



Decoding Living Systems

# Group Leaders

**VACANCIES**

# Overview.

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The Earlham Institute is seeking early-career and established researchers to join the Research Faculty as new Group Leaders. We invite applications from those working in research focussed on systems / synthetic biology, computational biology, applied AI/ML, or molecular biology technology development.

Our team of researchers and staff are passionate about what they do and we have created a culture that we are proud of, centred on openness, technical excellence, and innovation.

We strongly encourage applicants from a wide and diverse background, and welcome those seeking full-time, part-time, or flexible working arrangements.

# Research Environment.

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- A state-of-the-art building, home to exceptional scientists and cutting-edge facilities, creating a unique combination of expertise and infrastructure.
- Dedicated laboratories for genome sequencing, single-cell analysis, engineering biology, and large-scale automation.
- One of the largest supercomputing facilities for life science research in Europe.
- A collegiate and innovative research environment with a strong focus on genomics, computational-, systems- and synthetic-biology.
- A working culture centred on openness, innovation and excellence.
- Significant support, including a commitment to your professional development, along with research and administrative assistance.
- Access to excellent graduate students through the highly-competitive Norwich Research Park Doctoral Training Programmes.
- Colleagues dedicated to providing and advancing training opportunities and skillset improvements across UK biosciences.
- Research excellence in a [beautiful region](#) of the UK.

# About the role.

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- Establish and lead an internationally recognised programme of innovative research in systems / synthetic biology, computational biology, applied AI/ML, or molecular biology technology development.
- Build, manage, and develop a team of research staff and students.
- Contribute to an inclusive and collegiate culture at the Earlham Institute.
- Foster strong and mutually beneficial relationships and collaborations at the Earlham Institute, other academic institutions - including those on the Norwich Research Park - and with industry, Government, and the wider community.
- Obtain external financial support for your research programme and effectively manage your research funding.



## How to apply.

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Interested applicants are invited to submit a single document comprising (i) A cover letter (1 page) (ii) Full CV and publication list (iii) Description of current research activities (2 pages) (iii) A short and longer-term vision of your research and strategic goals (2 pages), including how your research will contribute to and benefit from the Earlham Institute.

The Earlham Institute is committed to equality of opportunity for all employees, the main selection criteria are scientific excellence and the potential of your proposed research programme, regardless of gender, ethnicity or other personal characteristics, beliefs and backgrounds.

Appointments can be made at any level (Tenure Track or Tenure) depending on experience.

Apply directly at our website: [earlham.ac.uk/vacancies](https://www.earlham.ac.uk/vacancies) or contact Human Resources.

For further information please visit our website: [earlham.ac.uk/research-leaders](https://www.earlham.ac.uk/research-leaders)

It is proposed that initial interviews will take place at the end of February 2022.

We strongly encourage applications from women and ethnic minorities, and we welcome applications from candidates seeking full-time, part-time or other flexible working arrangements.

The closing date for applications will be **Monday 24 January 2022.**

**Apply online:** [earlham.ac.uk/vacancies](https://www.earlham.ac.uk/vacancies)

*The Earlham Institute is a registered charity (No. 1136213), strategically funded by the Biotechnology and Biological Sciences Research Council and is an Equal Opportunities Employer.*



**Biotechnology and  
Biological Sciences  
Research Council**



## Who we are.

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The Earlham Institute (EI) is a cutting edge, contemporary research institute and registered charity, working in an area of rapid technological development and innovation.

Established in 2009, EI is strategically funded by the BBSRC to lead the development of a skill base in bioinformatics and a genomics technology platform for UK bioscience.

The Institute is located on the Norwich Research Park, together with its partners: the John Innes Centre, the Quadram Institute, The Sainsbury Laboratory, the University of East Anglia and the Norfolk and Norwich University Hospital.

The Research Park has an excellent reputation for research in plant and microbial sciences, interdisciplinary environmental science and food, diet and health, to which EI contribute strengths in genomics and bioinformatics.

Close links exist between the NRP partners and new opportunities for collaboration in exciting new initiatives are under development. The NRP received £26M of government investment to facilitate innovation and further develop infrastructure to attract science and technology companies to the Park to enhance the vibrant environment and realise economic impact from research investment.





## Our mission and values.

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Decoding living systems is at the centre of our research activities and the impact of our work can be seen across diverse projects covering the breadth of life on earth that are helping us to improve human, animal and plant health, while aiding in researching healthier living systems.

