



# MONOGRAM

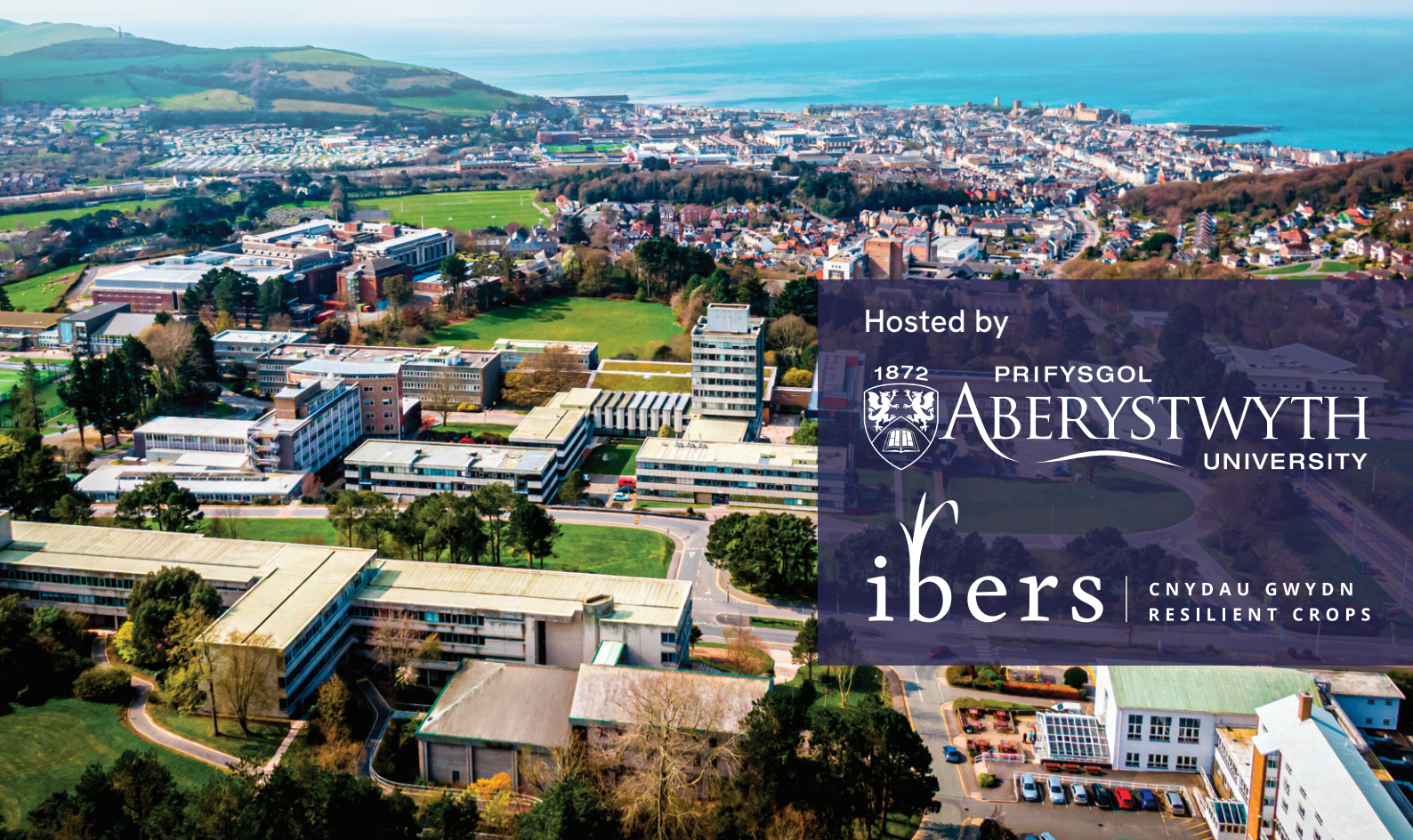
CEREALS & GRASSES RESEARCH NETWORK

Programme Booklet Sponsored By:



# 2025

7 - 10 April



Hosted by



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**ABERYSTWYTH**  
UNIVERSITY



**ibers**

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RESILIENT CROPS

# About Monogram

The Monogram Network consists of UK based researchers with an active interest in small grain cereal and grass (including the C4 energy grasses) research. Commercial scientists and plant breeders are active members and provide the link between Monogram science and commercial exploitation. Monogram includes both basic and more applied research and its members span disciplines including plant genetics, physiology, pathology, breeding, and bioinformatics. We also have extensive expertise in outreach activities and links with industry.

