

Annual Report

for the year ended 31st March 2019



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Registered company number: 00511709



John Innes Centre

Unlocking Nature's Diversity

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John Innes Centre (JIC) is a company limited by guarantee and a registered charity. The Annual Report provides information on the legal purposes of the charity, the activities it undertakes and its main achievements. The financial statements have been prepared in accordance with the Charities Act 2011, the Companies Act 2006, the Memorandum and Articles of Association, and Accounting and Reporting by Charities: Statement of Recommended Practice applicable to charities preparing their accounts in accordance with the Financial Reporting Standard applicable in the UK and Republic of Ireland (FRS 102) (effective 1 January 2015).

Trustees' Report including the Strategic Report

The Board of Trustees of John Innes Centre (Governing Council) presents its Annual Report and Financial Statements for the year ended 31 March 2019. The Annual Report provides details of the John Innes Centre's objectives, achievements, scientific and financial performance in the year, future plans, risk management and its governance and management structure.

About us

The John Innes Centre (JIC) is an independent, world-leading international centre of excellence in plant science and microbiology. Our mission is to generate knowledge of plants and microbes through innovative research, to apply knowledge to benefit agriculture, the environment, human health, and well-being, to train scientists for the future and engage with policy makers and the public.

Our strategy

The John Innes Centre's key strategic aims are:

- To deliver world leading research and to develop opportunities for innovative and long-term research in plant and microbial sciences. A central principle of John Innes Centre's research is the use of genetics, continuing the long and prestigious history of genetics at the JIC.
- To translate research in the areas of yield and quality in crop plants, the use of microbial and plant products to promote human health and the use of plants and microbes in industrial biotechnology.
- To use novel genetic approaches to generate new varieties and strains of plants and microbes that can be used to further knowledge and to enhance productive and biotechnological capacity.
- To apply modern biotechnology to agriculture in an environmentally-sustainable context.

- To use a wide range of contemporary approaches to develop dialogue with policy makers and the public.
- To train the scientific leaders of the future in a broad range of scientific and transferable skills.

Our impact

The John Innes Centre's research spans the spectrum from new discoveries in fundamental science to strategic applications to deliver practical outcomes.

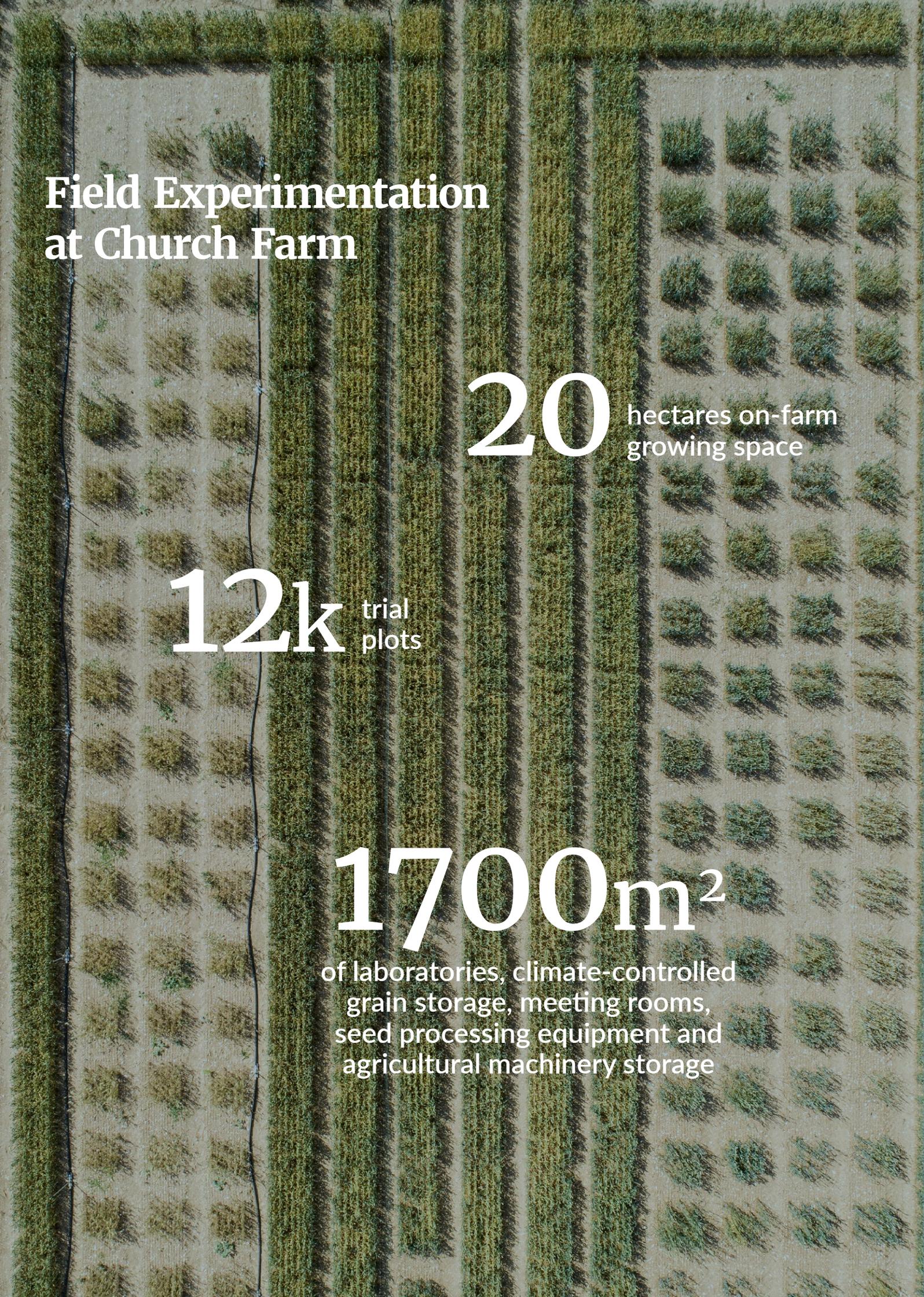
The expertise of John Innes Centre scientists has made important contributions to industry and society in the UK and world-wide. These include: the discovery and application of conserved gene order in grasses for cereal improvement; the characterisation of the dominant dwarfing phenotype that underpins improved wheat crop productivity; the understanding and application of flowering time; contributing to the first sequencing of a plant genome and the development of genomic systems for exploiting *Streptomyces*, the principal source of anti-infectives for human health.

An independent impact evaluation estimated that John Innes Centre contributes £14 back to the UK economy for every £1 invested and the research into wheat yield improvements and reducing cereal diseases could be worth £4.3bn at a global level.

(Source: Brookdale Consulting, June 2018)



Dr Will West
Chair – Governing Council & Remuneration Committee



Field Experimentation at Church Farm

20 hectares on-farm
growing space

12k trial
plots

1700m²

of laboratories, climate-controlled
grain storage, meeting rooms,
seed processing equipment and
agricultural machinery storage

Achievements and Highlights

Professor Dale Sanders FRS, Director of the John Innes Centre



The past year has been one of achievement and success for JIC across a range of fronts.

We have been fortunate to attract two new Group Leaders, Dr Susan Schlimpert and Dr Laila Moubayidin as Royal Society University Research Fellows. All four of our BBSRC-funded Institute Strategic Programmes have made remarkable progress against highly ambitious objectives and were very favourably rated through external review.

Further afield, our collaborations in China and Africa continue to grow, with a highly successful joint Chinese Academy of Sciences-JIC symposium in Shanghai and funding of further joint projects, and we initiated the Bioinformatics Community of Practice in Kenya.

Our research achievements have continued apace. Among this year's highlights, we co-led the establishment of the 'gold standard' wheat genome, an enormously complex sequencing and data challenge. This work paves the way for crop improvements and new varieties and has already contributed to breakthroughs in understanding wheat architecture and gene

■ ■ We co-led the establishment of the 'gold standard' wheat genome, an enormously complex sequencing and data challenge ■ ■

identification at the John Innes Centre.

We also marked one year of our formal commitment to our technical research and support staff through the Technician Commitment. Since becoming a founding signatory in May 2017, we have successfully submitted our self-assessment and action plan, and have been recognised for this work, which has been tirelessly championed by Dr Clare Stevenson. We pledged to act to overcome key challenges that the highly skilled technical and support staff face, raising visibility, supporting recognition and career development and ensuring the sustainability of technical staff.

PROUD SUPPORTER OF THE
Technician Commitment



Institute Strategic Programmes (2017–2022)

Molecules from Nature

The scientific challenge:

To provide a new level of understanding of the nature, origins and functions of the vast array of chemicals produced by plants and microbes.

The strategic challenge:

To use this knowledge for the discovery and engineering of new molecules that drive advances in health, medicine and sustainable manufacturing and agricultural practices.



Genes in the Environment

The scientific challenge:

To obtain a deep understanding of how the environment influences plant growth and development.

The strategic challenge:

To use this knowledge to enable the breeding of crop plants that are more resilient to a wider range of growing conditions, to improve the stability of crop yields and improve security of global food supplies.

Plant Health

The Plant Health ISP is a cross-institute programme between the John Innes Centre and The Sainsbury Laboratory in Norwich.

The scientific challenge:

To understand the molecular dialogue between plants, pests and microbes, establishing how they communicate with each other and how they have evolved in relation to one another.

The strategic challenge:

To influence the interactions between plants and associated organisms to increase future crop productivity and enhance agricultural sustainability.



Designing Future Wheat

The Designing Future Wheat programme is coordinated by the John Innes Centre, and spans eight research institutes and universities.

The scientific challenge:

To develop a new wheat germplasm containing the next generation of key traits.

The strategic challenge:

Accelerating plant breeding by understanding the underlying genetics.

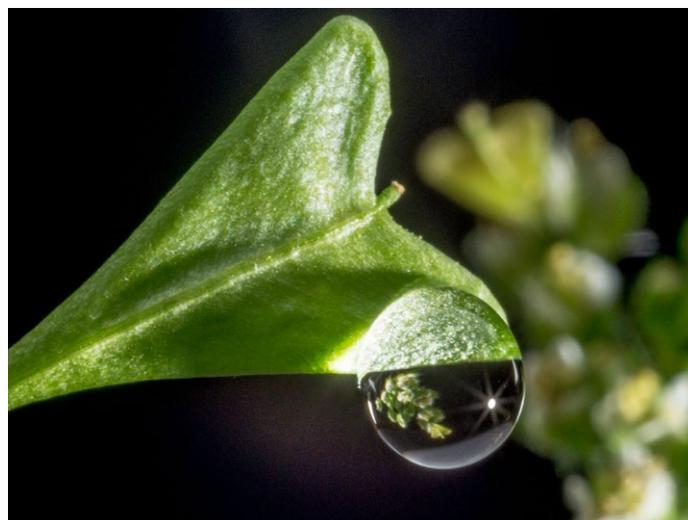
Science Spotlights

Newly discovered plant enzymes open the door to novel compound production

A wealth of previously undescribed plant enzymes have been discovered, and it is hoped that they will unlock a rich new vein of natural products, including potential drug leads.

The research reveals insights into the bioproduction of sesterterpenoids, a rare and largely unexplored class of chemicals. Previously, very little was known about how these compounds were made. A handful of enzymes that make sesterterpenoids had been discovered in fungi, but the enzymes that make plant sesterterpenoids were largely unknown. The team led by Professor Anne Osbourn used genome-mining technology to uncover a suite of enzymes called sesterterpene synthases by searching the genomes of 55 different plant species.

Professor Osbourn said, "What's fascinating is that the enzymes from plants are quite different from those from fungi, but in some cases they make similar molecules. It looks as though plants have independently arrived at their own way of making these molecules; they have 'worked it out for themselves.'"



How Capsella followed its lonely heart

The Brassicaceae plant family boasts a stunning diversity of fruit shapes. But even in this cosmopolitan company the heart-shaped seed pods of the *Capsella* genus stand out. Most of the diversity in the Brassicaceae occurs in one part of the fruit called the valves or seed pod walls. Until now, it was not clear which mechanisms lay behind these differences.

Research published in the journal *Current Biology* uncovers key processes involved in this genetic journey and offers evidence as to how and why these shapes occur.

The team used gene-editing technology, transgenic plants and molecular reporting techniques to show that a well-characterised gene called INDEHISCENT (IND) lay at the heart of the matter.

"By using this fundamental knowledge and translating it into the commercial crop, we may be able to create a denser oilseed rape canopy with a bigger pod surface area so that seeds grow bigger and yields increase," said Professor Lars Østergaard.

The findings support a growing number of studies in developmental biology which show that changes in regulatory DNA sequence in key controlling genes such as IND can lead to diverse expression patterns responsible for changes in organ shape both in natural evolution and in the domestication of crops.



Genetic secrets shaping the future of wheat

Scientists have isolated a gene controlling the shape and size of spikelets in wheat, in a breakthrough which could provide breeders with a new tool to deliver yield increases in one of the world's most important crops. The study focused on the genetics behind a mutant trait in bread wheat known as paired spikelets, where a wheat inflorescence is formed of two spikelets instead of the usual one. The study, published in *The Plant Cell*, also highlights a range of next-generation techniques available for fundamental research into wheat.

Group Leader Dr Scott Boden said it represents a breakthrough both in lab and field. "This paper is an example of what we are capable of doing in wheat now. This knowledge and the resources that come from this study can be used to see if it really does benefit yield. We have approached this in an academic sense, but we have moved it towards giving breeders tools they can work with to optimise floral development."



Snapdragon enters the genomic age

The genome sequencing, assembly and annotation of a near-complete genome sequence of the popular plant model system *Antirrhinum majus*, a flowering plant commonly known as snapdragon, promises to deliver important insights into plant genetics and evolutionary processes.

Using this species, scientists have increased knowledge of plant shape, gene function and important genetic elements such as transposons – also known as jumping genes. However, these studies have been carried out without the benefit of a genome sequence which would provide an overall evolutionary and architectural context.

The project was led by Professor Yongbiao Xue of the Chinese Academy of Sciences, in collaboration with Professor Enrico Coen who commented, “This work brings the model system of *Antirrhinum* into the genomic age and we hope the resource will be a useful stimulus to further studies.”



Previously grainy wheat genome comes into focus

The publication of the complete sequence of the huge wheat genome paves the way for much faster production of wheat varieties adapted to climate challenges, with higher yields, enhanced nutritional quality and improved sustainability.

The International Wheat Genome Sequencing Consortium published the genome, which elucidates the sequence of the 21 chromosomes, the precise location of 107,891 genes and more than four million molecular markers. A second paper, led by a team at the John Innes Centre, provides annotation and resources to support researchers and breeders in understanding how wheat genes affect traits. This will help develop wheat varieties with greater yields, more resilient against environmental changes and improved resistance to diseases.

Time-lapse microscopy helps reveal brake mechanism in *Streptomyces* life cycle

Streptomyces are soil-dwelling bacteria that produce approximately two-thirds of the antibiotics in clinical use. The production of these antibiotics – used by the bacteria to fend off rivals – is coordinated as part of a complex life cycle that ends in the formation of spores. In the reproductive process of sporulation, bacteria enter a state of dormancy enhancing their survival in adverse conditions. Understanding how this reproductive life cycle is controlled may lead to the ability to exploit the production of clinically-useful antibiotics.