**Openness** - We promote the dissemination of knowledge and distribution of data and software tools by following open and transparent data-sharing policies that are embedded in EI's research programmes.

**Technical Excellence** - We are committed to continuous improvement, and to work to the highest standards of quality across the organisation.

**Developing and Rewarding Talent** - We aim to recruit, train and retain highly skilled and talented people.

**Innovation** - We apply novel, state of the art technologies to deliver innovative approaches.

**Collaboration** - We work collaboratively, internally and externally, through mutual respect and openness.



Pursuing innovative approaches to high-impact science in an open, dynamic and collaborative environment.

## What we do.

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Our research brings together expertise in biosciences, bioinformatics, high performance computing, mathematics and statistics to understand complex biological systems in relation to improving crop yield and human and animal health.

Our advanced genomics and computational platforms support our data-intensive research that embraces and confronts modern scientific challenges surrounding data scale and complexity. We develop and apply methods to process, store and analyse data and extract knowledge from computational analysis and integration of diverse datasets to facilitate bioscience research.

# Our science.

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The faculty collectively conduct three research activities: Fundamental research to increase our knowledge base in bioscience; applied research to improve plant, animal and human health; enabling research to empower both academia and industry with new technologies and scalable bioinformatics approaches. The three scientific programmes at EI are shown below.

[Find out more about our projects at EI here.](#)