## Our aim is to promote:

**Coordinated Research:** Enhance coordination and information flow within the community, boosting visibility nationally and internationally to strengthen UK efforts.

**Community Integration:** Serve as the focal point for the UK grass and cereals community, representing it at the UK Plant Sciences Federation and integrating with the broader plant sciences community.

**Lowering Entry Barriers:** Facilitate entry for new researchers in the field.

## Our Steering Group

**Stéphanie Swarbreck**  
(NIAB), Chair

**Joshua Ham**  
(RAGT)

**Miriam Schreiber**  
(James Hutton Institute)

**Elizabete Carmo-Silva**  
(Lancaster University)

**Carus John-Bejai**  
(KWS)

**Aiswarya Girija**  
(Aberystwyth University)

**Carmen Escudero-Martinez**  
(University of Dundee)

**Christophe Lambing**  
(Rothamsted Research)

**Jake Bishop**  
(University of Reading)

**Rachel Goddard**  
(Limagrain)

**Paul Nicholson**  
(John Innes Centre)

**Nikki Walter**  
(University of Nottingham)

**Surbhi Grewal**  
(University of Nottingham)



# Welcome

## Welcome to Aberystwyth University and Monogram 2025

Aberystwyth University, Wales' first university college, has been a hub of teaching and research excellence for over 150 years, inspiring global change through knowledge and community building. It drives innovation, supports the Welsh language, and fosters a globally connected, prosperous Wales. Located on Wales' west coast, the university offers an inclusive, bilingual, and vibrant learning environment in a safe and welcoming community.

### Institute of Biological, Environmental & Rural Sciences (IBERS).

IBERS' vision is to carry out research to ensure that humanity can sustainably produce the food, feed and plant based industrial resources it needs. It is a national capability in grassland and plant breeding science located at Gogerddan and is a leading research centre specialising in biological, environmental, and rural sciences. It focuses on innovation in agriculture, sustainability, and climate resilience, contributing to global food security and environmental conservation.



Work within IBERS is focused on crop science and plant breeding - forage crops, grains for health, and industrial crops. Our core capabilities include genomics, plant phenomics and Controlled Environment Agriculture at the National Plant Phenomics Centre, studying upland farmed ecosystems at the Pwllpeiran Upland Research Centre, downstream utilisation including biomass conversion and biorefining, and agricultural systems to deliver net-zero livestock systems.

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On behalf of Monogram 2025 organizing committee  
Aiswarya, Alison, Catherine, Gancho

# Agenda

## MONOGRAM: ECR Skill Building Pre-conference Workshop



13:30 - 14:00 **ECR registration**  
14:00 - 14:15 Welcome by Nikki Walter, University of Birmingham  
14:15 - 15:45 **Workshop 1: Navigating Career Pathways after PhD;** Speakers: Laura Dixon (IPK), Carus John-Bejai (KWS), and Lorna McAusland (University of Nottingham)

15:45 - 16:15 Coffee Break with Snacks

16:15 - 17:30 **Workshop 2: Making the Most of Conferences;** Speaker: Elizabete Carmo-Silva (Lancaster University) and **Introduction to Mentoring;** Speaker: Stéphanie Swarbreck (NIAB)  
17:30 - 18:30 Informal poster session with drinks

18:30 - 22:00 Dinner and Science Pub Quiz

## MONOGRAM: Day 1, Tuesday 8 April 2025

8:30 - 9:30 Arrival and Registration with coffee  
9:30 - 9:35 Welcome by Prof Iain Donnison, IBERS, Aberystwyth University

### 9:40 - 10:30 SESSION 1: Rank Prize Session



9:35 - 9:40 Session opening by Aiswarya Girija, IBERS  
9:40 - 9:50 Introduction to Rank Prize by Michael Gooding  
9:50 - 10:30 **Rank Prize Keynote Lecture by Janneke Balk, JIC, UK**  
"Mineral biofortification of crops: from Arabidopsis to wheat field trials"

10:30 - 11:00 Coffee Break



11:00 - 12:30 **SESSION 2: Crop Diversification for Food, Forage and Bioenergy:**  
Session chairs: Catherine Howarth (IBERS) and Carus John-Bejai (KWS)

