

John Innes Centre

Unlocking Nature's Diversity

John Innes Centre

Director

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Introduction to the John Innes Centre

This specification should be read in conjunction with information available on the John Innes Centre website at: www.jic.ac.uk

The John Innes Centre (JIC) is a world-renowned, independent, international centre of excellence in plant science, genetics and microbiology. The John Innes Centre fosters a creative, curiosity-driven approach to answering fundamental questions in bio-science, and translating research into societal benefits. Over the last 110 years, the John Innes Centre has pioneered a range of fundamental breakthroughs, resulting in major societal impacts.

JIC performs cutting-edge, high-quality fundamental, strategic, and applied research and is one of eight <u>UKRI-BBSRC</u> strategically funded Research Institutes. It is located on the Norwich Research Park in the UK.

The JIC's mission is to generate knowledge of plants and microbes through fundamental research and to use this knowledge to benefit agriculture, the environment, human health and well-being. It provides world-class postgraduate education in plant science and microbiology as part of its mission to train the scientific leaders of the future and is committed to engaging with policy makers and the public.

JIC is at an exciting point in its history, having recently developed an ambitious vision to deliver solutions to global challenges with The Sainsbury Laboratory (TSL). <u>Healthy Plants, Healthy People, Healthy Planet</u> (HP³) is an ambitious vision to secure a safer, healthier and more sustainable future through the power of plant and microbial science.

HP³ addresses three critical challenges facing the planet which must be addressed in a rapidly closing window of time. These are:

- Feeding the world by sustainably increasing crop yields.
- Combatting global health threats such as antimicrobial resistance and viral pandemics.
- Meeting the challenge of climate change developing crops resilient to environmental fluctuations and requiring inputs that are low carbon.

Together with TSL and the BBSRC, the JIC is building a case for capital investment in cutting-edge, future-proofed facilities that will create a UK hub for plant and microbial research to supercharge the national ability to translate scientific knowledge into practical solutions and allow delivery of their HP³ vision.

In 2020, with partners on the Norwich Research Park, the JIC launched <u>The Norwich Institute for</u> <u>Sustainable Development</u>, a transdisciplinary hub that unites researchers working across environmental, plant, microbial, food, health and social sciences. The vision for this new institute is to create synergies across the natural and social sciences for excellent research and global public good. Transforming research and practice to enable equitable, food secure and sustainable futures.

Over the last five years, JIC has launched several spin-out companies. These companies cover a range of fields, including biomedical aspects of vaccine production, the development of advanced in-field diagnostic tools to speed up testing for high-profile viral infections and the production of enzymes, substrates and technical support, providing the pharmaceutical industry and researchers with tools to screen novel anti-infective and anti-cancer compounds.

The JIC's success is built on its international workforce, collaborations and outlook. It is a vibrant, diverse, multinational research community, including a workforce from 36 countries. Its international scientific reputation is built on its commitment to excellence, as well as training and developing all staff, strengths in publications and research, the provision of state- of-the-art research facilities, and a high performing environment. It attracts leading early career researchers and the brightest PhD students, postdoctoral scientists and fellows with the potential to be future research leaders.

In 2020/21, the John Innes Centre had a total income of £50.3mn and total expenditure was £46.1mn. This includes research, research infrastructure, and research support. Independent research has shown that for every £1 invested in the John Innes Centre, £14 is generated for the wider UK economy.

In 2017, Thomson Reuters Incites placed the JIC, alongside The Sainsbury Laboratory, as the world's leading institution in plant sciences, based on citations of plant science journal articles and proceedings papers published over the previous decade. JIC Group Leaders are highly successful at winning external funding. As a testimony to the dynamic, supportive and collegiate working environment and research excellence there are seven Fellows of the Royal Society, four EMBO members and five Group Leaders with civic Honours. Many JIC scientists are members of Science Advisory Boards, Editorial Boards and grant reviewing committees, and recent highlights of awards won by the researchers include:

- <u>Professor Cathie Martin</u> FRS won the 2022 Rank Prize for Nutrition for her globally significant research in making fruit and vegetables more nutritious.
- <u>Professor Dame Caroline Dean FRS</u> was the recipient of the 2020 Wolf Prize in Agriculture, a prize awarded annually to prominent scientists for their unique contribution to humanity.
- <u>Dr Diane Saunders</u> was named the 2019 BBSRC Innovator of the Year for international impact following her group's work on developing genomics-based approaches for rapid point-of-care fungal disease diagnostics.

