu

## What do you do?

I am an Agroecosystem Ecologist within the agroecology group in the Ecological Sciences department. I am currently working on qualitative socio-ecological modelling in agroecology projects. My work also involves agroecosystems sustainability assessments and agroecology performance evaluation. My background is animal science, but in the last few years I have moved more towards a system wide approach to understanding interactions between and within the human-natural systems.

## How did you get into it?

Throughout my high school life, I was so sure that I wanted to be a medical doctor, but when I couldn't make the cut off points for entry into medical school, I had to rethink my options. This is why I decided to study livestock and wildlife management. I was certain I did not wish to study crops science because I was born and raised in the rural areas and working in the crop fields was not for me. After doing my work-related learning at a livestock research institute, I knew I wanted to follow a career in agricultural research.

**2005**

BSc. Livestock and Wildlife Management, **Midlands State University**, Zimbabwe

**2005**

Research Officer  
- **Department of Research and Specialist Services, Matopos**, Zimbabwe

**2005**

Birth of first child (son)

**2008**

Birth second child (daughter)

**2015**

MSc. Sustainable Agriculture. **University of the Free State**, South Africa

**2017**

Left Research officer job at **Matopos**.  
Graduate Fellow,  
**International Livestock Research Institute**, Kenya.

**2021**

Livestock Coordinator,  
**Cultivating New Frontiers in Agriculture**, Zimbabwe

**2021**

Livestock and Rangelands Specialist, **Food and Agriculture Organisation**, Zimbabwe

**2022**

PhD Management of Agroecosystems and the Environment, **University of Nairobi**, Kenya

**2022**

Agroecosystem Ecologist,  
**The James Hutton Institute**, Dundee, Scotland

## Essential qualities for this kind of role?

Adaptability. With agroecology research I have discovered that you can work anywhere and meet lots of new challenges and hence one needs to be able to adapt quickly. Secondly, in this job you make a "million" presentations, therefore good writing and presentation skills are important. Another key skill is to be able to think multidimensionally and be aware of the scale at which things are happening, for example, from household to landscape scale.

## Best thing about your job?

I would definitely say travelling. From the start of my career to date I have, had work-related travel to exactly 21 countries and it's been such an enlightening experience. This has given me an opportunity to see the world from different angles, meet different people, interact with different cultures and reflect.

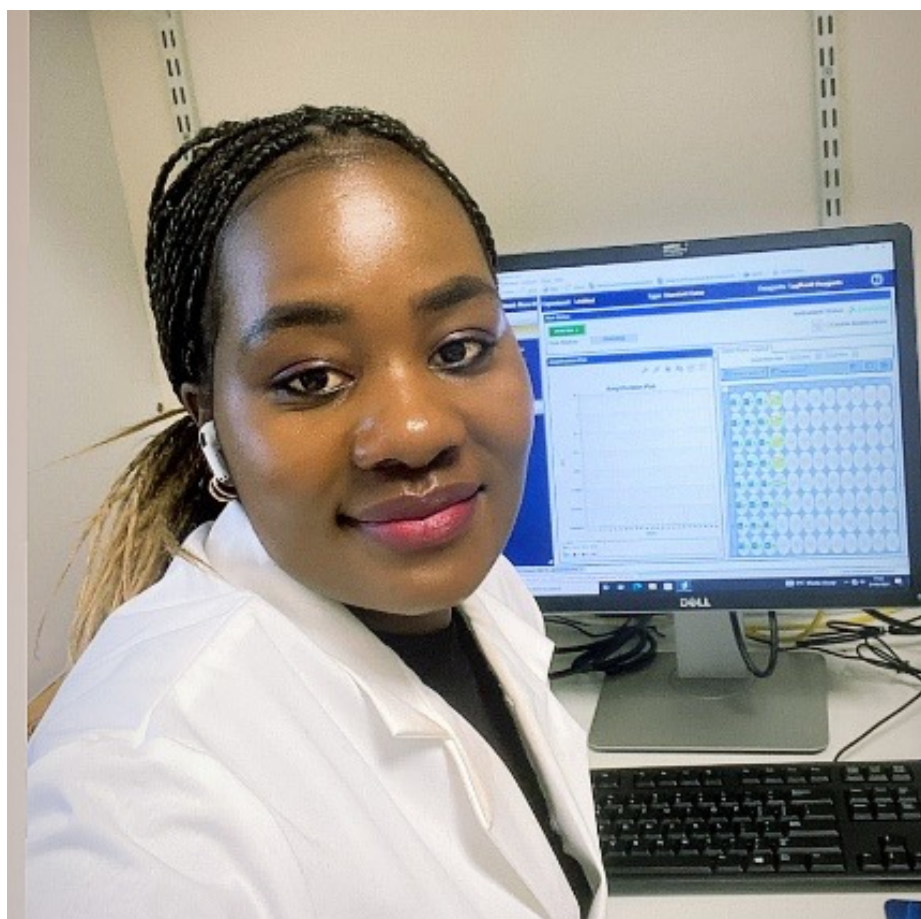
## Anything you would change?