11:00 - 11:30 **Keynote Speaker: Simon Griffiths, JIC "Breeding: Why we need to start all over again"**  
11:30 - 11:45 Noam Chayut, JIC, UK "Genebank-Omics: A Vision for Diversifying Global Food Crops Exemplified by the A.E. Watkins Durum Landrace Project"  
11:45 - 12:00 Maximillian Jones, JIC, UK "k-mer GWAS uncovers loci for trait improvement in the indigenous African cereal Tef"  
12:00 - 12:15 Jake Hill, University of Nottingham, UK "Aegilops umbellulata: A wheat wild relative giving heat tolerance to wheat"  
12:15 - 12:30 Jake Bishop, University of Reading, UK "Drivers of yield variability in major UK arable crops"




12:30 - 13:30 Lunch



13:30 - 15:00	<b>SESSION 3: Abiotic and Biotic Stress Management for Resilience:</b> Session chairs: Carmen Escudero-Martinez (University of Dundee) and Rachel Goddard (Limagrain)	
13:30 - 14:00	<b>Keynote Speaker: Pallavi Singh, University of Essex, Let the "Hard Graft" begin: Understanding and enhancing water use efficiency in crops</b>	
14:00 - 14:15	Emily Radford, Aberystwyth University, "Engineering myxobacterial super predators to fight crop disease"	
14:15 - 14:30	Oliver Powell, King Abdullah University of Science and Technology "A wheat tandem kinase activates an NLR to trigger immunity"	
14:30 - 14:45	Sibongile Zimba, University of Bristol "Uncovering mechanisms and pathways underlying root growth angle regulation in response to drought stress"	
14:45 - 15:00	Jessica Shadbolt, The James Hutton Institute, Scotland, UK "Good copper, bad copper: Characterising the physiological implications of contrasting alleles of HvHMA5 in barley"	
15:00 - 15:30	Coffee Break	
15:30 - 18:00	<b>SESSION 4: Farm to Fork: Quality and Nutrition</b> Session chairs: Joshua (RAGT) and Petros Zafeiriou (JIC)	
15:30 - 16:00	<b>Keynote Speaker: Catherine Howarth, IBERS, Aberystwyth University, "Improving the Oat Crop for Sustainability and Quality"</b>	
16:00 - 16:20	Elena Baldoni, CNR-IBBA "Integrated GWAS and metabolomic analyses provide novel details about the genetic basis of free asparagine accumulation in durum wheat grains"	
16:20 - 16:40	Ondrej Kosik, Rothamsted Research UK "Approaches to increase cereal dietary fibre content to help combat chronic diseases"	
16:40 - 17:00	Aiswarya Girija, IBERS, Aberystwyth University "Sprouting for biofortification of cereal based foods"	
17:00 - 17:30	Selected Poster Flash talks (2-minute presentations)	 
17:30 - 19:30	Poster Session in Medrus 1 with Welsh Whiskey and Cheese tasting session, followed by poster selection for awards by session chairs	  

## MONOGRAM: Day 2, Wednesday 9 April 2025

8:00 - 9:00	<b>Stronger Together: Equality, Diversity &amp; Inclusion Over Coffee:</b> Join us for an interactive and informal coffee session to engage in EDI conversations	
9:00 - 11:00	<b>SESSION 5: Physiology and Resource Use</b> Session chairs: Philippa Borrill (JIC) and Guillermina Mendiondo (University of Nottingham)	
9:00 - 9:30	<b>Keynote Speaker: Lorna McAusland, University of Nottingham "Turning up the heat; assessing photosynthetic acclimation to heat from wheat leaf to spike"</b>	
9:30 - 9:50	Wanxin Chen, Rothamsted Research, UK "Mutation of Sucrose: Fructan 6-fructosyltransferase (6-sft) in Hexaploid wheat reduced susceptibility to biotrophic fungi"	
9:50 - 10:10	Guy Golan, IPK "Variation in growth scaling shapes wheat adaptation"	

10:10 - 10:30 Chen Ji, JIC, UK "Spatial Transcriptomics Reveals Key Mechanisms of Sucrose Transport in Wheat Grain Development"

10:30 - 11:00 Coffee Break



**11:00 - 12:30 SESSION 6: Crop Genomics and Bioinformatics**

Session chairs: Christophe Lambing (Rothamsted Research) and Gancho Slavov (IBERS)

11:00 - 11:30 **Keynote Speaker: Martin Mascher, Leibniz Institute of Plant Genetics and Crop Plant Research (IPK) "Barley crop evolution through the lens of pangenomics"**

11:30 - 11:50 Surbhi Grewal, University of Nottingham "Chromosome-scale assembly of wheat wild relatives enables identification of new introgressions in wheat"