The JIC's focus on identifying, nurturing and training future research leaders is a primary driver of its scientific effectiveness. JIC is committed to staff and student development and to an equal opportunities agenda that encourages all aspects of career development. JIC's commitment to equality was rewarded by a Gold Athena SWAN award, which recognises commitment to gender equality in Science, Technology, Engineering, Medicine and Maths, and by becoming a founding signatory to the <u>Technician</u> <u>Commitment</u>.





JIC's Research

The JIC's core research areas are funded by the UK Biotechnology and Biological Sciences Research Council (BBSRC) and directly address the UK Government's objectives in Food Security, Net Zero, Human Health and Industrial Biotechnology. The strategically funded BBSRC research is organised into four Institute Strategic Programmes (ISPs):

Molecules from Nature – Humans are dependent on products made by plants and microbes. Plants provide our food, and the nutrients they contain are essential for our wellbeing. Plants produce many important compounds including drugs, such as anti- cancer agents and treatments for heart conditions. Plant products have a multitude of industrial uses, for example in paints, detergents, biodegradable plastics, pesticides and skincare products. Bacteria make many beneficial products, including medicines for life-threatening conditions. For example, soil bacteria called actinomycetes produce half of all clinically useful antibiotics.

The MfN ISP focuses on how plants and microbes generate this diversity of molecules and will provide a new level of understanding of the nature, origins and functional significance of plant and microbial chemical diversity. The results contribute to increased, sustainable crop productivity, health- promoting diets, preventative medicines, 'green' industrial processes and new antibiotics.

2. <u>Genes in the Environment</u> – Crop plant yield is strongly influenced by the growing environment. Most modern crop varieties have been bred for high-input high-yield agronomic systems such that yields in optimal growing conditions are high, but these optimal conditions are not predictable over the annual growing cycle. Plant growth and development is strongly influenced by multiple environmental factors over different timescales, from rapid responses to daily changes through to seasonal responses and to long-term adaptations to new environments.

The GEN ISP focused on the basic biological mechanisms and the roles of genes and genetic variation in environmental responses and adaptation to challenging environments. This knowledge provides an innovative foundation for improving the resilience of crop yield to sub-optimal growing conditions such as temperature, soil nutrients and drought.

3. <u>Plant Health</u> – Plant health is pivotal to the supply of agricultural produce required to support our society, economy and the environment. Meeting current food demands is a major international challenge. The projected population increases worldwide place unprecedented pressure on agriculture to sustainably produce more, ideally more nutritious food with fewer inputs on less land. The Plant Health ISP focuses on how plants and microbes interact, through understanding the basic principles of recognition, signalling and physiological and genetic adaptation. This knowledge is used to enhance plant health and thereby sustainable crop yield. Scientists from The Sainsbury Laboratory play an integral role in this ISP.

4. <u>Designing Future Wheat</u> (DFW) – Wheat is one of the most important global crops, being grown on more land than any other commercial crop, and currently providing 20% of the total calories consumed by humans worldwide. A 60% increase in the demand is expected by 2050 as the global population increases towards 10 billion. A sustainable and resilient increase in wheat yield must be achieved against a background of climate change.

Over the last five years, old wheat varieties and wild relatives have been exploited to create novel germplasm on which initial trait analysis has been performed. Scientists in the national Designing Future Wheat ISP are further exploiting this strategy to dissect a range of traits, including those involved in drought and temperature stress, root and shoot development, crop height, inflorescence and grain architecture, seed size and architecture, root response to nutrient availability, nitrogen and nutrient usage, pathogen and pest resistance and finally the quantity and quality of starch, dietary fibre and minerals in grain.