The Schlimpert laboratory has discovered that a key DNA-binding protein called BldC acts as a “brake” to ensure the correct timing of sporulation in *Streptomyces*. The team showed that when they removed the brake by removing the gene that encodes for the protein, sporulation occurs too early. “We showed that the BldC brake works by keeping important genes required for sporulation switched off at a time when *Streptomyces* wants to grow non-reproductively,” explains Dr Matt Bush.

Science Communication and Engagement

Communicating our science to a wide range of audiences, and inspiring a future generation of scientists

Norwich Science Festival

In October, the third Norwich Science Festival took place with many John Innes Centre colleagues attending. A record number of visitors attended – more than 98,000 – so we were kept busy. For us, the festival is a chance to showcase our work to a huge number of people and an opportunity for members of the public to meet the scientists who work on their doorstep.

Two new hands-on exhibits, 'build a plant' and 'common scents' – took centre stage. Build a plant was instigated and devised through an internal competition, aimed to engage staff to showcase a specific area of their research to the public. This Lego-based activity was popular with both children and adults.

Alongside these activities, our staff gave talks, ran science cafe events exploring work on crop improvement, antibiotics, genetics and butterflies, and took part in Norwich's inaugural Soapbox Science event.



Gardening for Butterflies

Last year's Heritage Open Day event for the John Innes Historical Collections was an opportunity to show off some of the entomological treasures in our Rare Books Library.

The audience was treated to a talk by Dr Ian Bedford, Head of Entomology, on 'Gardening for Butterflies'. Dr Bedford's scientific career spans 41 years, but his interest in butterflies and moths began far earlier, on childhood excursions to the South Downs in Sussex. He gave tips on distinguishing butterflies and moths, and warned that populations are in real trouble; overall numbers have halved in the last 40 years. Among the most dramatic falls are the small tortoiseshells (down 64%) and the white-letter hairstreak (down 96% – its survival depends on elm trees).

The talk was followed by an opportunity to see some of the collections from the John Innes Rare Books collection. The display was divided into themes, beginning with butterflies and moths in botanical illustration, then 18th-century butterfly and moth studies and finally a section devoted to showing the part that butterflies and moths have played in evolutionary studies and genetics.



Women of the Future

Women of the Future celebrates the role of women working in Science, Technology, Engineering, Maths and Medicine (STEMM).

Our aim is to highlight the enormous diversity of opportunities in STEMM and to raise aspirations and broaden horizons of local GCSE students. Each year, 200 female Year 10 students attend the one-day event,

where inspiring speakers, Q&A sessions and an employers' fair give plenty of opportunities to meet and speak to STEMM professionals.

Diss High School attended its first Women of the Future event in 2018, and we asked the pupils from the GCSE biology group to share their impressions and thoughts about the event. "We really thought it was going to be overwhelming with too many scientists and

people. We were aware of the John Innes Centre's reputation, so were expecting a really intimidating environment – and were so pleased when we realised that just wasn't the case at all."

"The Q&A session at the end was one of our favourite parts of the day. It showed us that scientists are just normal, fun people as well as being experts in their field."

Working with Industry



Developing Biosurfactants

Research by Professor Anne Osbourn, with Unilever and Croda, is looking at natural, bio-based alternatives to petrochemical surfactants for use in detergent products. The project aims to establish a sustainable, commercially viable supply chain to produce saponins in yeast. These soap-like substances or surfactants made by certain plants have huge potential if produced on an industrial scale.

This research, funded by Innovate UK, tackles two challenges. The first is to develop a yeast strain to produce the saponin at sufficient yield and how to recover the saponin from the fermentation medium. The second is to investigate the physical properties of saponins alone and in mixtures with conventional surfactants, for use in commercial detergents.



Powering Pea Productivity

In March 2019 the Powering Pea Productivity workshop, hosted in partnership with the Processors and Growers Research Organisation (PGRO) and Agri-Tech East, brought together industry from across the pea value chain. They explored barriers to growth and identified the major targets for improvement in the quality and performance of the UK pea crop. The key themes have been prioritised within a new action plan for future collaboration.

Nutrient Sensing

Professor Tony Miller, with Plant Bioscience Ltd and Zimmer and Peacock Ltd, are working together to exploit new advances in nitrogen-sensing technology. Together the team have won in excess of £1m from the UK Government's Industrial Strategy Challenge Fund for Transforming Food Production which aims to develop innovative technologies to cut pollution, minimise waste and increase yields. The funding will be used to develop a fertiliser decision support tool which will enable farmers to optimise fertiliser applications on-farm, helping to maximise crop growth while minimising inputs.



Developing Plant Protection Technologies

Dr Jake Malone and Folium Science Ltd are using knowledge on the research molecular mechanisms for plant infection, to develop new Guided Biotics technologies for controlling plant pathogens. The partnership has secured two Innovate UK grants to use novel gene editing technology to selectively target bacteria preventing the formation of biofilms.

The first of the projects will develop treatments for biofilm contamination within the fresh fruit and vegetable markets to prevent spoilage. In the second project Dr Malone and Folium Science Ltd have teamed with Rinicom Ltd with the aim of developing a dual-purpose drone for the detection and treatment of Xanthomonas bacterial blights in crops using novel guided Biotic spot spray treatment.

Folium Science Ltd now employs three full time scientists at the John Innes Centre and is expecting to expand into dedicated labs on the NRP in the next 12 months.



Awards and Science Achievements



Royal Society honour for distinguished John Innes Centre scientist

Professor Cathie Martin, a project leader in metabolic biology was elected as a Fellow of the Royal Society. Over her career Professor Martin FRS has been a powerful advocate and practitioner in the application of plant science for human health. "This is an honour and I would like to thank the many inspiring colleagues and collaborators particularly from the John Innes Centre and from around the world who have worked with me along the way," said Professor Martin.

In a 35-year career at the John Innes Centre, Professor Martin has researched

plant genetics and metabolism to provide new insights into plant developmental and metabolic processes. Her work has made important contributions to the understanding of cell shaping and to the biosynthesis and diversity of plant polyphenolic molecules which are beneficial to human health.

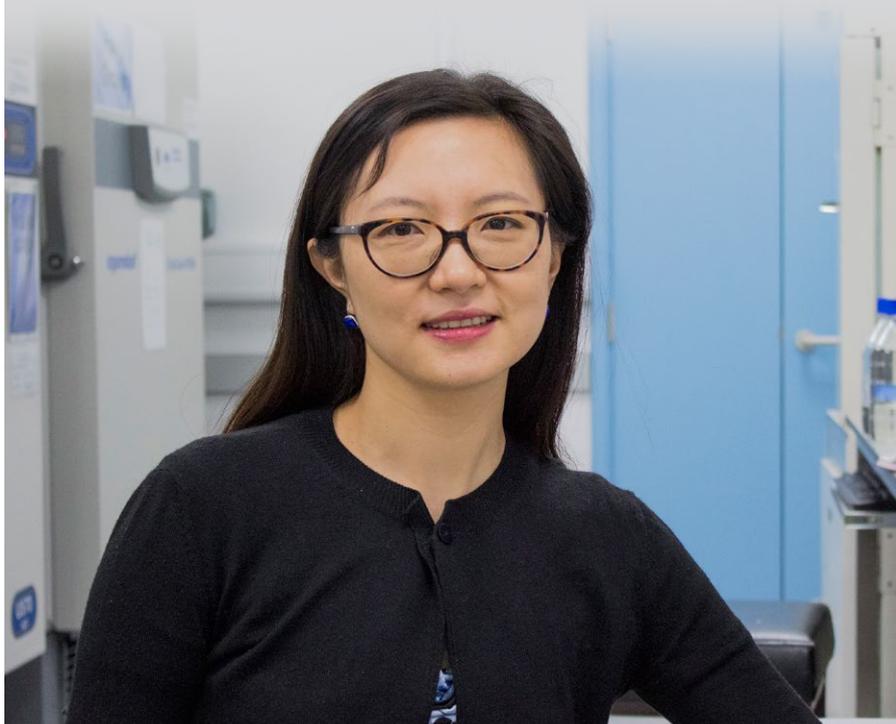
Professor Martin's current work investigates the relationship between food and health – specifically how crops can be fortified to improve diets and address the global challenge of escalating chronic disease.

European recognition for talented early-career researcher

Dr Xiaoqi Feng received a prestigious award, becoming one of 26 Young Investigators named by the European Molecular Biology Organisation (EMBO).

EMBO selects life science researchers within their first four years as group leaders to become part of its Young Investigators Programme. Her research in the John Innes Centre investigates epigenetics in plant germlines, studying how information is passed from one generation to the next.

"I am delighted to receive this prestigious award," she says. "One of the most important questions for a geneticist is to choose and develop an appropriate model. I am glad that the EMBO committee feel as excited as I am about the potential of using plants as a genetic model to answer fundamental questions regarding germ cell epigenetics."



JIC researcher wins prestigious Royal Society of Chemistry prize

Professor Barrie Wilkinson, a project leader in molecular microbiology has been awarded the Interdisciplinary Prize for 2018.

Professor Wilkinson's work focuses on understanding how bacteria make important natural products including antibiotics and anticancer molecules. His group is developing methods for the discovery of new natural products and for their structural modification through biosynthetic engineering. "It is a great honour for me to receive the Royal Society of Chemistry Interdisciplinary Award," he said, "and it reflects the diverse contributions made by my students, postdocs, colleagues and collaborators over many years."



International wheat award for speed cloning researcher

Dr Sanu Arora received the Jeanie Borlaug Laube Women in Triticum (WIT) Early Career award, for her cutting-edge research to make modern wheat more resistant to pathogens. The international award recognises her achievements and provides professional development opportunities. Dr Arora joins an exclusive group of 50 international recipients since 2010.

The review panel of the Borlaug Global Rust Initiative (BGRI) praised Dr Arora's "commitment toward wheat research on an international level" and her "potential to mentor future women scientists."

Dr Arora is a researcher in Dr Brande Wulff's group and is working on a method to rapidly clone crop disease resistance genes, known as AgRenSeq. Dr Brande Wulff said: "I am delighted to see Sanu recognised with a WIT Award. Her drive and intellect and unwavering engagement in the face of initial scepticism proved critical to the success of developing AgRenSeq. I hope she will continue to apply her energy and skill to solve new problems and bottlenecks in wheat breeding and research."



New Appointments

Dr Gerard Clover – Impact and Engagement Manager

Dr Clover joined as Impact and Engagement Manager working on the BRIGIT – Vector-Borne Disease of Plants project in February 2019.

His role is to interact with stakeholders in government, trade, non-governmental organisations and funding agencies to ensure that the needs of stakeholders are met. He is responsible for ensuring that evidence-based policy needs are fulfilled, for developing an open policy-making framework, and for engaging with industry through a two-way dialogue.

BRIGIT is a multidisciplinary consortium comprising ten UK research organisations to develop new methods to detect the bacterium and develop greater understanding of factors that could contribute to its entry and dispersal in the UK. *Xylella* has not been reported in the UK but the disease could be introduced via infected insects or plants.



Mr Gary Wortley – Laboratory Manager

In August 2018, Mr Wortley joined as a laboratory manager in the Chatt Building. As a lab manager, he ensures that the facility, laboratory environment, support and equipment within the building are suitable and sufficient to allow research to be performed.

Previously, Mr Wortley had worked for the Quadram Institute in a joint lab manager and biological safety role, and as a research scientist working on projects related to human health and the gut. While working as a research scientist on mineral bioavailability in crops at Cornell University, he took on an additional role of lab management, and discovered this was a role he would like to move into.



New Fellowships

Group Leaders secure Royal Society Fellowships

The University Research Fellowship Scheme aims to provide outstanding early-career scientists who have the potential to become leaders in their chosen fields with the opportunity to build an independent research career. Dr Laila Moubayidin (pictured left) and Dr Susan Schlimpert (pictured right) have been awarded prestigious Royal Society University Research Fellowships, enabling them to establish their own independent research groups.

Dr Moubayidin researches how conserved mechanisms regulate symmetry establishment in plant organs. She aims to achieve a fundamental understanding of how cell division and hormones impose bilateral or radial symmetry establishment across all plant organs, thereby identifying new directions for improving crop performance as well as pointing out implications in human disorders where organ symmetry is impaired.

Dr Schlimpert's research aims to improve understanding of the molecular and cellular processes that control cell division and cellular differentiation in multicellular bacteria, such as the antibiotic producers *Streptomyces*. Her research will provide novel insights into molecular mechanisms underpinning cytokinesis and multicellular development in bacteria. The production of antibiotics in *Streptomyces* is tightly coordinated with the growth and the timing of cell division in *Streptomyces*. Dr Schlimpert's research has the potential to aid in the development of new experimental strategies to exploit fully the potential of *Streptomyces*.



BBSRC Discovery Fellowship

Supporting researchers to undertake independent research, gain leadership skills, and through the transition of early-stage researchers to fully independent research leaders.

Dr Guru Radhakrishnan is one of 11 researchers in the UK to be awarded a BBSRC Discovery Fellowship earlier this year. He has now taken up the fellowship in the Crop Genetics department, where his research programme is directed towards understanding how pathogens cause disease on plants using large-scale analysis of genomics data. Dr Radhakrishnan's current work aims to unravel the mechanisms used by a group of pathogenic fungi called the Puccinia rust fungi to infect their plant hosts.

Daphne Jackson Fellowship

Helping scientists and researchers retrain and return after a career break of two or more years for family, caring or health reasons.

Dr Maria Hernandez-Soriano's research focuses on identifying genes responsible for the production and release of natural inhibitors of soil nitrification into the rhizosphere. She compares elite modern cultivars of wheat with historical varieties from the Watkins collection, looking for differences in their ability to release natural inhibitor compounds.

Royal Society Kohn International Fellow

Dr Guy Polturak

Hosted in Professor Anne Osbourn's lab, Dr Polturak aims to investigate novel triterpene metabolic pathways in the Poaceae (grasses) family, which includes the cereal crops. Triterpenes are a large class of compounds which play important roles in plants, including providing protection against pests and disease. Exploring new triterpene metabolism in the grasses may lead to discovery of new compounds with potential involvement in plant protection against biotic stress.

The Marie Skłodowska-Curie Actions

Supporting researchers at all stages of their careers, regardless of age and nationality. Researchers working across all disciplines are eligible for funding, and they encourage individuals to work in other countries.

Dr Xiaofeng Fang

Using a combination of genetics, biochemistry and imaging, Dr Fang is trying to dissect how FCA participates in 3' end processing of COOLAIR and how this is linked to downstream repression of sense FLC transcription.

Dr Xiaochao Chen

Dr Chen is currently researching temperature regulation of seed dormancy.

Dr Yuli Ding

Dr Ding's research aims to unravel molecular processes involved in fruit-shape determination in species of the Brassicaceae family.

Organisational Achievements

The Technician Commitment, one year on...

The Technician Commitment is a university and research institution initiative that aims to ensure visibility, recognition, career development and sustainability for technicians working in higher education and research, across all disciplines.

The John Innes Centre became a founding signatory of the Technician Commitment in May 2017. By signing the Technician Commitment we pledged action against the key challenges affecting our technical staff. A year after making this pledge we reviewed our progress and now look to the future of the Commitment.