11:50 - 12:10 Delfi Dorussen, JIC, UK "Unravelling the role of DNA methylation in polyploid wheat using met1-1 mutants"

12:10 - 12:30 Chidimma Gift Omenoba-Nee Ubah, University of Bath "Location matters - Gene Expression and Fusarium Head Blight Response in diverse Wheat-Rye introgression lines"

12:30 - 13:30 Lunch

**13:30 - 15:00 SESSION 7: Below and Above Ground Development for Growth and Adaptation**

Session chairs: Nikolai Adamski (JIC) and Laura Dixon (IPK)



13:30 - 14:00 **Keynote Speaker: Stéphanie Swarbreck, NIAB "Cereals for low input & regenerative agriculture"**

14:00 - 14:15 Stephen Pearce, Rothamsted Research "Beyond the Green Revolution: Novel dwarfing alleles for wheat and barley improvement"

14:15 - 14:30 Indi Lacey, University of Leeds "The fast and the floriferous: Accelerating winter wheat lifecycles using controlled conditions"

14:30 - 14:45 Deepak Kumar, Leibniz Institute of Plant Genetics and Crop Plant Research "Vision for hybrid wheat through key male trait integration: A path to optimized grain set"

14:45 - 15:00 Zhenru Guo, IPK "BRANCHED SHOOT 1, a key hub gene of whole plant architecture in bread wheat"

15:00 - 15:30 Coffee Break

15:30 - 15:45 **MONOGRAM GROUP Photo Session**

16:00 - 17:00 IBERS Gogerddan Optional Tour: National Plant Phenomics, Seed Biobank, Biorefining

19:30 - 21:30 **Gala Dinner in Medrus**



## MONOGRAM: Day 3, Thursday 10 April 2025

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8:30 - 9:00	Coffee
9:00 - 10:30	<b>SESSION 8: Phenomics and AI for precision crop improvement</b> Session chairs: Surbhi Grewal (University of Nottingham) and Jake Bishop (University of Reading)
9:00 - 9:30	<b>Keynote Speaker : Ji Zhou, NIAB, UK (Online via Teams) "The use of AI-powered analytics to study growth dynamics and their association to key yield components in wheat"</b>
9:30 - 9:45	Martin Vickers, JIC "Scaling up drone phenotyping at the John Innes Centre"
9:45 - 10:00	Andrew Riche, Rothamsted Research "Drone-based hyperspectral imaging for phenotyping small plot field experiments"
10:00 - 10:15	Lucy Mahony, Earlham Institute "Decoding the regulatory regions of wheat using bioinformatics and machine learning"
10:15 - 10:30	Nick Bird, KWS, UK "An efficient alternative system for hybrid wheat production"
10:30 - 11:00	Coffee Break
11:00 - 12:00	<b>SESSION 9: ECR New Lecture Rank Prize and Monogram Early Career Excellence Awards (MECEA) Winner Talks</b> Session chair: Malcolm Macaulay (James Hutton Institute)
11:00 - 11:20	ECR New Lecture Rank Prize, Jim Fouracre, University of Bristol "Harnessing SPL Transcription factors for real yield increases in false flax"
11:20 - 11:40	MECEA Winner PhD: Katie Long, JIC, UK "Mapping the Wheat Inflorescence with Spatial Transcriptomics"
11:40 - 12:00	MECEA Winner PhD: Isabel Faci-Gomez, JIC, UK "Temperature and photoperiod interaction: Releasing aerial branching in wheat"
12:00 - 12:30	Announcement of Best Poster Awards and MONOGRAM 2026
12:30 - 13:30	Lunch



**End of Conference**





# Speakers



**Janneke Balk**  
John Innes Centre



Janneke Balk is a senior researcher in plant biochemistry, currently holding a joint position at the John Innes Centre and the University of East Anglia on the Norwich Research Park. She began her independent research group at the University of Cambridge in 2005, before relocating to Norwich in 2011 to further her internationally recognized work on iron metabolism in plants.

Her research focuses on how plants balance iron uptake with cellular and developmental demands. Using genetic and biochemical approaches, her lab studies the molecular mechanisms governing iron uptake from the soil, transport and distribution to different organs, and iron storage in seeds. Knowledge gained from the model organism *Arabidopsis* is transferred to crops such as wheat and pea, to test strategies for increasing the iron content and bioavailability in plant-based foods to address human nutritional deficiencies.