The germplasm created, together with the tools and information required for its use, is made available to the wider academic and breeding community in an easily accessible form, allowing ready access for UK and international plant researchers not directly working on wheat. The generation of these resources benefits the wheat breeding industry and producers and utilisers of wheat grain in addition to other national and international crop research programmes. This programme is a partnership with National Institute of Agricultural Botany, Rothamsted Research, Earlham Institute, European Bioinformatics Institute, Quadram Institute, University of Bristol and University of Nottingham.

Research Impact

There are many examples of excellent research at JIC which has led to impact, to name just a few:

- JIC scientists have developed high-yielding crop varieties, such as Maris Piper potatoes, Maris Otter Barley and Beneforte Broccoli.
- JIC's research led to the generation of the first hybrid antibiotic. This led to five spin-out companies exploiting microbial genomics for antibiotic discovery.
- Hypertrans, a JIC-developed platform for synthesising viral particles in plants, is being used in development of diagnostics and vaccines for COVID-19, zika, polio, and animal infections.
- Determining the molecular basis of vernalisation in plants, a process by which flowering time is regulated.



Governance and Organisation

The John Innes Centre is organised into five departments that work together collaboratively:

- Biochemistry and Metabolism
- Cell and Developmental Biology
- Computational and Systems Biology
- Crop Genetics
- Molecular Microbiology

There are in total about 370 staff members at JIC, approximately 100 PhD students and 45 Research Groups led by Group Leaders. In addition, Norwich Bioscience Institutes Partnership (NBIP), provides support services to JIC, TSL, Earlham Institute and Quadram Institute and the JIC Director manages a range of these support services.

The John Innes Centre's <u>Governing Council</u> is responsible for oversight of the management and administration of JIC's income and expenditure, assets and liabilities. The Governing Council has responsibility for developing the long-term vision for JIC, alongside the Director, and oversees the management and achievements of the institute.

The Members of JIC are BBSRC, John Innes Foundation and the University of East Anglia. The Members are all guarantors of JIC, a company limited by guarantee and a registered charity. The Governing Council comprises the Chair, three science and three non-science Trustee Directors and three Trustee Directors representing the Member organisations (BBSRC, UEA, JIF).

The <u>Science and Impact Advisory Board</u> (SIAB) is comprised of internationally renowned scientists and reviews and supports the development of the scientific vision and strategy of the JIC. SIAB is chaired by a Trustee Director and reports to the Governing Council on the JIC's science programmes in relation to JIC's mission.

JIC is involved in significant international collaborations, not just within the EU but also further afield. The JIC helps the UK to be the partner of choice for plant and microbial science research globally. This is achieved through strong links to the best institutes worldwide and close collaboration with partners such as those in the CGIAR system. JIC has strength in this area, with a range of well-established ongoing collaborations including:

- JIC's Centre of Excellence in Plant & Microbial Sciences with the Chinese Academy of Sciences (CEPAMS) is the most advanced life sciences research programme between the UK and China.
- JIC's capacity-building in developing countries focuses on Biosciences for East & Central Africa (BeCA) on the ILRI Hub in Nairobi.
- A strategic collaboration with the International Maize and Wheat Improvement Center (CIMMYT), for joint research, knowledge sharing, and communications to further the global effort to develop the future of wheat.



Director Role

The John Innes Centre is looking for a successor to its current Director, Professor Dale Sanders, FRS, on his retirement in 2023. The Director is responsible for leading the organisation's ambitious future strategy, building on the current strengths, and creating new opportunities for the JIC to continue to achieve the highest levels of scientific excellence and the vision as a hub for plant and microbial research. The Director must be able to develop, articulate and promote the vision and strategy to staff, stakeholders, collaborators and funders, including the UK government, and win recognition nationally and internationally.