## Digital Biology

Computing hardware  
and tool development



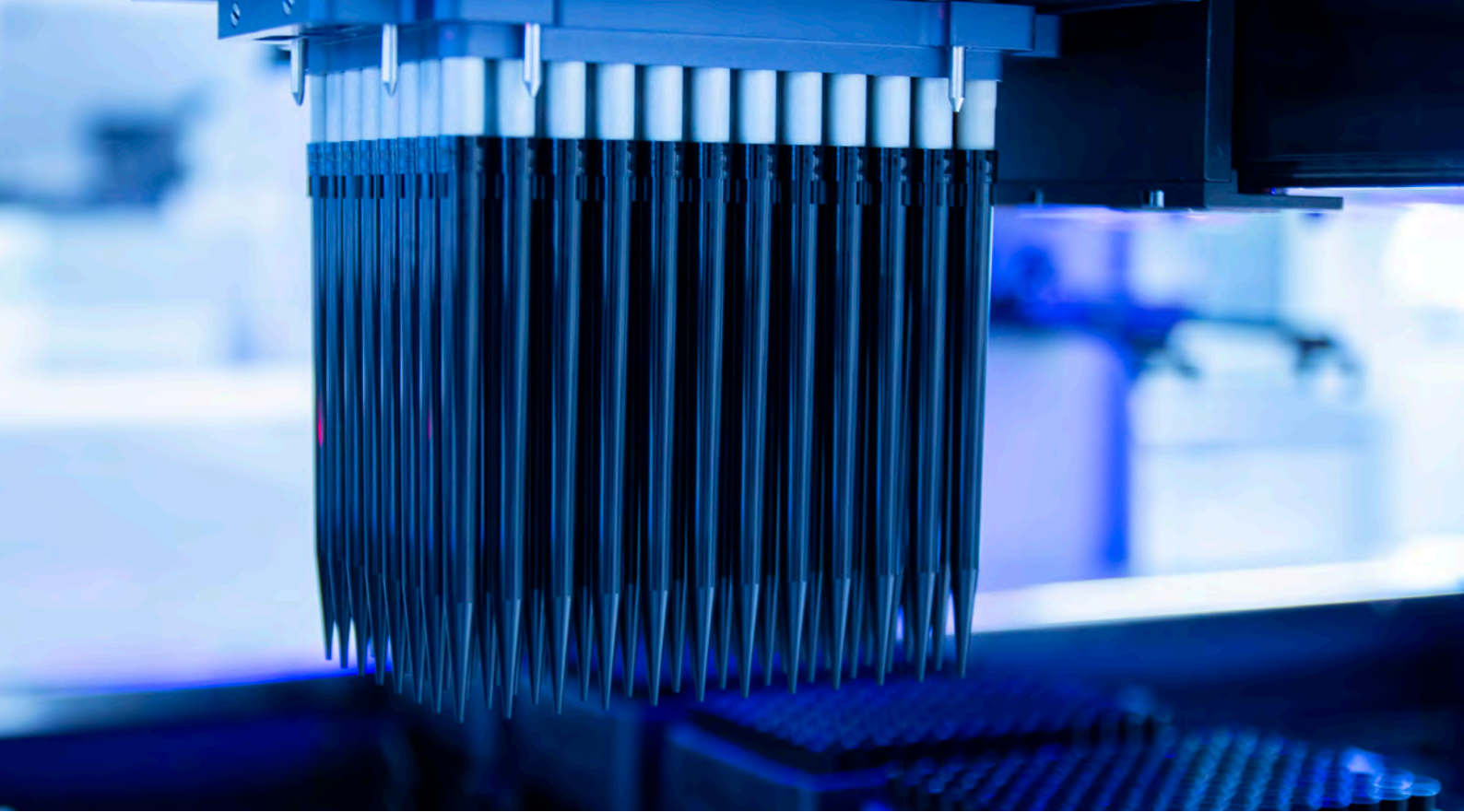
## Organisms and Ecosystems

Plants and animals



## Engineering Biology

Technology development



## Our technology.

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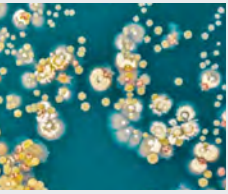
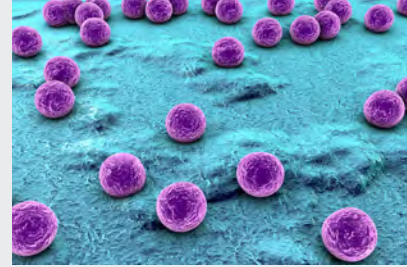
EI is a UK hub for innovative bioinformatics through research, analysis and interpretation of multiple, complex data sets. It hosts one of the largest computing hardware facilities dedicated to life science research in Europe. This has been boosted recently by an e-Infrastructure grant to expand the data storage capacity to a multi-petabyte unit, deploying a high performance cluster and large-memory server enabling the allocation of processes requiring several terabytes of computing memory.

Earlham Institute operates one of the largest Research Council funded high-throughput sequencing and data analysis platforms for life sciences (National Capability in Genomics and Single Cell Sequencing). These facilities provide the UK bioscience community with access to cutting edge technologies and large data storage and computing resources.

The Institute's knowledge and experience of the latest sequencing technologies and applications allows us to engage effectively with research groups in both academia and industry, providing advice on experimental planning and tailoring data generation to help answer key scientific questions.

Working with collaborators to advance analysis and interpretation of data through effective and efficient use of Earlham Institute's high-performance computing resources. This includes access to bespoke software tools and pipelines, user training, development and dissemination of computing best-practice.





## Making a difference.

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Despite being a relatively young institute, our research related to global food security has far-reaching impacts for the international scientific community, farmers, breeders and industries. Our Genomics Pipelines Group and Science Faculty have together sequenced and assembled the most accurate, complete and up-to-date version of the wheat genome, which has been distributed openly and is accessed by hundreds of users every month from Canada to Japan.

Research highlights include using mutant databases to study reverse genetics in wheat, the evolution of plant immunity, the identification of wheat genes that increase disease resistance and applying sequencing to the surveillance of plant pathogens.

Our varied research groups play a vital role in such scientific advances as exploring the functional genomics of aphid adaptation to plant defences; modelling resistance to late blight in potatoes; developing tools for the analysis of small RNA regulatory networks in plants; understanding the pathogenesis of swine flu in pigs; as well as collaborating with various institutes in order to establish novel infrastructure platforms for data and software dissemination.



# Commercial arm and working with Industry.

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The Earlham Institute is committed to supporting the translation of research into applications that can deliver solutions to industrial challenges in global food security, improving human, animal and plant health, and delivering impact for charity, conservation and environmental sectors.

The most recent socio-economic impact assessment of the Earlham Institute estimated that our return on investment is £14.77 to the UK economy for every £1 invested, and the Earlham Institute's operating impact is £10.3m GVA across the UK economy per year.

At present we have several existing relationships within the agriculture and food security sector, industrial bio-tech, bio-medical and med-tech sectors, as well as with organisations interested in data management and data use in life sciences sectors.

We also work with other organisations through consultancy, contract research and grant funding.

We have our own Business Development and Impact Team which helps researchers to understand the value of their intellectual assets, identify opportunities for commercialisation and maximise the impact of their research. The Institute-wide awareness of the importance of translation of research is growing, with every research group actively participating and engaging in knowledge exchange and commercialisation activities. The Earlham Institute proudly supports proof-of-concept and translational work and encourages researchers to engage with end users of their research.