**Simon Griffiths**  
John Innes Centre



Dr. Simon Griffiths is a prominent researcher in wheat genetics, serving as the leader of the Delivering Sustainable Wheat (DSW) Institute Strategic Programme (ISP). His work focuses on advancing sustainable agriculture by leveraging innovative genetic and genomic tools to improve wheat varieties. Dr. Griffiths and his team specialize in discovering and utilizing genetic diversity from the AE Watkins collection of bread wheat landraces, a unique resource of ancient wheat varieties. Their research translates these discoveries into practical breeding applications, targeting marker-assisted selection and gene editing. These priorities are defined in collaboration with the DSW Breeders Toolkit Committee, ensuring alignment with the needs of the wheat breeding community. Dr. Griffiths' team applies cutting-edge genetics and genomics techniques to dissect key traits that are critical for wheat improvement. Through close collaboration with breeders and stakeholders, Dr. Griffiths' work bridges the gap between fundamental science and applied breeding. His research is driving innovations that contribute to sustainable food systems and global food security.



## **Pallavi Singh**

### **University of Essex**

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Dr. Pallavi Singh is a Lecturer in the School of Life Sciences, University of Essex, where she leads a research group dedicated to enhancing photosynthesis and plant productivity. Her work focuses on improving water use efficiency and overall plant water use strategies, employing both natural variation and advanced single-cell approaches to dissect these complex traits. Dr. Singh earned her Ph.D. from the National Institute of Plant Genome Research (NIPGR) in India, where she investigated the mechanisms underpinning flooding tolerance in rice. She then conducted postdoctoral research at Cornell University, USA, focusing on rice-pathogen interactions, and a Research Fellowship at Department of Plant Sciences, University of Cambridge working on transcriptional regulation of C4 photosynthesis and cereal grafting in 2024, Dr. Singh was awarded a prestigious UK Research and Innovation (UKRI) Future Leaders Fellowship, securing over £2 million in funding to develop climate change-resistant strains of rice. This project aims to adapt rice at a genetic level to cope with dwindling freshwater supplies, addressing the anticipated largest shortfall in the global rice market in two decades. As part of this initiative, she collaborates with farmers in Southeast Asia and the International Rice Research Institute (IRRI) to promote sustainable rice production. Dr. Singh's research employs advanced interdisciplinary technologies to drive significant advancements in agricultural productivity and sustainability.



## **Catherine Howarth**

### **IBERS, Aberystwyth University**

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Dr. Catherine Howarth is a Reader at the Institute of Biological, Environmental, and Rural Sciences (IBERS) at Aberystwyth University. Her research focuses on utilizing DNA markers and trait analysis to understand the genetic and physiological foundations of key agronomic traits in cereals, particularly oats. She leads the oats breeding and improvement research in IBERS. Her work aims to enhance sustainable production, disease resistance, stress tolerance, and end-use quality through marker-assisted and phenotypic selection. Dr. Howarth's contributions significantly impact the field of plant genetics and breeding, promoting sustainable agriculture and food security.



## Lorna McAusland

### University of Nottingham



Dr. Lorna McAusland is a Research Fellow in the Faculty of Science at the University of Nottingham, specializing in plant physiology with a focus on photosynthesis and stomatal responses to environmental stimuli. She earned her Ph.D. in Plant Physiology from the University of Essex in 2014. Following her doctorate, Dr. McAusland contributed to the Realizing Increased Photosynthetic Efficiency (RIPE) project, investigating how multigene manipulation of photosynthetic carbon assimilation can enhance CO<sub>2</sub> fixation and biomass yield in tobacco. In 2015, she joined Professor Erik Murchie's group at the University of Nottingham as a postdoctoral fellow funded by Innovate UK, developing sensors and LED-based technologies to improve precision agriculture in glasshouse settings. From 2016 to 2019, she worked as a researcher with the International Wheat Yield Partnership (IWYP) at the University of Nottingham, developing systems for high-throughput phenotypic exploration of novel genetic variation to breed high biomass and yield in wheat. Currently, she is a research fellow on a BBSRC Newton-funded grant, focusing on identifying the role of nocturnal stomatal conductance in the temperature tolerance of Mexican wheat varieties in response to climate change. Her work continues to advance the understanding of plant responses to environmental changes, contributing to the development of crops with improved efficiency and resilience.