Key areas of responsibility:

- Provide inspirational and visionary strategic leadership and management, enabling the JIC to be responsive to the changing research landscape and emerging opportunities.
- Ensure the development and implementation of strategic plans which build on the JIC's 'Healthy Plants, Healthy People, Healthy Planet' (HP³) vision, building a clear and distinct identity and role within the research ecosystem.
- Work to ensure JIC's long-term sustainability, ensuring a diverse range of funding sources and the efficient use of Institute resources to meet strategic objectives.
- Support the development and maintenance of external relations and stakeholder engagement essential to the JIC's vision, scientific priorities and opportunities to maximise funding and capital investment in world-leading resources, capabilities and enabling technologies.
- Inspire JIC's continued delivery of world-leading fundamental, strategic and applied science which supports future grant income and wider economical and societal impacts – tackling grand challenges both nationally and internationally.
- Ensure JIC continues to recruit, retain and develop the talent necessary to deliver its vision and strategy, and to play its part in the training of the next generation of researchers, technical specialists, entrepreneurs and innovators.
- Actively contribute to the provision of an outstanding research environment within JIC and more broadly, establishing JIC as a hub for plant and microbial research – one that exemplifies best research practice, promotes a positive research culture, provides an inclusive environment and which operates within an effective governance framework.
- Prioritise the JIC's national and international partnerships and strategic engagement with research communities, driving connections across disciplines where these add value.
- Ensure JIC continually scans the horizon for new opportunities for business development and commercialisation, and actively pursues those that align with its strategic objectives.
- Support and ensure appropriate structures for management, consultation, decision-making and communication within JIC.
- Support the continued effort to further modernise the research centre's facilities in the Norwich Research Park location.

Candidate Profile

The successful candidate will be a highly accomplished scientist and a senior leader, with experience of working with researchers, executives, boards and external stakeholders and funders. They may come from the academic, not for profit, or commercial sectors and they will be able to lead, develop and shape a team to support them in delivery of JIC's vision. They will be able to represent the JIC at the highest levels with a range of stakeholders from academia, Government, BBSRC, UKRI, and industry.

Ideally, they will be able to demonstrate:

- They are a respected scientist with strong research credentials in plant or microbial sciences, having ideally led a research group in this area.
- Leadership success in a science driven or significant organisation, which may be supported by experience of successfully conducting, investing in or supporting scientific research.
- A love of science and passion for working with creative, free thinking, highly intelligent and successful scientific researchers and support staff.
- Political awareness and sensitivity to navigate the complex stakeholder environment.
- Ability to quickly adapt to and embrace the culture of a discovery research institute.
- Strong stakeholder and change management experience and/or experience of major capital investment projects.
- A strong strategic mind, outstanding relationship building qualities and an ability to inspire and assemble high performing, self-managing individuals and professional teams.

As well as the proven ability and confidence to operate and deliver in a highly visible, senior and highpressure role, the successful candidate will have the following attributes:

- Strategic vision, gravitas and business / financial acumen and sound judgement.
- An inclusive leadership style, capable of providing inspirational leadership.
- · High emotional intelligence.
- Strong communication, ambassadorial skills and networks to promote JIC externally.
- Self-confident but approachable to internal and external stakeholders.



Terms of Appointment

JIC Governing Council is looking to make the appointment by Summer 2022 and the new Director will assume the position by the end of Q1 2023.

An attractive package will be available commensurate with the nature of the post.

Equality, Diversity and Inclusion

JIC is an equal opportunities employer, actively supporting inclusivity and diversity. As a Disability Confident organisation, we guarantee to offer an interview to all disabled applicants who meet the essential criteria for this vacancy. The JIC is proud to hold a prestigious Gold Athena SWAN award in recognition of our inclusive culture, commitment and good practices towards advancing of gender equality. It offers an exciting, stimulating, diverse research environment and actively promotes a family friendly workplace. The JIC is also a member of Stonewall's Diversity Champions programme.

Further information on these partnerships and commitments is available here.

How to Apply

Russell Reynolds Associates has been retained to support the JIC with this appointment.

To apply for the role, please send a CV and Supporting Statement outlining your experience against the position specification.

Please send this directly to <u>responses@russellreynolds.com</u> with the role title and reference number **2112-029L** in the subject of your email.

The deadline for applications is March 31, 2022.