Technicians are a highly skilled group of people who are a hidden workforce, often 'behind the scenes'. For instance on every grant application or publication, there are many technicians who contribute to make this work possible. Their work is often invisible to those inside and outside the institute.

At the John Innes Centre our Research and Support Staff contribute to the success of the institute across all departments, programmes and projects. This group is made up of approximately 200 technicians who work in all areas of the organisation, including horticulture, lab support, project management, administration and in our technology platforms. This group also includes research assistants and support specialists.

The Technician Commitment helps us to monitor our progress to ensure that the contributions of all staff are acknowledged and provides an opportunity to share best practice as we try to reward and celebrate everyone's role in our success.

Prior to signing the Technician Commitment, we were already working hard to raise the profile of our Research and Support Staff, so getting involved was a natural step. We were keen to sign the commitment as founding signatories, officially pledging to ensure the visibility, recognition, career development and sustainability of technicians at the John Innes Centre.

To ensure we live up to this commitment, and to provide an opportunity for reflection, we recently evaluated our progress to recognise fully the role of technicians. A year after signing up to the initiative, we submitted our self-assessment to the Technician Commitment.

This review found that we already had many examples of good practice embedded in the culture of the institute but reflected there are always areas for improvement. We highlighted additional goals in our action



plan to work on over the next two years. How we perform will be re-evaluated in 2020.

In November 2018, Dr Clare Stevenson (pictured above), who leads our work in this area, represented the John Innes Centre at the Technician Commitment Signatory event, where she collected an award for the successful submission of our self-assessment and action plan.

Working to recognise the contributions of our Research and Support Staff is never complete and we need to continue the

good work and continue to address areas identified in the action plan to ensure we are doing the best we can.

The commitment receives support from the Science Council and the Gatsby Charitable Foundation's 'Technicians Make It Happen' campaign.

PROUD SUPPORTER OF THE
Technician Commitment

At the John Innes Centre our Research and Support Staff contribute to the success of the institute across all departments, programmes and projects

Funding and Investment



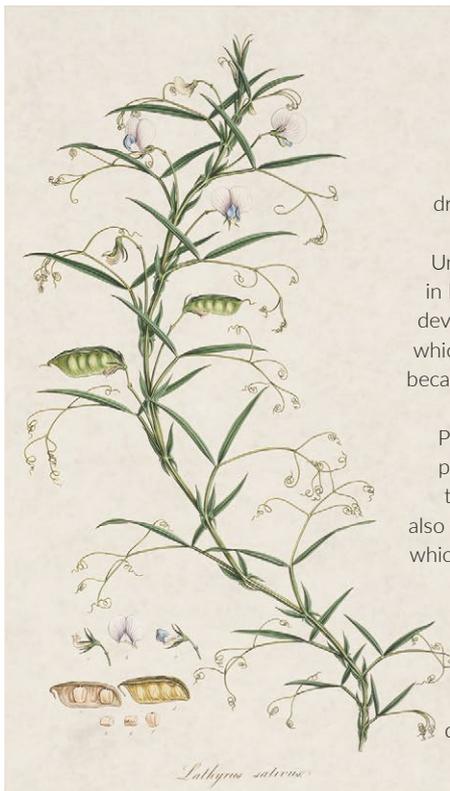
UK consortium to combat serious threat to plant health

BRIGIT brings together 12 leading UK research organisations to work together to enhance UK surveillance and response to the plant pathogen *Xylella fastidiosa*. Funded by the bacterial plant diseases programme, the £4.85m programme aims to improve methods of diagnosis and detection of *Xylella*, to identify factors that could lead to its spread, and to prepare to minimise the risk of the pathogen to the UK.

This insect-transmitted bacterial plant pathogen infects 500 species including crops, ornamental plants, and trees. In Italy alone, over one million olive trees are dying from *Xylella* in a disease called Olive Quick Decline Syndrome. So far, *Xylella* has not been reported in the UK.

Professor Saskia Hogenhout (left), principal investigator of BRIGIT, said: "Despite the impact of this disease, we know very little about how the bacteria might spread in Northern Europe; most of the research on *Xylella* and its insect vectors has been done in warmer southern climates."

The BRIGIT consortium involves scientists across a spectrum of biological and social sciences, including genomics and molecular biology, plant pathology, entomology and ecology, and engages stakeholders and policymakers.



Unlocking the potential of grass pea for resilient agriculture in drought-prone environments

A groundbreaking project to cultivate grass pea in drought-prone areas has been awarded £1.2m funding from the UK Government's Global Challenges Research Fund. Unlocking the Potential of Grass pea for Resilient Agriculture in Drought-prone Environments (UPGRADE) will work to develop new safe lines of grass pea that are low in a toxin which causes paralysis when it is the main food consumed because there is nothing else to eat, unlocking the potential of the resilient and highly nutritious legume.

Professor Cathie Martin FRS, the UK lead of the grass pea project, said, "The grass pea is especially beneficial to smallholder farmers as an insurance crop. We are also working on introducing agronomically important traits which could lead to the expanded cultivation of grass pea in areas most affected by climate change."

Professor Sir Mark Walport, Chief Executive of UK Research and Innovation, said, "Stresses such as drought, and the restriction of vital resources including nutrients and water, are among the challenges affecting the development of sustainable agriculture in Sub-Saharan Africa."



'Game-changing' funding success for European research alliance

A major grant to fund curiosity-driven research into plant communication has been awarded to Professor Richard Morris (right), and colleagues from the Max Planck Institute and University of Hamburg. The European Research Council (ERC) Synergy Grant is one of 27 from across Europe, and the team have been awarded €6.1m over six years.

Professor Morris's research uses mathematical modelling and computational approaches to solve problems in biology. His focus is on how plants encode, transmit and decode information about their environment. He believes the ERC funding is a "game-changer" for his long-term scientific goals.

"This funding gives us the freedom to build and develop truly interdisciplinary research teams and train the next generation of researchers. It's very exciting," he said.

The fundamental research, explained Professor Morris, will have broad implications in helping to understand how plants adapt to their environment and how grafted plants may use communication strategies to increase specific traits such as disease resistance.



Researcher lands major European grant

Dr Xiaoqi Feng (below) has been awarded a prestigious European Research Council (ERC) Starting Grant. Dr Feng will receive a €1.5m award over a five-year period. The awards are made to researchers with a scientific track record showing great promise and allow grant winners to create their own research teams and conduct pioneering projects.

Dr Feng's project will investigate the molecular mechanisms underlying DNA methylation reprogramming in plant germlines which pass information from one generation to the next. DNA methylation is a modification which changes the activity of DNA without changing the genetic sequence.



International Collaboration

Bioinformatics Community of Practice

The John Innes Centre, the Earlham Institute and the BecA-ILRI hub, Kenya, have jointly initiated a two-year training programme to address the critical shortages in bioinformatics capability in Africa.

The "Bioinformatics Community of Practice (BiX CoP)" is designed to build a strong, self-sustaining network of bioinformaticians in Africa, and to equip them with expertise in data analysis for agricultural biosciences.

The goal is to build an active and self-sustaining community of African bioinformaticians. This group will then contribute to securing agricultural productivity gains in Africa, and help to ensure food security on the continent.

Dr Cristobal Uauy said, "We are extremely excited to launch this initiative to address the shortage of bioinformatic skills in the region. This builds upon our long-term

partnership with the BecA-ILRI hub and looks to deliver training from a completely novel perspective."

The programme is being implemented in the three phases: Build, Empower and Amplify.

Build: Phase 1 of Bixcop covers a range of skills required for bioinformatics. These skills include programming, data analysis, whole genome assembly, diversity studies, biostatistics and phylogenetics.

Empower: The second phase will enable participants to pass on their skills to other scientists.

Amplify: The final phase will ensure that the bioinformaticians are equipped to share their knowledge more widely, this includes training in proposal writing, scientific communication

and two regional training workshops. At the regional workshops, the fellows will become the teachers, passing their knowledge to colleagues.

The programme was officially launched with an opening event held on 3-4 April at the International Livestock Research Institute (ILRI) campus, Nairobi, Kenya.

The 2018 cohort of 14 fellows is made of early-to-mid-career African researchers carefully selected from nine different countries (Democratic Republic of Congo, Ethiopia, Kenya, Nigeria, Rwanda, Sudan, Uganda, Tanzania and Zimbabwe).

It is hoped that this initiative will foster interaction that will build a self-sustaining "community" of bioinformaticians in Africa..

To find out more visit acaciafrica.org/bioinformatics-community-practice/





Muwonge Abubaker
NCRRI/NARO Uganda



Hassan Zackaria Ali Ishag
University of Nyala, Sudan



Ermias Assefa
Ethiopian Biotechnology Institute, Ethiopia



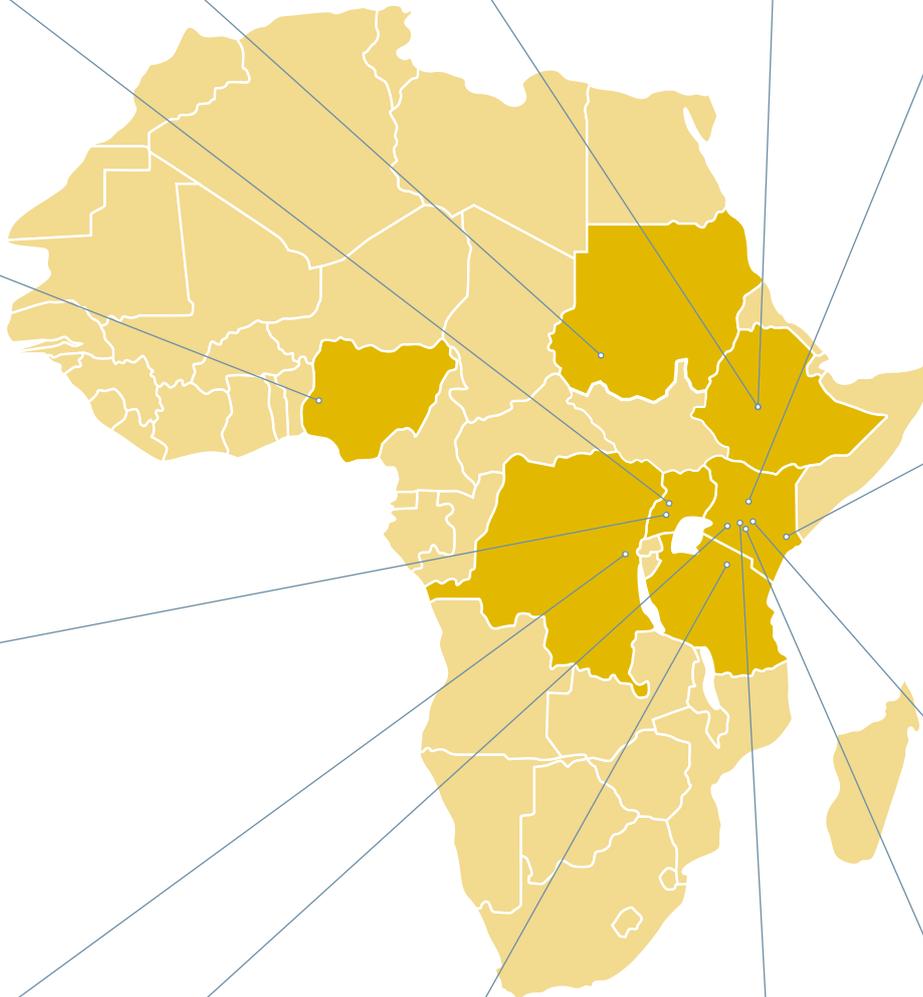
Helen Nigussie Aychegrew
Addis Ababa University, Ethiopia



Bernice Ngina Waweru
KALRO Food Crops Research Institute, Kenya



Osaiyuwu Osamede Henry
University of Ibadan, Nigeria



Davies Kiambi Kaimenyi
Pwani University, Kenya



Pius K.B. Mugagga
Artificial Intelligence Research Group, Makerere University, Uganda



Mukani Moyo-Okoba
Kenyatta University, Kenya



Bwihangane Birindwa Ahadi
Université Evangélique en Afrique, DRC



Edwin Murungi
Egerton University, Kenya



Beatus Modest Lyimo
Nelson Mandela African Institution of Science and Technology, Tanzania



Mary Maranga
Jomo Kenyatta University of Agriculture and Technology, Kenya



Isaac Njaci
Jomo Kenyatta University, Kenya



Future Plans

Objectives, activities and plans for future periods

JIC's principal objectives for the year ended 31 March 2020 are as follows:

- To continue a world-leading research and innovation programme by publishing ground-breaking scientific research, winning research funding, and recruiting and retaining the brightest and the best staff and students.
- To further develop the John Innes Centre long term science vision, seeking and reflecting public opinion into science strategy.
- To progress plans and secure funding for new Institute research facilities through our ambitious science vision and high profile campaign, *Healthy Plants, Healthy People, Healthy Planet*, enhancing JIC's global visibility.
- To increase commercial collaborations by strengthening our knowledge exchange activities through the appointment of an experienced Head of Commercialisation ultimately leading to increased industry derived income.
- To diversify our funding through access to the Global Challenges Research Fund and other new funding opportunities.
- To build on international research initiatives; the Centre for Excellence of Plant and Microbial Science (CEPAMS) and the Alliance for Accelerated Crop Improvement in Africa (ACACIA), by initiating and delivering high quality research and impact and Technicians commitment.
- To build on the Athena SWAN Gold Award by continuing to embed inclusivity and diversity into JIC culture and spreading best practice through beacon activities.

Key Performance Indicators

JIC's key performance indicators are:

- submission levels and success rates for research grant proposals;
- publications in relevant scientific journals;
- recruitment and retention of high quality staff and students;
- annual research income vs budget; and
- unrestricted reserves vs budget.

Details of publications and recruitment in the year are provided in the Achievements and Highlights section. Details of grant submissions, success rates, research income and reserves are provided in the Financial section

Going Concern

The Institute is reliant on its strategic programme funding from BBSRC, which was £13.7m in the year (2018: £13.7m). BBSRC has confirmed continued strategic funding at this level for the year to March 2020 plus provisional funding for a further two years to March 2022 subject to the next government spending review.

Having considered the risks in respect of future funding, financial forecasts for the period to March 2022 and the level of unrestricted reserves, the Trustees have concluded that it remains appropriate to prepare the financial statements on a going concern basis.

Financial Review

Income

Total incoming resources for the year were £49.6m (2018: £48.9m). The increase in the year was primarily due to higher research grant income.

Income excluding capital funds was £39.8m (2018: £38.6m), £2.6m above the budget for the year.

An analysis of grant income by principal sponsor is included in the notes to the financial statements. JIC's principal sponsor is the Biotechnology and Biological Sciences Research Council (BBSRC), which contributed 75% of total incoming resources (2018: 77%). Other major sources of funding were the European Union and charitable organisations.

Expenditure

Recurrent expenditure for the year amounted to £45.7m (2018: £42.3m). Staff costs accounted for £17.0m (37%) (2018: £17.3m; 41%) of expenditure.

Net Movement in Reserves

JIC recorded a net increase in unrestricted reserves of £0.6m (2018: £0.6m).