## Martin Mascher

### IPK, Gatersleben



Dr. Martin Mascher leads the Independent Research Group "Domestication Genomics" at the Leibniz Institute of Plant Genetics and Crop Plant Research (IPK) in Gatersleben, Germany. His research focuses on understanding the processes of domestication and adaptation, and their interactions with genetic diversity in cultivated plants and their wild relatives. He primarily concentrates on temperate cereals such as barley, wheat, rye, and oats. Dr. Mascher's work involves applying population genetics and genomics methods to sequence datasets, genetic marker data, and gene expression matrices to:

- Elucidate the relationships between cultivated plants and their wild progenitors.
- Trace the demographic development and adaptation of cereals from their domestication origins in the Fertile Crescent to their spread across Europe.
- Decode the molecular impacts of domestication, including effects on genetic diversity, gene expression, and regulation.

His research contributes significantly to the understanding of how domestication has shaped the genomes of important cereal crops, providing insights that can inform future breeding and conservation efforts.





## Stéphanie Swarbeck

### NIAB



Dr. Stéphanie Swarbeck is a group leader in Crop Molecular Physiology at the National Institute of Agricultural Botany (NIAB), based in the Plant Genetics Department at the Crop Science Centre in Cambridge, UK. Her research focuses on understanding how plants integrate and respond to various environmental conditions, such as nutrient availability, the presence of neighbouring plants (e.g., weeds), and different soil tillage levels. The goal is to develop crop varieties, particularly wheat, that are suitable for low-input regenerative agriculture practices while maintaining yield and quality. Her research involves understanding the regulation of nitrogen responsiveness in wheat and how it is modulated under varying nitrogen availability. The research investigates the role of strigolactone in wheat nitrogen responsiveness and its downregulation under increasing nitrogen availability. In collaboration with Dr. Nathan Morris (NIAB-Farming System), she also explores the impact of regenerative agronomic methods on soil health and the development of wheat varieties that perform well under these practices. Through her research, Dr. Swarbeck aims to provide valuable insights for developing sustainable agricultural practices and crop varieties that can thrive under diverse environmental conditions.



## Ji Zhou

### NIAB



Professor Ji Zhou is the Head of the Data Sciences Department at the National Institute of Agricultural Botany (NIAB), where he leads pioneering research in agricultural technologies, specifically in multi-scale plant phenotyping, computer vision, and artificial intelligence (AI). His work focuses on the development of advanced analytical solutions for improving agricultural productivity and sustainability. His research includes innovative projects such as SeedGerm for assessing seed quality and vigor, CropQuant-3D for screening nitrogen use efficiency in wheat varieties using LiDAR technology, and AirMeasurer for drone-based phenotyping of crop growth. He has also developed CropSight and YieldQuant-Mobile to monitor wheat growth and predict yields, among other technologies. With a strong background in crop phenotyping, Professor Zhou collaborates with renowned institutions, including the University of Cambridge, the John Innes Centre, and several leading universities in China and Japan, to advance the application of IoT sensing and AI in agriculture. A Fellow of the Royal Society of Biology (FRSB), Professor Zhou has published over 30 research articles in prestigious journals. He serves as an associate editor for Horticulture Research and Plant Phenomics and is a core member of PhenomUK, a network focused on crop phenotyping research. His innovative work in data-driven crop science continues to drive the integration of advanced technologies in agriculture, contributing to more efficient and sustainable farming practices worldwide.



**Jim Fouracre**  
University of Bristol



Dr. Jim Fouracre is a Royal Society University Research Fellow and Proleptic Lecturer in the School of Biological Sciences at the University of Bristol. His research focuses on plant developmental biology, particularly the regulation of developmental timing in plants. He investigates how plants control when to transition between different stages of their life cycle, largely using vegetative phase change – the transition from the juvenile to the adult phase of vegetative growth – as a model system. Vegetative phase change, a highly conserved process regulated by the microRNA miR156, influences various traits including leaf morphology, shoot physiology, light use efficiency, and stress responses. In 2023, he was awarded the Rank Prize New Lecturer grant to work on enhancing the yield of *Camelina sativa*, an oilseed crop rich in omega-3 oils. By studying the genetics of developmental timing of this underutilized plant his research aims to improve its growth and robustness, offering potential for better human nutrition and sustainable production of essential omega-3 fatty acids.

## Meeting Sponsors



# MECEA Awards

## MECEA PhD Winner 1



### Katie Long, JIC

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Katie is a fourth-year PhD student in Cristobal Uauy's lab at the John Innes Centre. Her research focuses on optimizing spatial transcriptomic techniques for plant tissues. She is particularly interested in characterising gene expression in the wheat inflorescence to better understand the developmental processes that shape the wheat spike over time. Katie developed her passion for plant development during her BSc in Plant Sciences at the University of Edinburgh.