[Find out more about our Industry engagement here.](#)



## World-class training.

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An important part of EI's mission is to provide high quality training to support the current and the next generation of life scientists and bioinformaticians.

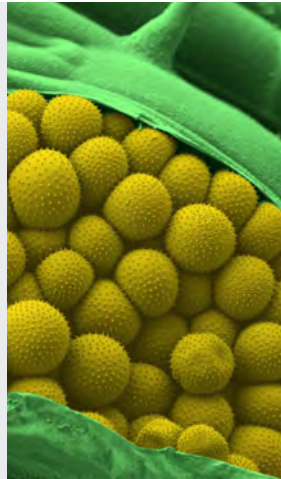
Our training courses aim to equip researchers with the necessary skills for advanced genomics through either practical short courses or tailored training for visiting workers and students.

Find out about our future events and training courses: [earlham.ac.uk/events-calendar](http://earlham.ac.uk/events-calendar)



## Ash dieback.

Response to the ash dieback crisis by sequencing and annotating both disease-resistant and disease-susceptible ash trees and the infectious fungus, *Hymenoscyphus fraxineus*.



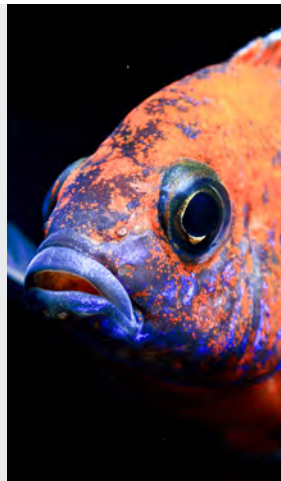
## Yellow rust.

Greater understanding of crop pathogens including yellow (stripe) rust that poses a threat to UK wheat supplies, and potato blight, which was the major culprit in the 1845 Irish and 1846 Highland potato famines.



## Salmonella.

Research into the microbiome of the human gut, an explosive new area of research which will benefit obesity and diabetes. The Earlham Institute will extend this area of research to understanding the microbiome at the soil-root interface.



## Cichlid fish.

Research into fish focuses on the understanding evolution and phenotypic variation in the African cichlids of Lake Malawi. Knowledge gained will be applied to fish farmed for food.



## Agriculture.

Greater genomic understanding of a range of agricultural crops including wheat, barley, strawberry, potatoes, oilseed, rice, sugar beet, red clover and *Miscanthus* (a grass under consideration for biofuel production).



## Domestication.

Research into mammals, including understanding the genetic profile of dogs, so that, for example, the best puppies can be selected as guide dogs to improve the training success rate. Ferrets are being studied so that the genomics of domestication can be better understood.



## Conservation.

Response to the near-extinction of the Mauritius pink pigeon, which reduced to just six wild birds. The population has now expanded and the genetic diversity of the restricted population is being analysed. The introduction of zoo birds to increase the genetic pool is now being considered.

# Living in Norfolk.

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Norwich is a city of culture, with its rich history of art and writing, as well as a city of science - hosting some of the leading centres for life science research in the world. You'll find an exciting blend of the old and the new, with plenty of things to do for all ages, all year round.

Getting around is a breeze, with regular trains to Cambridge and London, plenty of city bus routes and an international airport. Life in Norfolk is relaxed and exciting at the same time, whether you're into the vibrant nightlife or the stunning natural beauty of the Norfolk Broads. Voted the best place to work in the UK in 2015, Norwich is a city you are sure to fall in love with.



Historic town houses on Quay Side in the city of Norwich in Norfolk.

# A beautiful place.

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Norfolk is rich in natural beauty and has a hugely varied landscape, from stunning beaches along the coast to the world-famous Norfolk Broads, with over a hundred miles of rivers and lakes. There are many villages and towns to visit all across the county and the countryside is perfect for walking and cycling.



# Family life.

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Norfolk is a great place for families. Not only are there plenty of things to do, such as wildlife trips, adventure trails and family-friendly holiday parks, but there are also many excellent nurseries, schools and colleges in the area.

Childcare costs are reasonable, approximately £300 per week, and there is a large range of schools to choose from all across the county, of varying sizes.

In terms of further education, there is an excellent network of high schools and colleges for 16-18 year olds, as well as two universities, the University of East Anglia, and Norwich University of the Arts.

Visit the [Norfolk County Council](#) website for more information on family services available in the area.

Some of our favourite places to visit with family are [Banham Zoo](#), [Go Ape!](#), and the [Bewilderwood adventure forest](#).





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[earlham.ac.uk](http://earlham.ac.uk)