Restricted reserves increased by £5.3m (2018: £8.1m) principally due to £7.7m of capital funding (2018: £9.6m) and a revaluation of tangible fixed assets of £2.0m (2018: £2.1m).

Subsidiaries and Related Parties

Subsidiary companies contributed an operating profit of £329,000 (2018: £110,000), while JIC's share of associates' results was a loss of £41,000 (2018: profit of £96,000). The share of associates' results in the year relates to JIC's 33% interest in Plant Bioscience Limited and 45% interest in Leaf Systems International Limited.

Capital expenditure

Capital expenditure in the year was £8.9m (2018: £9.7m). Investment has been made in a new field experimentation station, strategically important investments in state-of-the-art scientific equipment, energy-efficient plant infrastructure, well-found laboratory equipment and enhanced plant growth facilities.

Cash

Group cash at March 2019 was £38.4m (2018: £37.0m).

JIC deposits its cash with UK registered financial institutions that meet its credit rating policy and subject to agreed counter-party limits. Investment income from cash deposits in the year was £296,000 (2018: £260,000), up on last year due to higher deposit rates.

Reserves position

Total group reserves increased by £5.9m in the year to £107.0m (2018: £8.8m to £101.1m).

Restricted reserves increased by £5.3m to £82.5m. Reserves of £8.0m relate to restricted designated capital reserves in connection with funding received from BBSRC to be used for agreed future capital projects. Reserves of £0.2m relate to restricted designated general reserves in respect of ring-fenced strategic funding from BBSRC. The remaining £74.3m of restricted reserves relate to the value of fixed assets.

Unrestricted reserves increased by £0.6m in the year to £24.6m (2018: £24.0m), £1.2m above the budget for the year. Reserves of £8.3m relate to unrestricted designated capital reserves for planned capital investments. The remaining unrestricted reserves include general reserves of £6.6m and designated fixed assets reserves of £9.7m.

Reserves policy

JIC's reserves are held to support financial solvency, manage uncertainty and fund future activities. The level of reserves required by JIC is therefore determined by reference to:

- Future operational and capital expenditure requirements in the March 2022 Business Plan;
- Potential financial risks identified in the Business Plan and Risk Register;
- Potential funding required for strategic investments not included in the Business Plan;
- Working capital / liquidity requirements.

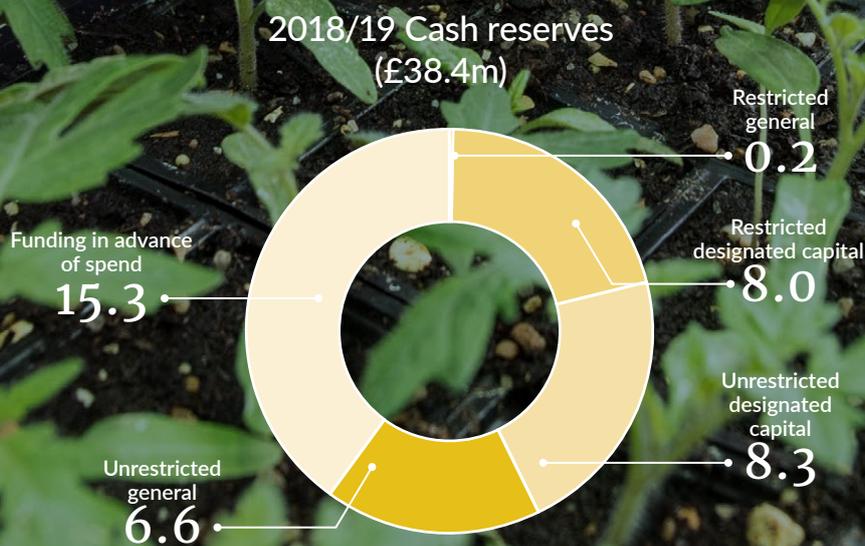
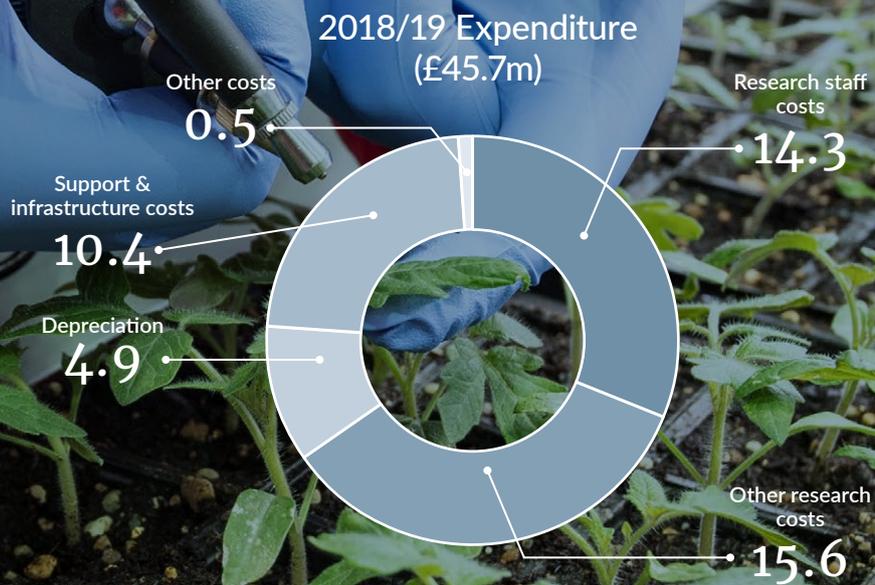
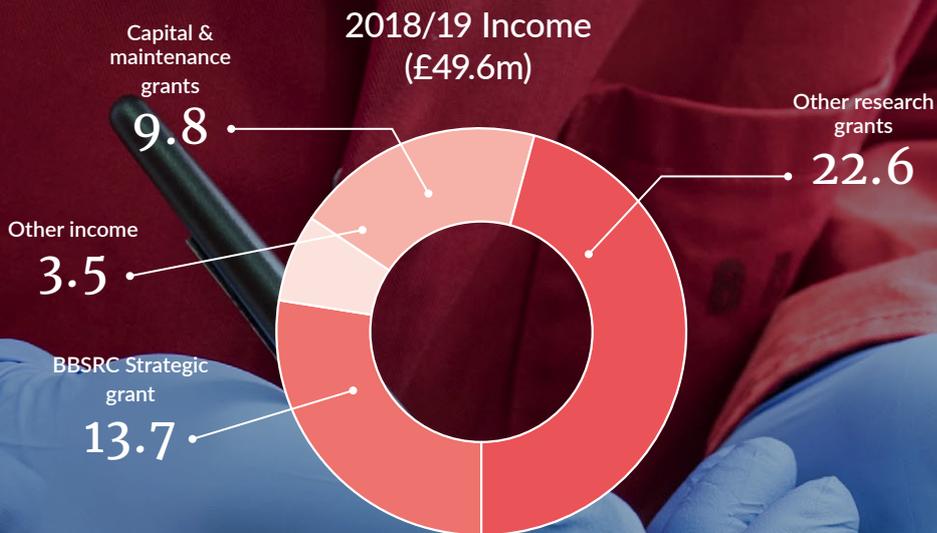
Unrestricted reserves that have been designated by the Governing Council for specific purposes are shown in separate designated reserves. At March 2019, £8.3m of unrestricted reserves were designated for planned capital investments (2018: £8.7m).

General unrestricted reserves at March 2019 were £6.6m, slightly above the minimum general reserves target of £6.0m set by the Governing Council.

Grant proposals and awards

During the year, JIC researchers submitted grant proposals with a sponsor value of £35.4m (2018: £71.1m) and were awarded grants with a value of £21.5m (2018: £14.4m).

The success rate for grant notifications in the year was 42% by value (2018: 47%).



All figures in £million

Risk Assessment and Management

Governing Council is responsible for ensuring there are effective and adequate risk management and internal control systems in place to manage the major risks to which the Charity is exposed.

The Audit Committee agrees an annual risk-based internal audit plan which covers major risks identified by management and the Trustees. It receives reports from internal auditors on the effectiveness of internal controls, progress against the internal audit plan and progress on recommendations made in reports. Governing Council reviews a full risk report annually, including a 'heat map' tracking major risks. The Science and Impact Advisory Board (SIAB) assess the science quality and vision section of the risk register.

Principal risks and uncertainties

Risk area	Description of Risk	Management of Risk
Future BBSRC research funding	BBSRC strategic funding is reduced as a result of poor performance or public sector spending pressures	Regular monitoring of scientific performance, including consideration from the Science and Impact Advisory Board. Regular communication with BBSRC to report performance and ensure strategic alignment of research programmes. Monitoring of performance of competitive grant submissions. Discussion at annual SIAB meetings.
Staff retention and recruitment	JIC is unable to retain or attract suitably skilled staff to enable it to sustain its scientific performance. In addition to scientific impact, this risk area could also have an impact on the level of funding the institute is able to attract.	Strategy and action plans in place, monitored by Strategic Human Resources Group. Career development programmes in place to support high potential staff. Performance Management processes in place. Recruitment strategy and processes in place, including attractive support arrangements. SIAB oversight.
Estates	JIC's ageing estate facilities do not adequately support the delivery of its scientific objectives. Funding is inadequate to sustain and improve facilities necessary to support scientific objectives. Estates maintenance and infrastructure costs are too high, threatening long-term financial sustainability and the competitiveness of JIC's science.	Plans for Next Generation Infrastructure are being developed to replace ageing buildings with flexible research infrastructure capable of integrating multidisciplinary teams and harnessing developments in technology. Regular communication with BBSRC on Estates Strategy and potential funding requirements. Facilities management systems enhanced. Continued investment in energy efficiency.
Technology investment	JIC is unable to keep pace with developments in technology underpinning its science. Funding is inadequate to sustain and improve technology facilities necessary to support scientific objectives.	Five-year investment plan developed. Funding opportunities identified and pursued for technology investments.
Compliance with sponsor funding requirements	JIC fails to comply with sponsor grant requirements resulting in a material financial impact.	JIC undertakes regular reviews of its grant compliance processes for sponsors and the UKRI internal auditors.
Major site incident	A major incident disrupts scientific research programmes or administrative systems.	Business Continuity and Disaster recovery plans in place and tested periodically. Review of compliance with health & safety and relevant regulations from government agencies and internal auditors. Appropriate insurance arrangements in place.
Impact of leaving EU	JIC is not able to access EU programme funding or participate in EU research collaborations. JIC is not able to recruit or retain researchers from EU member countries.	Regular dialogue with BBSRC and other key stakeholders on risks and emerging issues with respect to potential changes in arrangements.

International Origins of JIC staff

Snapshot figures reflecting those 382 staff who declared their country of origin, excludes visiting workers.



Structure, Governance and Management

Members

The Members of JIC are:

- UK Research and Innovation – Biotechnology and Biological Sciences Research Council (“BBSRC”);
- John Innes Foundation (“JIF”); and
- University of East Anglia (“UEA”).

The Members each have the right to nominate one governing council member and appoint one “observer” to attend Governing Council meetings. Details of member appointments are provided in the table below. The Members are all guarantors of JIC, a company limited by guarantee and a registered charity, of an amount not exceeding £1, and for a year after resignation.

Organisation and governance

JIC is incorporated in England and Wales and is a company limited by guarantee (registered number 00511709) and a registered charity (number 223852). JIC is governed by its Memorandum and Articles of Association, adopted 27 September 2011, and its Institute Grant Agreement with BBSRC by whom it is strategically funded.

Governing Council (Board of Trustees)

The Governing Council comprises of at least the Chair, three science and three non-science Trustees. The Trustees who served during the year and up to the date of signing these financial statements were as follows:

Trustees	Appointment status	Role	Changes during period
<i>At date of Annual Report:</i>			
Dr W H L West	Independent	Chair	Appointed on 1 April 2018
Prof J C Murrell	UEA appointment	Science	-
Ms J K Midura	Independent	Non-science	-
Mr K R Norman	JIF appointment	Non-science	-
Dr D J Keith	Independent	Science	-
Mr R J Maskell	Independent	Non-science	-
Prof O Leyser	BBSRC appointment	Science	-
Prof N J Talbot	Independent	Science	Appointed on 23 October 2018
Mr J H Innes	Independent	Non-Science	Appointed on 15 May 2018

The Governing Council has the ultimate responsibility for the strategy of JIC. Strategy is developed under advice from SIAB and the JIC Strategy Committee.

The Governing Council is supported by an Audit Committee to oversee financial management and risk and a Remuneration Committee to consider senior staff remuneration. The full Governing Council meets five times a year, the Audit Committee twice a year and the Remuneration Committee at least once a year and otherwise as required.

The Governing Council is also supported by a Science and Impact Advisory Committee which comprises international experts in science and application of science, chaired by Prof Ottoline Leyser.

The Science and Impact Advisory Board is responsible for providing strategic and scientific advice to the Director of JIC and the Governing Council on issues relevant to the JIC’s Mission and Science Programme. This includes ensuring that the JIC Science Programme maximises JIC’s potential for knowledge transfer, outreach and engagement with research users, stakeholders and the general public in addition to helping in the identification and development of new scientific funding opportunities to support the development of the JIC Science Programmes.

Recruitment, induction and training of Trustees

Governing Council vacancies are advertised as necessary. The Institute will also approach individuals thought to have the right skills.

New Governing Council members are invited to spend time with members of the Executive Team. This is a chance to learn about the Institute and identify opportunities to get more involved with JIC’s work.

In addition to the five formal meetings, all Trustees receive regular presentations from JIC’s scientists and briefings on key issues facing the organisation.

Trustee remuneration

None of the Trustees received any remuneration in the year in respect of their role as trustee directors.

During the year Prof Ottoline Leyser received £5,000 (2018: £nil) in the role of chair of JIC’s Science and Impact Advisory Board.

Key Management Personnel

The Trustees delegate management of the day to day activities of the charitable company to the Director of the Institute, Prof Dale Sanders, and the executive Strategy Committee.

Strategy Committee

JIC's executive Strategy Committee advises the Director at strategic and operational levels on major issues that affect the Institute with respect to research, appointments, new initiatives, business plan and infrastructure, particularly where such issues involve more than one of these areas.

Its membership is as follows:

- Director (Chair);
- Institute Strategic Programme Leaders;
- Heads of Departments Representative;
- Finance Director;
- Head of HR;
- Head of Contracts;
- Head of Policy and International;
- Capital Projects Manager;
- Head of Directorate;
- Faculty Representative Leader Group.

Strategy Committee is supported by a number of other executive committees and groups including: Research Committee; Finance Committee; Heads of Departments Committee; KEC Strategy Committee; Strategic HR Committee; Inclusivity and Diversity Committee; and Health & Safety Committee.

Employees

JIC is a dynamic, multinational community of about 400 scientists and post graduate students. JIC's reputation for scientific excellence is international and it attracts some of the best scientists and brightest students internationally. JIC is committed to the training of the next generation of scientists. Activities include an undergraduate summer school (jointly with The Sainsbury Laboratory and Earlham Institute) that gives students the unique opportunity to spend the summer on site and a MSc Plant Genetics and Crop Improvement (jointly with UEA). There are two different routes to a PhD: the prestigious rotation studentships and the NRP Doctoral Training Programme. We host Post- Doctoral scientists and independent Fellows from around the world.