## MECEA PhD Winner 2



### Isabel Faci, JIC

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Isabel Faci is a fourth-year PhD student at the John Innes Centre (JIC), researching the genetic mechanisms that regulate temperature and photoperiod integration in wheat. Her work involves detailed phenotyping and meristem transcriptomics of plants grown under various environmental conditions. She led the implementation of a Temperature-Free Air Controlled Enhancement (T-FACE) system, based on Kimball et al. (2005), to simulate future UK weather. She earned her Biotechnology degree from the Universidad Politécnica de Madrid, where she first gained experience in wheat research. During this time, she contributed to characterising a Spanish landrace collection for quality traits with the Mejora Genética Vegetal (Plant Breeding Research) team.



# Further Information

## How to Get to Aberystwyth Town Centre

Bus: 301, T2, 512

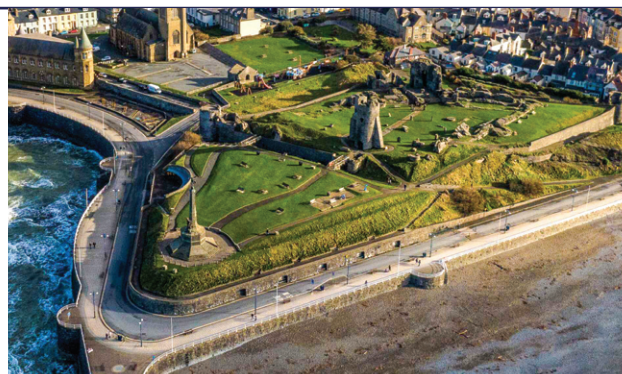
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07487 523133