The job is satisfying, but if I could change one thing about it, I would give myself an exceptionally good remuneration.

## What might surprise people about what your work involves?

It may be surprising to a non-scientific audience that you can conduct research and publish it with co-authors that you have never met in person but all virtually. Another thing is that you are forever reading and learning new things.





# Vongai Chekanai

## What do you do?

I am a nematologist currently enrolled for a Doctor of Philosophy Degree funded under The James Hutton Institute Ecological Sciences department. Root-lesion and stem and bulb nematodes are serious plant parasites in the UK daffodil/Narcissi industry, but their management is constrained by the non-availability of nematicides. I work with a team of senior scientists, daffodil growers, agronomists and other stakeholders to search for environmentally friendly ways of managing nematodes in Scottish fields and the Isles of Scilly, off Cornwall. My main interest is using nematode-suppressive cover crops and their “nematode-toxic” phytochemicals to develop sustainable integrated nematode management approaches.

## How did you get into it?

When I worked in the agrochemical industry, I developed an interest in plant pathology/entomology. After moving to Belgium for my second Masters, applied nematology enticed me because it’s a combination of both agronomy and plant pathology. Upon finishing my Masters, I applied for this PHD position funded by The James Hutton Institute, Harper Adams University, Scottish Agronomy Ltd, Grampian Growers, Hutchisons Ltd and Association of Isles of Scilly Growers.

## Essential qualities for this kind of role?

I would say a combination of curiosity/interest, willingness to learn and persistence to continue even when things go wrong (for example an experiment fails). Personally, I enjoy problem-solving and contributing to projects that impact agricultural productivity and a healthier environment.

## Best thing about your job?

Learning new things every day, the ability to work in the labs and outdoors, and the network you get to build with other scientists globally.

## Anything you would change?

I wish I had done more statistical courses.

## What might surprise people about what your work involves?

That sometimes I use my eyelash to pick nematodes.

- 2014**  
 BSc. Hons in Crop Science,  
**University of Zimbabwe**
- 2017**  
 Master of Philosophy in  
 Agronomy, **University of Zimbabwe**
- 2018**  
 Technical agronomist,  
**FossilAgro (chemicals) Ltd,**  
 Zimbabwe
- 2020**  
 Master in Agro- and  
 Environmental Nematology,  
**Ghent University,** Belgium
- 2021-present**  
 PHD student, **The James Hutton Institute,** Harper Adams University

## In memoriam of dear colleagues



**Dr Vivian Blok**



**Louise Shepherd**

We pay tribute to our esteemed colleagues who are sadly no longer with us, expressing our deep gratitude for the skills, experience, and passion they brought during their time working at the James Hutton Institute.







## Aberdeen

The James Hutton Institute  
Craigiebuckler  
Aberdeen AB15 8QH  
Scotland  
UK

## Dundee

The James Hutton Institute  
Invergowrie  
Dundee DD2 5DA  
Scotland  
UK

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hutton.ac.uk

## Farms

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Invergowrie  
Dundee DD2 5LJ

Glensaugh Research Farm  
Laurencekirk  
Aberdeenshire AB30 1HB