JIC staff that joined before 1 October 2011 were employed by BBSRC up to 1 October 2017, when they transferred employment to the Institute under TUPE.

Transferred employees retain their membership of the Research Councils Pension Scheme (RCPS), where applicable, with JIC becoming an admitted employer in the scheme. The RCPS is a defined benefit scheme funded from annual grant-in-aid on a pay-as-you-go basis. The RCPS Pension Scheme is a multi-employer scheme and JIC is unable to identify its share of the underlying assets and liabilities. JIC therefore accounts for the scheme as if it were a wholly defined contribution scheme. As a result, the amount charged to the income and expenditure account represents the contributions payable to the scheme in respect of the accounting period. Liabilities for the payment of future benefits are the responsibility of the RCPS and accordingly are not included in these Financial Statements.

JIC has recruited all new staff from October 2011 on its own terms and conditions, covering basic pay and allowances, contractual payments, tax, NI, and liabilities for pension contributions and redundancy. Such staff are eligible to join a defined contribution scheme.

Equality and Diversity

It is the Charity's policy to provide equal opportunities to job applicants and employees of any race, nationality, ethnic origin, marital status, religion or belief, gender, disability, sexual orientation, age or employment status. The Charity does not condone or tolerate any form of discrimination in its recruitment or employment practices. All employees and applicants are treated on merit, fairly, with respect and dignity, recognised as individuals and valued for the contribution they make, provided fair and equal access to training, development, reward and progression opportunities and are accountable for the impact of their own behaviour and actions. All the Charity's policies follow these principles.

JIC is aware of its statutory duty to support the employment of disabled persons where possible, both in recruitment and by retention of employees who become disabled whilst in the employment of the charitable company, as well as generally through training and career development.

In 2017, JIC became the first independent research institute to be awarded a 'Gold' Athena SWAN award. The Athena SWAN charter recognises and celebrates good practice aimed at advancing gender equality, representation, progression and success for all in science, technology, engineering, maths and medicine (STEMM) in higher education.

This award recognises JIC's culture that embraces the principles of flexibility that provide for family-friendly working practices, while at the same time demonstrating a commitment to career advancement for all employees.

JIC's ability to attract the best researchers and students internationally creates a vibrant, dynamic and intellectually nurturing environment for both training and scientific discovery and is a primary driver of our scientific effectiveness. JIC recognises the value of a diverse workforce and, although Athena SWAN is focused on gender equality, we believe that a fair and equitable working environment is key to both a productive workforce and delivery of JIC strategy, and that initiatives put in place to address gender inequality ultimately benefit all staff. JIC is a member of Stonewall Diversity champion programme.

During the year, regular communications to employees have been provided on matters affecting them, including factors affecting the Charity's progress, and they have been consulted on decisions affecting them.

Related Parties

Subsidiaries

JIC's subsidiaries in the year were as follows:

- John Innes Enterprises Limited (contract research);
- Norwich Biosciences Limited (intellectual property management);
- Norwich Research Limited (dormant);
- JIC NRP Capital Limited (dormant).

Associates

JIC's associates in the year were as follows:

- NBI Partnership Limited;
- Plant Bioscience Limited;
- Leaf Systems International Limited.

NBI Partnership Limited

JIC has a 25% interest in NBI Partnership Limited ("NBIP"). NBIP supplies support and administrative services to JIC and the three other research organisations based on the Norwich Research Park (Quadram Bioscience Institute, Earlham Institute and The Sainsbury Laboratory). NBIP fully recharges its costs to the four research organisations and accordingly it generates no profit or loss.

Plant Bioscience Limited

JIC owns one third of the share capital of Plant Bioscience Limited ("PBL"). PBL manages the intellectual property rights of the charitable company and other organisations.

Leaf Systems International Limited

JIC owns 45% of the voting share capital and at 31 March 2019 had invested £1,280,000 in non-voting share capital of Leaf Systems International Limited ("LSI"). LSI is a commercial research & development company specialising in the expression and production of proteins, metabolites and complex natural products. During the year, JIC invested £650,000 in the non-voting share capital of LSI.

BBSRC

BBSRC is a member of the charitable company.

JIC is strategically funded, along with seven other institutes, by BBSRC. BBSRC supports JIC via strategic 5-year funding programmes, competitively won project grants and capital funding for infrastructure and technology investments. The principal terms and conditions under

which BBSRC provides its funding are set out in the Institute Grant Agreement. Key conditions include:

- BBSRC and the Institute shall meet at least annually to review and discuss the implementation and progress of the Institute's business, including strategic and financial plans.
- The Institute shall submit a draft Business Plan, covering a period of at least five years, for discussion.
- The Institute will demonstrate appropriate plans for the maintenance, renewal and development of the estate through a rolling 10 year Institute Estates Strategy covering capital projects, long term and routine maintenance.

In April 2018, BBSRC became part of UK Research and Innovation (UKRI), a new organisation that brings together the UK's seven research councils, Innovate UK and Research England.

John Innes Foundation

The John Innes Foundation ("JIF") is a member of the charitable company. JIC occupies land and buildings which are owned by JIF, with the principal research buildings leased at a peppercorn rent. In addition, JIF also sponsors the training of a number of students. Studentship grants in the year were £346,000 (2018: £332,000). Further details are provided in note 23 to the financial statements.

Anglia Innovation Partnership LLP (formerly Norwich Research Partners LLP)

JIC is a member of Anglia Innovation Partnership LLP through its 100% subsidiary, JIC NRP Capital Limited. Anglia Innovation Partnership LLP is responsible for the management and development of the Norwich Research Park (NRP) estate and for the furtherance of the NRP Enterprise Vision.

JIC is entitled to receive a share of certain profits generated by Anglia Innovation Partnership LLP, however it has no liability for losses or in the event of insolvency. Anglia Innovation Partnership LLP has not yet generated any profits.

University of East Anglia

University of East Anglia ("UEA") is a member of the charitable company. The majority of PhD students at JIC are registered with UEA.

Statement of responsibilities of the trustees of John Innes Centre in respect of the annual report and financial statements

The Trustees are responsible for preparing the Trustees' Annual Report and the financial statements in accordance with applicable law and regulations.

Company law requires the Trustees to prepare financial statements for each financial year. Under that law they are required to prepare the group and parent company financial statements in accordance with UK generally accepted accounting practice, including FRS102 (the Financial Reporting Standard applicable in the UK and Republic of Ireland).

Under company law the Trustees must not approve the financial statements unless they are satisfied that they give a true and fair view of the state of affairs of the group and charitable company and of the group excess of income over expenditure for that period. In preparing these financial statements, the Trustees are required to:

- select suitable accounting policies and then apply them consistently;
- make judgements and estimates that are reasonable and prudent;
- state whether applicable UK Accounting Standards have been followed, subject to any material departures disclosed and explained in the financial statements; and
- assess the groups and the charities ability to continue as a going concern. Disclosing as appropriate matters relating to going concern, and;
- use the going concern basis of accounting unless they intend to liquidate the group or charitable company or to cease operations, or have no realistic options other than to do so.

The Trustees are responsible for keeping adequate accounting records that are sufficient to show and explain the charitable company's transactions and disclose with reasonable accuracy at any time the financial position of the charitable company and enable them to ensure that its financial statements comply with the Companies Act 2006. They are also responsible for such internal control as they determine is necessary to enable the preparation of financial statements that are free from material misstatement whether due to fraud or error, and have general responsibility to take such steps that are reasonably open to them to safeguard the assets of the group and to prevent and detect fraud and other irregularities.

The Trustees are responsible for the maintenance and integrity of the corporate and financial information included on the charitable company's website. Legislation in the United Kingdom governing the preparation and dissemination of financial statements may differ from legislation in other jurisdictions.

Insurance disclosure

The Institute maintains liability insurance for its Trustees, with an annual aggregate cover limit for all claims against them in that capacity. The Trustees have also been granted a qualifying third party provision under section 233 of Companies Act 2006. Neither the Institute's indemnity nor insurance provides cover in the event that a Trustee is proved to have acted fraudulently or dishonestly.

Public benefit

The Trustees are satisfied they have complied with their duty in section 4 of the Charities Act 2011 to have due regard to public benefit guidance published by the Charities Commission. Based on this guidance, and as described in this Trustees' report, the Trustees believe the activities of JIC to be charitable in nature.

Independent auditor

KPMG LLP have been appointed as auditors and a resolution has been passed by the Board concerning their appointment as auditors.

Approval of the Trustees' report

The Trustees' Report and Strategic Report were approved by Governing Council on 15 October 2019.

Will West, Chairman

Independent Auditor's report

To the Members of John Innes Centre

Opinion

We have audited the financial statements of John Innes Centre ("the charitable company") for the year ended 31 March 2019 which comprise the Group Statement of Financial Activities, The Group and Parent Charitable Company Balance Sheets, The Group Charitable Cash Flow Statement and related notes, including the accounting policies in note 1.

In our opinion the financial statements:

- give a true and fair view of the state of the group's and the charitable company's affairs as at 31 March 2019 and of the group's incoming resources and application of resources, including its income and expenditure, for the year then ended;
- have been properly prepared in accordance with UK accounting standards, including FRS 102 The Financial Reporting Standard applicable in the UK and Republic of Ireland; and
- have been prepared in accordance with the requirements of the Companies Act 2006.

Basis for opinion

We conducted our audit in accordance with International Standards on Auditing (UK) ("ISAs (UK)") and applicable law. Our responsibilities are described below. We have fulfilled our ethical responsibilities under, and are independent of the group in accordance with, UK ethical requirements including the FRC Ethical Standard. We believe that the audit evidence we have obtained is a sufficient and appropriate basis for our opinion.

The impact of uncertainties due to the UK exiting the European Union on our audit

Uncertainties related to the effects of Brexit are relevant to understanding our audit of the financial statements. All audits assess and challenge the reasonableness of estimates made by the directors, such as future funding and related disclosures and the appropriateness of the going concern basis of preparation of the financial statements. All of these depend on assessments of the future economic environment and the company's future prospects and performance.

Brexit is one of the most significant economic events for the UK, and at the date of this report its effects are subject to unprecedented levels of uncertainty of outcomes, with the full range of possible effects unknown. We applied a standardised firm-wide approach in response to that uncertainty when assessing the company's future prospects and performance. However, no audit should be expected to predict the unknowable factors or all possible future implications for a company and this is particularly the case in relation to Brexit.

Going concern

The trustees have prepared the financial statements on the going concern basis as they do not intend to liquidate the group or the charitable company or to cease their operations, and as they have concluded that the group and charitable company's financial position means that this is realistic. They have also concluded that there are no material uncertainties that could have cast significant doubt over their ability to continue as a going concern for at least a year from the date of approval of the financial statements ("the going concern period").

We are required to report to you if we have concluded that the use of the going concern basis of accounting is inappropriate or there is an undisclosed material uncertainty that may cast significant doubt over the use of that basis for a period of at least a year from the date of approval of the financial statements. In our evaluation of the trustees' conclusions, we considered the inherent risks to the group's business model, including the impact of Brexit, and analysed how those risks might affect the group and charitable company's financial resources or ability to continue operations over the going concern period. We have nothing to report in these respects.

However, as we cannot predict all future events or conditions and as subsequent events may result in outcomes that are inconsistent with judgements that were reasonable at the time they were made, the absence of reference to a material uncertainty in this auditor's report is not a guarantee that the group or the charitable company will continue in operation.

Other information

The trustees are responsible for the other information, which comprises Trustees' Annual Report, incorporating the Strategic review. Our opinion on the financial statements does not cover the other information and, accordingly, we do not express an audit opinion or, except as explicitly stated below, any form of assurance conclusion thereon.

Our responsibility is to read the other information and, in doing so, consider whether, based on our financial statements audit work, the information therein is materially misstated or inconsistent with the financial statements or our audit knowledge. Based solely on that work:

- we have not identified material misstatements in the other information;
- in our opinion the information given in the Trustees' Annual Report, which constitutes the strategic report and the directors' report for the financial year, is consistent with the financial statements; and
- in our opinion those reports have been prepared in accordance with the Companies Act 2006.

Independent Auditor's report (continued)

Matters on which we are required to report by exception

Under the Companies Act 2006 we are required to report to you if, in our opinion:

- the charitable company has not kept adequate accounting records or returns adequate for our audit have not been received from branches not visited by us; or
- the charitable company financial statements are not in agreement with the accounting records and returns; or
- certain disclosures of trustees' remuneration specified by law are not made; or
- we have not received all the information and explanations we require for our audit.

We have nothing to report in these respects.

Trustees' responsibilities

As explained more fully in their statement set out on page 28, the trustees (who are also the directors of the charitable company for the purposes of company law) are responsible for the preparation of the financial statements and for being satisfied that they give a true and fair view; such internal control as they determine is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error; assessing the group's and the charitable company's ability to continue as a going concern, disclosing, as applicable, matters related to going concern; and using the going concern basis of accounting unless they either intend to liquidate the group or the charitable company or to cease operations, or have no realistic alternative but to do so.

Auditor's responsibilities

Our objectives are to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue our opinion in an auditor's report. Reasonable assurance is a high level of assurance, but does not guarantee that an audit conducted in accordance with ISAs (UK) will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of the financial statements.

A fuller description of our responsibilities is provided on the FRC's website at www.frc.org.uk/auditorsresponsibilities.

The purpose of our audit work and to whom we owe our responsibilities

This report is made solely to the charitable company's members, as a body, in accordance with Chapter 3 of Part 16 of the Companies Act 2006. Our audit work has been undertaken so that we might state to the charitable company's members those matters we are required to state to them in an auditor's report and for no other purpose. To the fullest extent permitted by law, we do not accept or assume responsibility to anyone other than the charitable company and its members as a body, for our audit work, for this report, or for the opinions we have formed.

Stephanie Beavis

Senior Statutory Auditor
for and on behalf of KPMG LLP,
Statutory Auditor Chartered Accountants
Dragonfly House,
2 Gilders Way,
Norwich,
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22nd November 2019

Consolidated statement of financial activities

For the year ended 31 March 2019

Incorporating an income and expenditure account

	Note	Unrestricted funds £000	Restricted general funds £000	Restricted capital funds £000	Total 2019 £000	Total 2018 £000
Income						
<i>Income from charitable activities</i>						
Grant income		18	36,290	-	36,308	35,137
Capital and maintenance grants		-	2,080	7,689	9,769	10,248
Other charitable income		521	-	-	521	531
<i>Income from other trading activities</i>						
Trading income		467	-	-	467	219
Rental income		320	-	-	320	312
<i>Investment income</i>						
		303	-	-	303	266
<i>Other income</i>		1,910	-	-	1,910	2,159
Total income	2	3,539	38,370	7,689	49,598	48,872
Expenditure						
Charitable activities	3	(2,924)	(36,998)	(4,899)	(44,821)	(41,519)
Raising funds	3	(396)	-	-	(396)	(425)
Trading expenditure	3	(138)	-	-	(138)	(109)
Other resources expended	3	(327)	-	-	(327)	(235)
Total expenditure		(3,785)	(36,998)	(4,899)	(45,682)	(42,288)
Net income for the year		(246)	1,372	2,790	3,916	6,584
<i>Associates and Minority interest</i>						
Share of operating result of associates	12	(41)	-	-	(41)	96
<i>Transfers and revaluation</i>						
Capital transfers		(567)	-	567	-	-
Other transfers	20	1,433	(1,724)	291	-	-
Gains on revaluation of tangible fixed assets	10	-	-	2,046	2,046	2,072
Net income and net movement in funds for the year		579	(352)	5,694	5,921	8,752
Funds brought forward		24,012	582	76,541	101,135	92,383
Funds carried forward	20	24,591	230	82,235	107,056	101,135

The Consolidated Statement of Financial Activities ("SoFA") includes all gains and losses recognised in the year. All incoming resources and expenditure relates to continuing activities.