Teifi Taxis  
07999 567777

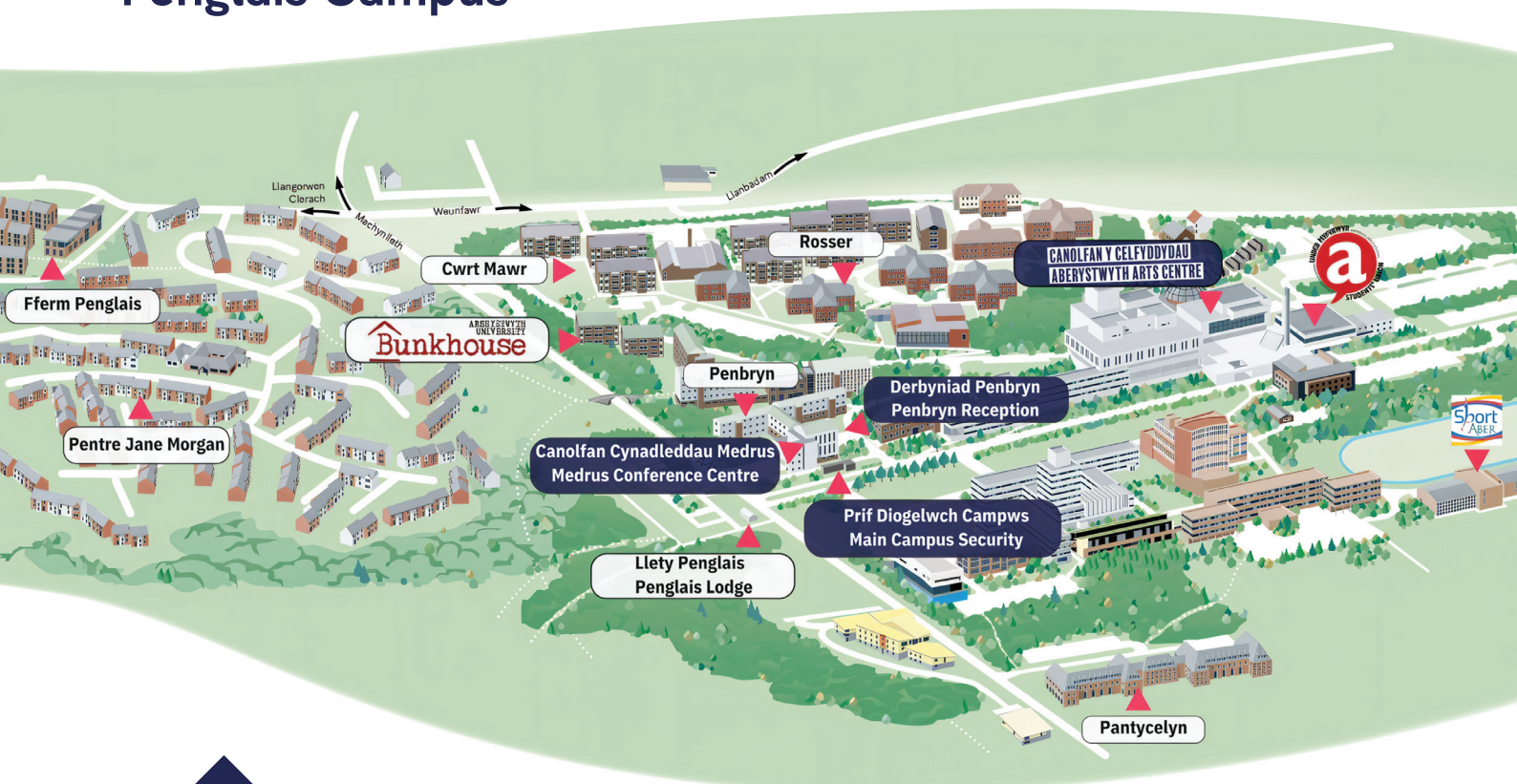
John's Taxis  
07792 906559

## Nearby Tourist Attractions

1. Aberystwyth Cliff Railway
2. Aberystwyth Castle
3. Aberystwyth North Beach
4. Ceredigion Museum
5. Vale of Rheidol Railway



## Penglais Campus



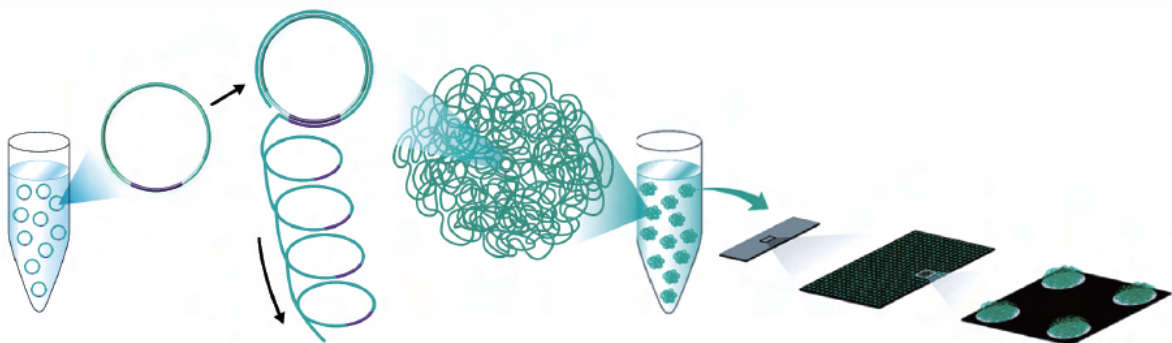
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Proven DNBSEQ™ sequencing technology combines the power of DNA Nanoballs (DNB™), PCR-free Rolling Circle Replication, Patterned Nano Arrays and cPAS to deliver a new level of data clarity and affordability. The combination of linear amplification and DNB technology reduces the error rate while enhancing the signal, resulting in real advantages. BGI delivers thought leadership in the field of genomics with more than 4000+ peer-reviewed publications covering sequencing technology, methodologies, bioinformatics and applications.

- Highly **accurate** base calling.
- Much lower duplication rates for **more usable data**.
- Virtually **no index mis-assignment** for high throughput without loss of sample integrity.
- Higher **sensitivity** for identification of low-abundance/expressed species with high call confidence.



BGI offers multi-omics services to look across genomics, transcriptomics, epigenomics, proteomics and metabolomics, with the flexibility to customize solutions that meet your specific needs.



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Benefit from our range of tailored, high throughput genotyping solutions to help you achieve your goals faster, for less.

Using new and established technologies, we can assist you to identify key marker-trait associations in your breeding populations using our range of discovery platforms, including **whole genome sequencing** using Illumina and MGI technologies, reduced representation library sequencing (GRAS-Di) or high density **microarrays**. Our Agrigenomics bioinformatics teams can help with marker selection for downstream applications. We offer **marker-assisted selection** via our flexible range of genotyping platforms, which can accommodate any level of complexity for marker-assisted selection strategies, with no compromise on accuracy, and with the speed required to make rapid breeding decisions. For eDNA and microbiome, we offer **NGS-based solutions** for metagenome analysis.

Our NGS-based and qPCR-based solutions are robust, flexible and deliver your data at very low costs, allowing you to accelerate your breeding programme, whilst keeping the costs down.

Contact us and find out how we can support you!

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