The notes on pages 35 to 50 form part of these financial statements.

Note of consolidated operating surplus/(deficit) on a historical cost basis

For the year ended 31 March 2019

	Note	Total 2019 £000	Total 2018 £000
Operating surplus		3,916	6,584
Share of operating result of associates	12	(41)	96
Operating surplus after share of operating results of associates		3,875	6,680
Difference between historical cost depreciation and actual depreciation charge for the year calculated on the revalued amount		694	580
Operating surplus after share of operating results of associates, on a historical cost basis		4,569	7,260

The notes on pages 35 to 50 form part of these financial statements.

Consolidated and charitable company balance sheets

As at 31 March 2019

	Note	Group 2019 £000	Group 2018 £000	Company 2019 £000	Company 2018 £000
Fixed Assets					
Tangible assets	10	81,779	75,912	82,040	76,052
Intangible assets	11	61	110	61	110
Investments	12	-	-	1,281	631
<i>Investments in associates</i>					
Share of total assets		4,030	3,299	-	-
Share of total liabilities		(1,980)	(1,858)	-	-
	12	2,050	1,441	-	-
Total fixed assets		83,890	77,463	83,382	76,793
<i>Current assets</i>					
Stocks	13	214	229	214	229
Debtors	14	6,892	16,768	6,847	16,587
Cash at bank and in hand	15	38,442	37,008	37,925	36,860
		45,548	54,005	44,986	53,676
<i>Current liabilities</i>					
Creditors: amounts falling due within one year	16	(22,098)	(30,049)	(21,986)	(30,083)
Total net current assets		23,450	23,956	23,000	23,593
Total assets less current liabilities		107,340	101,419	106,382	100,386
Provisions for liabilities and charges	18	(284)	(284)	(284)	(284)
Total net assets	19	107,056	101,135	106,098	100,102
The funds of the charity					
<i>Unrestricted funds</i>					
Fixed assets reserve	20	9,693	8,960	9,389	8,494
Designated capital reserve	20	8,344	8,700	8,344	8,700
General reserve	20	6,554	6,352	6,104	5,989
Total unrestricted funds		24,591	24,012	23,837	23,183
<i>Restricted funds</i>					
General reserve	20	230	582	230	582
Fixed assets reserve	20	52,871	48,529	52,667	48,325
Designated capital reserve	20	8,038	8,038	8,038	8,038
Revaluation reserve	20	21,326	19,974	21,326	19,974
Total restricted funds		82,465	77,123	82,261	76,919
Total Charity funds		107,056	101,135	106,098	100,102
Capital employed	20	107,056	101,135	106,098	100,102

The financial statements on pages 31 to 50 were approved by the Governing Council on 15 October 2019 and were signed on its behalf by:

Will West, Chairman
Company registration number: 00511709

Consolidated statement of cash flows

For the year ended 31 March 2019

	Total 2019	Total 2018
	£000	£000
Cash flows from operating activities		
Net income and net movement in funds for the year	5,921	8,752
Share of operating result of associates	41	(96)
Revaluation of tangible fixed assets	(2,046)	(2,072)
Net income for the year	3,916	6,584
Interest receivable	(303)	(266)
Depreciation	4,899	4,382
Capital grants receivable	(7,689)	(9,571)
Loss on disposal of tangible assets	184	7
Decrease/(Increase) in stocks	15	(13)
Decrease/(Increase) in debtors	9,876	(5,250)
(Decrease)/Increase in creditors	(7,951)	9,673
(Decrease) in provisions	-	(14)
Net cash provided by operating activities	2,947	5,532
Cash flows from investing activities:		
Interest received	303	266
Purchase of tangible assets	(8,865)	(9,734)
Purchase of intangible assets	-	(23)
Investment in associate	(650)	(150)
Capital grants received	7,689	9,571
Proceeds from sale of tangible assets	10	152
Net cash (used in)/provided by investing activities	(1,513)	82
Change in cash and cash equivalents in the reporting period	1,434	5,614
Cash and cash equivalents at the beginning of the period	37,008	31,394
Total cash and cash equivalents at the end of the year	38,442	37,008

The notes on pages 35 to 50 form part of these financial statements.

Notes to the accounts

1. Accounting Policies

a. Basis of preparation

The group accounts have been prepared under the historical cost convention with items recognised at cost or transaction value unless otherwise stated in the relevant note/s to those accounts.

The accounts have been prepared in accordance with the accounting and reporting by Charities; Statement of Recommended Practice preparing their accounts in accordance with the Financial Reporting Standard applicable in the UK and Republic of Ireland (FRS102). Issued on 16th July 2016 and with the charities act 2011. The Charity constitutes public benefit entity as defined by FRS102.

The principal accounting policies adopted in these financial statements, which have been consistently applied, are as follows:

b. Basis of consolidation

The consolidated financial statements incorporate the financial statements of JIC and all its subsidiary undertakings in accordance with Financial Reporting Standard ("FRS") 102 "Accounting for Subsidiary Undertakings", and associated entities which are accounted for using the equity method.

Associates are entities over which JIC has significant influence but not control. Under the equity method, the investment is initially recognised at cost, and the carrying amount is increased or decreased to recognise JIC's share of the profit or loss of the associate after the date of acquisition. JIC's share of post-acquisition operating result is recognised in the statement of financial activities. Determination is made at each balance sheet date whether there is any evidence that the investment in the associate is impaired. If this is the case, the amount of impairment is calculated as the difference between the recoverable amount of the associate and its carrying value, and this amount is recognised adjacent to share of operating result of associates in the statement of financial activities.

JIC is one of four members of NBIP Partnership Limited ("NBIP"). The group accounts for NBIP as an associate, although in practice the company makes no profit or loss and has net assets of NIL, therefore has no impact on the Group financial statements.

The financial statements of all group undertakings and associates are made up to 31 March 2019.

A separate income and expenditure account has not been presented for JIC as this is exempted by Section 408 of the Companies Act 2006. The surplus of JIC was £5,996,000 (2018: £8,674,000).

c. Going concern

In light of the continued pressure on public sector funding, the Trustees have reviewed whether it was still appropriate for the financial statements to be prepared on a going concern basis. Having considered financial forecasts for the period to March 2022, and the level of unrestricted reserves, the Trustees have concluded that it remains appropriate to

prepare the financial statements on a going concern basis. No material uncertainty exists

d. Income

Charitable grant income represents grants received and receivable in the year from outside granting bodies.

Grants that provide core funding are recognised in the year in which entitlement passes. Grant funding received to train students and undertake research is recognised in the year in which the obligation is fulfilled. Grant funding is released to match expenditure incurred during the year together with any related contributions towards overhead costs.

Other charitable income represents non-grant revenue from providing scientific research services to other academic institutions and other services. Revenue is recognised in the year in which the obligation is fulfilled.

Trading income, which includes rent, other letting income and other income, relates to the non-charitable services undertaken by Norwich Biosciences Limited, JIC NRP Capital Limited (formerly Norwich Innovation Centre Limited) and John Innes Enterprises Limited, subsidiary companies of JIC, and is recognised in accordance with the terms of the contracts entered into, reflecting the point at which the obligations of the companies have been satisfied.

Investment income relates to interests receivable from treasury deposits and related party loans. The interest is recognised in the year that it is earned. Other income includes site infrastructure charges, UEA tuition fee income and miscellaneous income. Revenue is recognised within the year that the obligation is fulfilled.

Capital grants are recognised in the consolidated statement of financial activities ("SoFA") when entitlement passes.

e. Expenditure

Charitable activity expenditure represents the full cost of the research performed. It includes the cost of direct staff, consumable stocks and indirect costs apportioned on the basis of use.

Raising funds represents the cost of obtaining funds for research. The cost of obtaining funds includes an estimate of the time/salary cost of project leaders preparing and reviewing grant application forms.

Governance costs represent the necessary cost of compliance with statutory and constitutional requirements and any other costs which are not direct charitable expenditure.

Support costs have been allocated to charitable activity expenditure, costs of generating funds and governance costs based upon activity or headcount as indicated in note 4 to the financial statements.

1. Accounting Policies (continued)

Other expenditure relates to expenditure maintaining capital assets that does not meet the capitalisation policy.

Trading expenditure relates to the costs of undertaking the non-charitable services performed by subsidiary companies of JIC, and is recognised in the period in which it is incurred.

f. Restricted funds

Where research at JIC is funded by grants with conditions attached to them, these are shown as restricted. Capital grants received and receivable together with other restricted funds received and receivable and used to purchase tangible assets are included within restricted funds.

From April 2018 the strategic programme grants from the UK Research and Innovation - Biotechnology and Biological Sciences Research Council ("BBSRC") are shown as restricted.

A restricted fixed assets reserve has been established representing the net book value of fixed assets purchased from capital grants.

Restricted reserves include a designated capital reserve of £8,038,000 (2018: £8,038,000) in connection with funding received from BBSRC, which is to be used on future capital projects to be agreed with BBSRC.

g. Unrestricted funds

Research grants that do not contain conditions for the final receipt of funds have been treated as unrestricted. Funds received for non-specified purposes have also been included as unrestricted.

A fixed assets reserve has been established within unrestricted reserves representing the net book value of fixed assets funded from unrestricted reserves.

Unrestricted reserves that have been designated by the Governing Council for specific purposes are shown in separate designated reserves.

h. Capital transfers

A transfer from unrestricted to restricted reserves equal to the depreciation charge for assets purchased from unrestricted reserves is made as a capital transfer.

i. Other Transfers

A transfer from restricted to unrestricted reserves is made following the completion of performance conditions in connection with restricted non-capital grant activity.

j. Revalue depreciation transfer

A transfer from the restricted fixed asset reserve to the revaluation reserve is made in relation to the differences in the historic cost and revalued depreciated costs.

k. Designated capital transfers

A transfer from the unrestricted general reserve to the unrestricted designated reserve is made in relation to the expenditure which had been designated by Governing Council for use in the financial projections to March 2022.

l. Centre funded capital

Capital expenditure funded from unrestricted reserves is shown as a transfer from the unrestricted designated capital reserve or general reserve to the unrestricted fixed asset reserve.

m. Tangible assets and depreciation

Tangible assets are shown at cost or valuation less accumulated depreciation. The cost of tangible assets is their purchase cost, together with any incidental costs of acquisition. Depreciation is calculated using the straight line method to write off the cost or valuation of assets, less any estimated residual value, over their estimated useful lives at the following rates:

Leasehold land and buildings – over lease term or useful life, if shorter;

Freehold land – not depreciated;

Freehold buildings – 50 years straight line;

Plant, machinery and equipment – estimated economic life;

Scientific equipment – 5 to 15 years straight line;

Computer equipment – 3 years straight line;

Motor vehicles – 4 years straight line;

Combined heat and power scheme – 20 years straight line.

The leasehold buildings have been depreciated over their estimated economic life. The Trustees have determined that land is not subject to depreciation. Assets in the course of construction are not depreciated until the asset is in full use.

JIC includes in its financial statements leasehold land and buildings owned by third parties, which it occupies and enjoys through extended peppercorn leases, at their full value. The Trustees consider that in substance, the risks and rewards of ownership of the assets have passed to the Institute, and as such follow a policy of recognising the assets on the balance sheet which reflects its continuing occupancy of these assets for the foreseeable future.

n. Revaluation of tangible fixed assets

Leasehold land and buildings are revalued by an external surveyor on a depreciated replacement cost basis every five years. The valuation is updated in the interim period using indexation tables. Gains on revaluation are credited to the revaluation reserve. Losses, except in cases of a clear consumption of economic benefit, are charged to the operating result for the period, to the extent they are not offset by previous gains. In cases of a clear consumption of economic benefit, losses are charged to unrestricted or restricted reserves as applicable, irrespective of whether they are offset by previous gains.

1. Accounting Policies (continued)

o. Intangible fixed assets and amortisation

Computer Software development costs are recognised as intangible fixed assets at cost less amortisation and any provision for impairment. Intangible assets are amortised over the estimated life of the asset acquired less any residual value. Amortisation is calculated to write off the cost or valuation less the estimated residual value of intangible assets by equal instalments over their estimated useful economic lives as follows:

Computer Software – 3 to 5 years

Intangible assets under construction are not amortised until the asset is in full use.

p. Fixed asset investments

The consolidated balance sheet includes the group's share of each associate's gross assets and liabilities. The share of each associate's net income is reported in JIC's consolidated statement of financial activities.

q. Stocks

Stocks are stated at the lower of cost and net realisable value. Provision is made, where necessary, for slow moving or obsolete stock.

r. Debtors

Debtors are non-interest bearing and are stated at their nominal value, as reduced by appropriate allowances for estimated irrecoverable amounts.

s. Cash balances held as grant co-ordinator

Cash balances held on behalf of the European Union in the charitable company's capacity as grant co-ordinator are included within cash on the charitable company's balance sheet, and are disclosed in note 24 to the financial statements.

t. Trade creditors

Trade creditors are non-interest bearing and are stated at their nominal value.

u. Loans

Loans are stated on the balance sheet at amortised cost.

v. Provisions

A provision is recognised in the financial statements where there is a legal or constructive obligation to transfer economic benefit to a third party.

w. Staff and Pensions

JIC staff that joined before 1 October 2011 were employed by BBSRC up to 1 October 2017, when they transferred employment to the Institute under TUPE.

Transferred employees retain their membership of the Research Councils Pension Scheme (RCPS), where applicable, with JIC becoming an admitted employer in the scheme. The RCPS is a defined benefit scheme funded from annual grant-in-aid on a pay-as-you-go basis. The RCPS Pension Scheme is a multi-employer scheme and JIC is unable to identify its share

of the underlying assets and liabilities. JIC therefore accounts for the scheme as if it were a wholly defined contribution scheme. As a result, the amount charged to the income and expenditure account represents the contributions payable to the scheme in respect of the accounting period. Liabilities for the payment of future benefits are the responsibility of the RCPS and accordingly are not included in these Financial Statements.

JIC has recruited all new staff from October 2011 on its own terms and conditions, covering basic pay and allowances, contractual payments, tax, NI, and liabilities for pension contributions and redundancy. Such staff are eligible to join a defined contribution scheme.

x. Termination benefits

Redundancy payments are recognised as a liability and an expense only when the event is demonstrably committed to by either: a. termination of the employment of an employee or group of employees before the normal retirement date, or b. provision of termination benefits as a result of an offer made in order to encourage voluntary redundancy.

y. Operating leases

Rental costs are charged to the statement of financial activities on a straight line basis over the life of the lease.

z. Foreign currency transactions

The functional and reporting currency is pounds sterling. Transactions in foreign currencies are recorded at the rate of exchange ruling at the date of the transaction. Assets and liabilities denominated in foreign currencies are translated at year end exchange rates. All gains and losses are taken to the statement of financial activities in the year to which they relate.

aa. Financial instruments

Financial assets and financial liabilities are recognised upon becoming a party to the contractual provisions of the instrument.

The group only enters into basic financial instrument transactions that result in financial assets and liabilities such as trade and other accounts receivable and payable.

ab. Judgements in applying accounting policies and key sources of estimation

Preparation of the financial statements require management to make significant judgements and estimates. The items in the financial statements where these judgements and estimates have been made include:

- Depreciation, which has been charged in line with the accounting policy above. The amount of depreciation charged and net book value of the assets is included in Note 10.

- Leasehold land and buildings are held at a revalued amount. The valuation is performed by an external surveyor on a depreciated replacement cost basis every five years. The valuation is updated in the interim period using indexation tables.

2. Analysis of Incoming Resources

	Research activities	Student activities	Other activities	Total 2019	Total 2018
	£000	£000	£000	£000	£000
Grant income					
BBSRC	24,497	3,569	-	28,066	27,396
Other government departments	885	62	-	947	1,122
European Union	3,378	2	-	3,380	3,261
Industrial partners	193	188	-	381	290
John Innes Foundation	50	346	-	396	360
Other charities	1,918	90	-	2,008	1,401
Universities	6	53	-	59	35
Other grants	1,010	61	-	1,071	1,272
Total grant income	31,937	4,371	-	36,308	35,137
Capital and maintenance grants					
BBSRC					
Repairs & maintenance	4	-	-	4	150
Capital expenditure	9,265	-	-	9,265	10,098
John Innes Foundation					
Capital expenditure	500	-	-	500	-
Total capital grants	9,769	-	-	9,769	10,248
Other charitable income					
Scientific services	-	-	433	433	409
Miscellaneous income	-	-	88	88	122
Total other charitable income	-	-	521	521	531
Trading income					
John Innes Enterprises Limited	-	-	424	424	167
Norwich Biosciences Limited	-	-	43	43	52
Total trading income	-	-	467	467	219
Rental income					
Conferencing Facilities	-	-	237	237	226
Hill House	-	-	83	83	86
Total rental income	-	-	320	320	312
Investment income					
Interest receivable on cash deposits	-	-	296	296	260
Interest receivable on loan to related party	-	-	7	7	6
Total investment income	-	-	303	303	266
Other generated income					
Site infrastructure recharges	-	-	809	809	801
Other	-	-	1,101	1,101	1,358
Total other generated income	-	-	1,910	1,910	2,159
Total income	41,706	4,371	3,521	49,598	48,872

Included within income is income for restricted general funds of £38,370k (2018: £35,088k), and income for restricted capital funds of £7,689k (2018: £9,571k). All other income is unrestricted.

3. Analysis of Resources Expended

	Note	Research activities £000	Student activities £000	Other activities £000	Total 2019 £000	Total 2018 £000
Direct charitable expenditure:						
Staff costs		14,281	-	-	14,281	14,371
Direct costs		11,211	4,439	-	15,650	14,077
Depreciation		4,899	-	-	4,899	4,382
Governance costs	4	-	-	75	75	84
Support costs	4	8,144	1,772	-	9,916	8,605
Expenditure on charitable activities		38,535	6,211	75	44,821	41,519
Raising funds	4	-	-	396	396	425
Trading expenditure		-	-	138	138	109
Other resources expended		-	-	327	327	235
Total expenditure		38,535	6,211	936	45,682	42,288

Included within the expenditure is restricted general expenditure of £36,998K (2018 £34,227k), and restricted capital resources expended (depreciation) of £4.899K (2018 £4.382k). All other expenditure is unrestricted.

Analysis of governance costs	Total 2019 £000	Total 2018 £000
Staff costs	25	41
Travel costs	9	16
Other costs	41	27
Total governance costs	75	84

4. Allocation of Support Costs, Governance and Raising Funds

	Research activities £000	Student activities £000	Raising funds £000	Governance costs £000	Total 2019 £000	Total 2018 £000	Basis of Allocation
Governing Council and SIAB	-	-	-	34	34	59	Headcount
Lab management	405	88	-	-	493	527	Headcount
Institute management	460	100	-	-	560	581	Headcount
Scientific services	182	40	-	-	222	145	Headcount
Facilities management and utilities*	4,923	1,071	-	-	5,994	5,220	Headcount
Finance and Purchasing*	648	141	-	-	789	634	Headcount
Computing and Library*	633	138	-	-	771	689	Headcount
Human Resources*	258	56	-	-	314	327	Headcount
Contracts services*	-	-	263	-	263	297	Activity
Other support services	635	138	133	41	947	635	Activity
Total support costs	8,144	1,772	396	75	10,387	9,114	

* includes services supplied by NBI Partnership Limited (see note 23).

Scientific services costs are shown net of recharges to science projects.

5. Taxation

John Innes Centre ("JIC") is an exempt charity within the meaning of the Charities Act 2011 and as such is a charity within the meaning of section 506(1) of the Income and Corporation Taxes Act 1988 and is not subject to corporation tax in respect of its charitable activities.

The trading activities of the subsidiary companies are subject to corporation tax; however profits in the year are gifted to the charitable company resulting in a £nil (2018: £nil) tax charge payable.

Unutilised losses of £79,000 (2018: £79,000) have been carried forward within the subsidiary companies for offset against future taxable profits. A deferred tax asset has not been recognised due to uncertainty over utilisation of these losses.

6. Operating Surplus

Operating surplus is stated after charging:

	Total 2019	Total 2018
	£000	£000
Audit services:		
Fees payable to the charitable company's auditors for the audit of charitable company and consolidated financial statements	29	29
Fees payable for the audit of the charitable company's subsidiaries pursuant to legislation	-	1
Non-audit services:		
Non audit fees payable to the charitable company's auditors	12	-
Depreciation	4,899	4,382
Loss on disposal of tangible assets	184	7
Hire of plant and equipment	30	49
Rent of land and buildings	72	44
Loss/(Profit) on foreign exchange translations	25	(46)

7. Net Income from Trading Activities of Subsidiaries

	John Innes Enterprises Limited	Norwich Biosciences Limited	JIC NRP Capital Limited	Norwich Research Limited	Total 2019	Total 2018
Profit and loss account	£000	£000	£000	£000	£000	£000
Turnover	424	43	-	-	467	219
Cost of sales	(138)	-	-	-	(138)	(109)
Gross profit	286	43	-	-	329	110
Administrative expenses	-	-	-	-	-	-
Operating profit	286	43	-	-	329	110
Interest received	-	-	-	-	-	-
Operating profit for the year	286	43	-	-	329	110

In addition to the above, £155,029 (2018: £45,103) in Gift Aid was paid to the charitable company in the year.

8. Remuneration of Members of the Governing Council

None of the members of the Governing Council received any remuneration from the group during the current or prior year for their duties as Trustees. During the year, Professor O Leyser, Trustee of JIC, received £5,000 (2018: £nil) as chair of JIC's Science Impact Advisory Board ("SIAB").

Attendance expenses incurred by 4 (2018: 3) Trustees whilst carrying out their duties amounted to £875 during the year (2018: £1,064).

9. Employee Information

The monthly average number of persons employed by or deployed to the group and charitable company during the year, analysed by category, was as follows:

Group and charitable company	2019 Number	2018 Number
Scientific	358	361
Office management and services	42	49
Total	400	410

The aggregate payroll costs of these persons were:

Group and charitable company	Note	2019 £000	2018 £000
Wages and salaries		13,513	13,568
Redundancy costs		118	233
Social security costs		1,360	1,356
Other pension costs	22	2,120	2,135
Total		17,111	17,292

An analysis of the number of staff who fall within staff cost bands (excluding pension cost) from £60,000 upwards is provided below.

Group and charitable company	2019 Number	2018 Number
£60,000 - £69,999	9	9
£70,000 - £79,999	9	12
£80,000 - £89,999	8	4
£90,000 - £99,999	4	7
£100,000 - £109,999	5	3
£110,000 - £119,999	1	2
£120,000 - £129,999	3	-
£130,000 - £139,999	-	1
£140,000 - £149,999	1	-
£160,000 - £169,999	-	1
£170,000 - £179,999	-	1
£180,000 - £189,999	1	-
Total	41	40

The number of staff with emoluments greater than £60,000 who were also members of the Research Councils' Pension Schemes was 24 (2018: 26). Fourteen staff (2018: Twelve) with emoluments greater than £60,000 are members of a defined contribution pension scheme.

Staff that joined prior to 1 October 2011 were employed by BBSRC up to 1 October 2017, when these employees transferred employment to the Institute under TUPE. Transferred employees retain their membership of the Research Councils Pension Scheme, where applicable, with JIC becoming an admitted employer in the scheme.

Staff that joined after 1 October 2011 are employed under JIC terms & conditions.

The key management personnel of the parent charity, JIC, comprise of the Trustees and the members of the strategy committee.

The key management personnel of the group comprise those of the charity and the key management personnel of the wholly owned subsidiaries, John Innes Enterprises Ltd, Norwich Biosciences Ltd, Norwich Research Ltd and JIC NRP Capital Ltd. All the subsidiaries key management personnel are the same as the parent company. No staff costs were recharged in respect of this. The employee costs (salaries, social security costs and pension costs) of the key management personnel for the group and charitable company were £1,271,798 (2018: £1,453,836).

10. Tangible Assets

Group	Freehold land and buildings	Long leasehold land and buildings	Plant, machinery and equipment	Assets under construction	Total
	£000	£000	£000	£000	£000
Cost/Valuation					
At 1 April 2018	3,771	60,918	26,524	8,027	99,240
Transfers	-	3,365	4,409	(7,774)	-
Additions	-	2,385	5,156	1,324	8,865
Revaluation	-	2,046	-	-	2,046
Disposals	-	-	(49)	(194)	(243)
At 31 March 2019	3,771	68,714	36,040	1,383	109,908
Accumulated Depreciation					
At 1 April 2018	-	4,469	18,859	-	23,328
Charge for the year	-	2,560	2,290	-	4,850
Disposals	-	-	(49)	-	(49)
At 31 March 2019	-	7,029	21,100	-	28,129
Net book value at 31 March 2019	3,771	61,685	14,940	1,383	81,779
Net book value at 31 March 2018	3,771	56,449	7,665	8,027	75,912
Charitable company					
	£000	£000	£000	£000	£000
Cost/Valuation					
At 1 April 2018	3,771	60,918	26,524	8,167	99,380
Transfers	-	3,505	4,409	(7,914)	-
Additions	-	2,506	5,156	1,324	8,986
Revaluation	-	2,046	-	-	2,046
Disposals	-	-	(49)	(194)	(243)
At 31 March 2019	3,771	68,975	36,040	1,383	110,169
Accumulated Depreciation					
At 1 April 2018	-	4,469	18,859	-	23,328
Charge for the year	-	2,560	2,290	-	4,850
Disposals	-	-	(49)	-	(49)
At 31 March 2019	-	7,029	21,100	-	28,129
Net book value at 31 March 2019	3,771	61,946	14,940	1,383	82,040
Net book value at 31 March 2018	3,771	56,449	7,665	8,167	76,052

Assets under construction represent capital items which are not yet in full economic use.

JIC includes in its financial statements land and buildings owned by third parties, which it occupies and enjoys through extended peppercorn leases, at their full value. The Trustees consider that in substance, the risks and rewards of ownership of the assets have passed to the Institute, and as such a policy of recognising the assets on the balance sheet reflects its continuing occupancy of these assets for the foreseeable future.

The group and charitable company's leasehold land and buildings were revalued by an external surveyor (Powis Hughes Chartered Surveyors, RICS) on a depreciated replacement cost basis at 31 March 2017. These values have been updated at 31 March 2019 using indexation tables.

Leasehold land and buildings on an historical cost basis would be recorded at a net book value of £40,839,000 (2018: £36,694,000).

All of the charitable company's assets at 31 March 2019 are used for direct charitable purposes.

11. Intangible Assets

Group and Charitable company	Software development	Total
	£000	£000
Cost		
At 1 April 2018	147	147
Additions	-	-
At 31 March 2019	147	147
Accumulated Depreciation		
At 1 April 2018	37	37
Charge for the year	49	49
At 31 March 2019	86	86
Net book value at 31 March 2019	61	61
Net book value at 31 March 2018	110	110

12. Investments

Subsidiaries

The following are the operating subsidiary undertakings in which the charitable company has an interest:

Subsidiary Undertaking	Registration Number	Country of registration	Principal activity	Class and percentage of shares held
John Innes Enterprises Limited	02549904	England	Contract research	100% ordinary shares
Norwich Biosciences Limited	03076575	England	Management of intellectual property	100% ordinary shares
Norwich Research Limited	02814101	England	Dormant	100% ordinary shares
JIC NRP Capital Limited	06145922	England	Member of Anglia Innovation Partnership LLP	100% ordinary shares

The registered address for all subsidiaries is John Innes Centre, Norwich Research Park, Colney Lane, Norwich NR4 7UH.

The charitable company's investment in subsidiary undertakings at cost amounts to £1,248 (2018: £1,248) and accumulated impairment of £244 (2018: £244) has been recognised against cost.

JIC NRP Capital Limited is a member of Anglia Innovation Partnership LLP (formerly Norwich Research Partners LLP), which is responsible for the management and development of the Norwich Research Park (NRP) estate and for the furtherance of the NRP Enterprise Vision. The company did not trade during the year.

The net income from the trading activities of the subsidiaries during the year is shown in note 7.

Associates

The charitable company has an investment in Plant Bioscience Limited ("PBL"), a company registered in England and Wales, representing 33% (2018: 33%) of the ordinary £1 issued share capital. Plant Bioscience Limited manages the intellectual property rights of the charitable company and other organisations. This company is deemed to be an associate of the group and has therefore been included in the consolidated financial statements on that basis.

The charitable company has a 25% interest in NBI Partnership Limited ("NBIP"). NBIP supplies support and administrative services to JIC and the other Norwich Institutes (Quadram Bioscience Institute, Earlham Institute and The Sainsbury Laboratory) on a not-for-profit basis. NBIP fully recharges its costs to the four research organisations and accordingly it generates no profit or loss.

During the year, JIC invested a further £650,000 in the non-voting share capital of Leaf Systems International Limited ("LSI"). At 31 March 2019 JIC had a total investment of 45% voting share capital and £1,280,000 non-voting share capital. JIC has agreed to subscribe for a further £350,000 non-voting shares in two tranches concluding on 26 March 2020. LSI is a commercial research & development company specialising in the expression and production of proteins, metabolites and complex natural products.

12. Investments (continued)

Investments – Company

The movement in the value of investments during the year was as follows:

	Total 2019	Total 2018
	£000	£000
Valuation		
At beginning of year	631	481
Acquisition	650	150
At end of year	1,281	631
Historical cost		
As at 1 April 2018 and 31 March 2019	1,281	631

Investments – Group

The Group's share of the operating results of associates was as follows:

Group	Leaf Systems International £000	Plant Bioscience Limited £000	Total 2019	Total 2018
	£000	£000	£000	£000
Associates, share of:				
Turnover	294	1,185	1,479	920
Operating profit	(239)	237	(2)	88
Movement in opening balance	(5)	(34)	(39)	8
Share of result for the year	(244)	203	(41)	96

The Group's investment in associates is represented as follows:

Group	Leaf Systems International Limited A shares £000	Leaf Systems International Limited B shares £000	Plant Bioscience Limited £000	Total 2019	Total 2018
	£000	£000	£000	£000	£000
<i>Associates: Share of net assets</i>					
At beginning of year	(122)	630	933	1,441	1,195
Additions	-	650	-	650	150
Share of result for the year	(244)	-	203	(41)	96
At end of year	(366)	1,280	1,136	2,050	1,441
<i>Represented by:</i>					
Share of total assets	1,069	1,280	1,681	4,030	3,299
Share of total liabilities	(1,435)	-	(545)	(1,980)	(1,858)
Share of net assets	(366)	1,280	1,136	2,050	1,441

The Trustees consider the value of investments included in the financial statements to be supported by their underlying assets.

13. Stocks

Group and charitable company	Total 2019 £000	Total 2018 £000
Raw materials and consumables	214	229
Total	214	229

There is no material difference between the valuation of stock and its replacement cost

14. Debtors

	Note	Group 2019 £000	Group 2018 £000	Company 2019 £000	Company 2018 £000
<i>Grants receivable:</i>					
from government bodies	23	1,596	6,472	1,596	6,472
from other sources		1,566	1,246	1,566	1,246
Trade debtors		489	353	201	353
Amounts owed by subsidiary undertakings		-	-	369	5
Amounts owed by other related parties	23	1,038	714	1,038	714
Other debtors		546	705	473	577
Prepayments and accrued income		1,657	7,278	1,604	7,220
Total amounts falling due within one year		6,892	16,768	6,847	16,587

Grants receivable from government bodies includes £1,272,785 in relation to capital funding receivable from BBSRC (2018: £4,320,892).

15. Cash at Bank and in Hand

	Group 2019 £000	Group 2018 £000	Company 2019 £000	Company 2018 £000
Cash at bank	38,439	37,005	37,924	36,857
Cash in hand	3	3	1	3
Total	38,442	37,008	37,925	36,860

16. Creditors: Amounts Falling Due within One Year

	Note	Group 2019 £000	Group 2018 £000	Company 2019 £000	Company 2018 £000
<i>Grants received in advance:</i>					
from government bodies	23	3,954	4,067	3,954	4,067
from other sources		6,769	5,115	6,715	5,115
Trade creditors		2,196	7,324	2,181	7,320
Amounts owed to subsidiary undertakings		-	-	9	681
Amounts owed to other related parties	23	1,119	800	1,119	800
Other creditors		2,458	1,957	2,458	1,957
Taxation and social security		404	378	352	378
Accruals and deferred income		5,198	10,408	5,198	9,765
Total amounts falling due within one year		22,098	30,049	21,986	30,083

17. Reconciliation of Movement in Grants Receivable

Group and charitable company		Total 2019	Total 2018
	Note	£000	£000
Grants receivable	14	3,162	7,718
Grants received in advance	16	(10,723)	(9,182)
Net grants received in advance		(7,561)	(1,464)
<hr/>			
Net grants received in advance at beginning of year		(1,464)	(1,352)
Grant monies received during the year		(52,174)	(45,497)
Grant money released to SOFA during the year		46,077	45,385
Net grants received in advance		(7,561)	(1,464)

18. Provisions for liabilities and charges

Group and charitable company		Total 2019	Total 2018
		£000	£000
Restructuring provision at beginning of year		284	298
Charge in the year		-	-
Utilised		-	(14)
Provision at end of year		284	284

The restructuring provision relates to future compensation payments due under the redundancy scheme in connection with the restructuring of science programmes and the administration and support functions. Although the restructuring provision has not been discounted, it is stated at the present value of future amounts payable since inflationary increases linked to the redundancy settlements have similarly been excluded from the provision.

19. Analysis of Net Assets Between Funds

	Fixed assets £000	Net current assets £000	Creditors over one year and provisions £000	Total 2019 £000
Group				
<i>Unrestricted:</i>				
Fixed assets reserve	9,693	-	-	9,693
Designated capital reserve	-	8,344	-	8,344
General	-	6,838	(284)	6,554
<i>Restricted:</i>				
General reserve	-	230	-	230
Fixed assets reserve	52,871	-	-	52,871
Designated capital reserve	-	8,038	-	8,038
Revaluation reserve	21,326	-	-	21,326
Net assets	83,890	23,450	(284)	107,056
Charitable company				
<i>Unrestricted:</i>				
Fixed assets reserve	9,389	-	-	9,389
Designated capital reserve	-	8,344	-	8,344
General	-	6,388	(284)	6,104
<i>Restricted:</i>				
General reserve	-	230	-	230
Fixed assets reserve	52,667	-	-	52,667
Designated capital reserve	-	8,038	-	8,038
Revaluation reserve	21,326	-	-	21,326
Net assets	83,382	23,000	(284)	106,098

The unrestricted fixed assets reserve relates to the net book value of fixed assets purchased from unrestricted funds. The restricted fixed assets reserve relates to the net book value of fixed assets purchased from capital grants.

The designated capital reserves are not endowment funds. The unrestricted designated capital reserve relates to funds designated by Governing Council for use in relation to planned capital investments in the financial projections to March 2022. The restricted capital reserve relates to funding received from BBSRC to be used in connection with future estates rebuild costs with the agreement of BBSRC.

The restricted general reserve relates to ring fenced strategic funding received from BBSRC. This funding has performance conditions attached and is transferred to the general reserve once the conditions have been met.

20. Analysis of Funds Movements

	Unrestricted fixed assets	Unrestricted designated capital	Unrestricted general	Restricted general	Restricted fixed assets	Restricted designated capital	Revaluation reserve	Total 2019
	£000	£000	£000	£000	£000	£000	£000	£000
Group								
At 1 April 2018	8,960	8,700	6,352	582	48,529	8,038	19,974	101,135
Total income and expenditure for the year	-	-	(246)	1,372	2,790	-	-	3,916
Associates	(41)	-	-	-	-	-	-	(41)
Revaluation of tangible assets	-	-	-	-	-	-	2,046	2,046
Revalue depreciation transfer	-	-	-	-	694	-	(694)	-
Capital transfers	(567)	-	-	-	567	-	-	-
Designated capital transfers	-	-	-	-	-	-	-	-
Centre funded capital	1,341	(1,341)	-	-	-	-	-	-
Other transfers	-	985	448	(1,724)	291	-	-	-
At 31 March 2019	9,693	8,344	6,554	230	52,871	8,038	21,326	107,056
Charitable company								
At 1 April 2018	8,494	8,700	5,989	582	48,325	8,038	19,974	100,102
Total income and expenditure for the year	-	-	(54)	1,214	2,790	-	-	3,950
Revaluation of tangible assets	-	-	-	-	-	-	2,046	2,046
Revalue depreciation transfer	-	-	-	-	694	-	(694)	-
Capital transfers	(567)	-	-	-	567	-	-	-
Designated capital transfers	-	-	-	-	-	-	-	-
Centre funded capital	1,462	(1,462)	-	-	-	-	-	-
Other transfers	-	1,106	169	(1,566)	291	-	-	-
At 31 March 2019	9,389	8,344	6,104	230	52,667	8,038	21,326	106,098

The revalue depreciation transfers have been made to reflect differences in the historical cost and revalued depreciation costs.

Capital transfers relate to fund movements in connection with fixed assets and depreciation; ensuring assets are appropriately reflected in separate reserves.

The designated capital transfer relates to costs incurred in the year that have been set against the designated strategic reserve.

Centre funded capital transfers relate to capital expenditure funded from the unrestricted designated capital reserve and general reserve.

Where research at JIC is funded by grants with performance conditions attached to them these are shown in the Restricted general fund. When the conditions have been met the remaining contribution to core funding is transferred to general reserves, shown in other transfers above.

21. Commitments

Group and charitable company	Total 2019	Total 2018
	£000	£000
Capital commitments at the end of the financial year for which no provision has been made:		
Contracted	1,439	6,375
Amounts due under other operating leases for plant and machinery:		
Expiring in less than one year	10	10
Expiring between one and two years	5	-
Expiring between two and five years	2	2
	17	12

22. Pension Schemes

JIC staff that joined before 1 October 2011 were employed by BBSRC up to 1 October 2017, when they transferred employment to the Institute under TUPE.

Transferred employees retain their membership of the Research Councils Pension Scheme (RCPS), where applicable, with JIC becoming an admitted employer in the scheme. The RCPS is a defined benefit scheme funded from annual grant-in-aid on a pay-as-you-go basis. The RCPS Pension Scheme is a multi-employer scheme and JIC is unable to identify its share of the underlying assets and liabilities. JIC therefore accounts for the scheme as if it were a wholly defined contribution scheme. As a result, the amount charged to the income and expenditure account represents the contributions payable to the scheme in respect of the accounting period. Liabilities for the payment of future benefits are the responsibility of the RCPS and accordingly are not included in these Financial Statements. The employer contribution rate during the year was 26% (2018: 26%).

JIC employees that joined after 30 September 2011 are eligible to join a defined contribution scheme.

The total pension charge for the year was £2,119,685 (2018: £2,134,678), with outstanding contributions at the year-end of £79,927 (2018: £82,389).

23. Related Party Transactions

The charitable company has taken advantage of the exemption under FRS102, not to disclose transactions and balances with its wholly owned subsidiaries

BBSRC

JIC is strategically funded by BBSRC. Grants received from BBSRC are detailed in note 2. At 31 March 2019, BBSRC owed JIC £1,108,646 (2018: £3,177,571).

During the year BBSRC paid JIC £811 (2018: £201,596) compensation for redundancy and salary costs incurred in restructuring and £7,346 (2018: £7,119) for other costs.

In April 2018, BBSRC became part of UK Research and Innovation (UKRI), a new organisation that brings together the UK's seven research councils, Innovate UK and Research England.

Plant Bioscience Limited

PBL is 33% directly owned by JIC. PBL has been accounted for as an associate within the consolidated financial statements. Services provided to JIC by PBL in the year to 31 March 2019 amounted to £57,484 (2018: £48,667). During the year, PBL paid JIC £36,328 (2018: £35,153) in rent and £1,778 (2018: £487) in student sponsorship and research grants. At 31 March 2019, PBL owed JIC £nil (2018: £nil).

Leaf Systems International Limited

During the year, JIC invested £650,000 in the non-voting share capital of Leaf Systems International Limited. LSI has been accounted for as an associate within the consolidated financial statements. JIC paid LSI £656,835 (2018: £46,752) for services in the year ended 31 March 2019. During the year, LSI paid JIC £30,459 (2018: £25,286) for costs incurred by JIC on behalf of LSI. At 31 March 2019, LSI owed JIC £1,871 (2018: £12,331).

NBI Partnership Limited

JIC is one of the four guarantors of NBI Partnership Ltd ("NBIP"), a company limited by guarantee. JIC has provided short-term loans to NBIP to enable NBIP to manage its cash requirements. Interest is payable on the loan at 2% and during the year JIC charged £6,700 (2018: £6,163) in respect of interest due. At 31 March 2019, JIC had a loan balance with NBIP of £335,000 (2018: £309,000).

JIC was charged £4,309,127 (2018: £4,273,586) for services by NBIP under a cost sharing agreement. As at 31 March 2019, JIC owed NBIP £405,589 (2018: £430,812). NBIP paid JIC £53,858 (2018: £75,443) for services and, as at 31 March 2019, NBIP owed JIC £1,993 (2018: £8,391).

Anglia Innovation Partnership LLP (formerly NRP LLP)

JIC is a member of Anglia Innovation Partnership LLP through its 100% subsidiary, JIC NRP Capital Limited. Anglia Innovation Partnership LLP is responsible for the management and development of the Norwich Research Park (NRP) estate and for the furtherance of the NRP Enterprise Vision. During the year, JIC received services totalling £643 (2018: £1,511), and was charged £144,792 (2018: £142,647) for estate costs. As at 31 March 2019, JIC owed Anglia Innovation Partnership LLP £144,792 (2018: £79,868).

JIC invoiced Anglia Innovation Partnership LLP for services totalling £88,889 (2018: £152,103). As at 31 March 2019 Anglia Innovation Partnership LLP owed JIC £8,237 (2018: £48,000).

23. Related Party Transactions (continued)

University of East Anglia

UEA is a member of the charitable company and it nominates one Trustee to the Governing Council.

The majority of PhD students carrying out research at JIC are registered with UEA. During the year UEA provided student services of £650,667 (2018: £789,882) and other services amounting to £27,079 (2018: £165,832) to JIC. At 31 March 2019, JIC owed UEA £552,042 for student fees (2018: £270,707) and £16,328 for other services (2018: £18,667).

During the year, JIC received £448,759 (2018: £291,042) in student payments from UEA and provided £253,999 (2018: £381,347) of other services. At 31 March 2019, UEA owed JIC £690,248 (2018: £325,061) for student fees and services.

John Innes Foundation

JIF is a member of the charitable company and it nominates one Trustee to the Governing Council of JIC. The following transactions took place during the year:

	Total 2019	Total 2018
	£000	£000
<i>Paid to JIC:</i>		
Grants for studentships	346	332
Grants for research project	36	5
Contribution to salary costs	12	12
Contribution to women of the future	2	2
Contribution to field trials station	500	-
Contribution to landscaping costs	-	9
	896	360

At 31 March 2019, JIF owed JIC £968 (2018: £11,663).

24. Cash Held as European Grant Co-Ordinator

JIC holds cash of £1,628,713 (2018: £1,821,254) on behalf of the European Union in its capacity as project co-ordinator on a number of projects. JIC acts as an intermediary only and does not control the risks and rewards associated with the cash. An equal balance is held in other creditors.

25. Ultimate Parent Undertaking and Controlling Party

The Trustees consider that there is no ultimate parent undertaking and controlling party. JIC is the parent undertaking of the smallest and largest group of undertakings to consolidate these financial statements.

26. Contingent Liability

JIC receives grant income from funding bodies, such as the BBSRC and the European Union, that routinely undertake retrospective financial audits of costs claimed. Such audits may from time to time give rise to adjustments to grant income receivable. No general provision is made for such potential audit adjustments in the financial statements.

Charity information

Directors and Trustees

Dr W H L West	Chair – Governing Council & Remuneration Committee
Prof J C Murrell	
Ms J K Midura	
Mr K R Norman	
Dr D J Keith	
Mr R J Maskell	
Prof O Leyser	Chair – Science and Impact Advisory Board
Prof N Talbot	
Mr J H Innes	Chair – Audit Committee

Director of the Institute Prof D Sanders

Company Secretary Mr D Foreman

Key Management Personnel

Prof D Sanders
 Prof R Morris
 Prof C Domoney
 Prof B Wilkinson
 Dr C Thomas
 Mr C Darby
 Prof G Moore
 Prof L Ostergaard
 Prof M Howard
 Mr D Foreman
 Ms A O'Halleron
 Mr B Morrison
 Mr J Tebbutt

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Registered company number 00511709

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