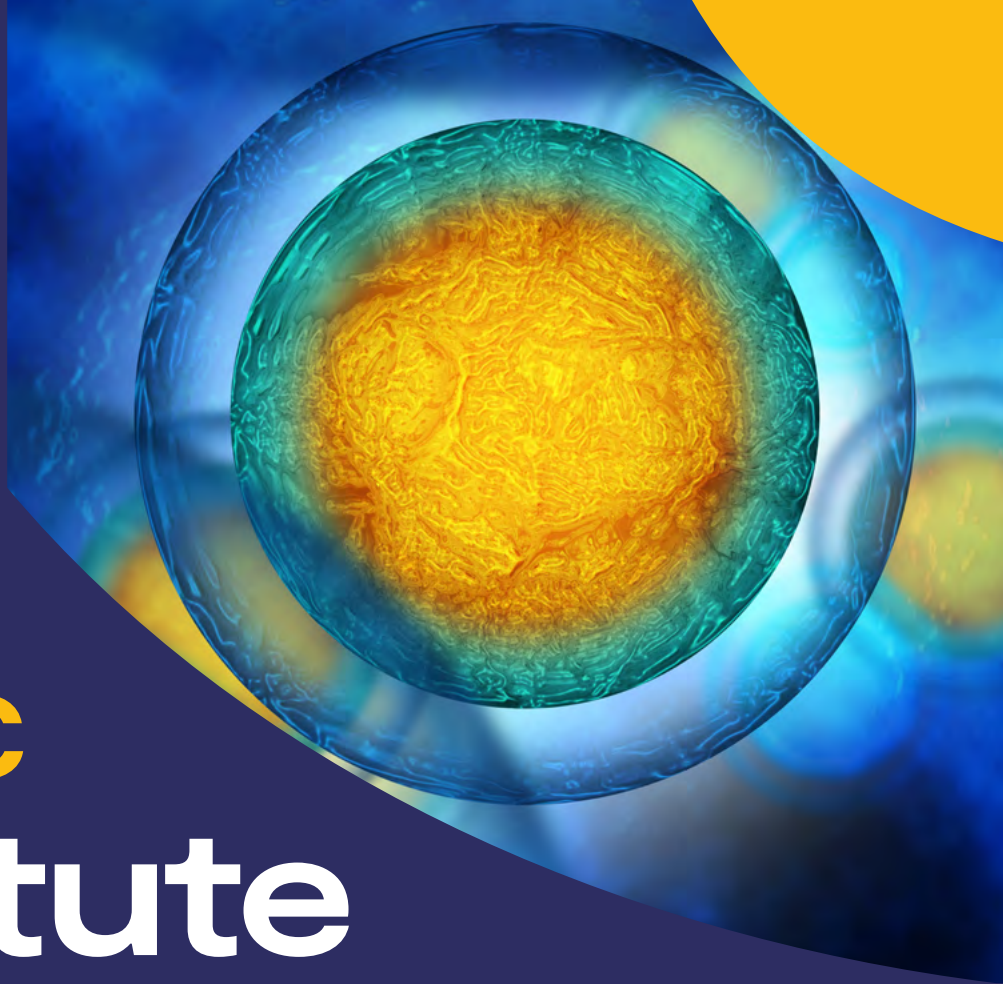


UK
RI

Biotechnology and
Biological Sciences
Research Council

BBSRC

Institute Strategy



Foreword

BBSRC strategically supported institutes are a fundamental component of the national and international bioscience research and innovation ecosystem.

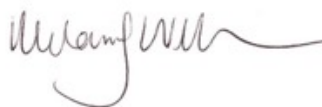
It has been almost a decade since the governance arrangements of our eight partner institutes began to evolve, becoming independent companies with charitable status or institutes embedded in universities. During this time, the research landscape has changed considerably. UKRI has been established to advance a thriving, inclusive and connected research and innovation system. In 2018, we published our Forward Look which articulated a direction of travel for UK bioscience over the next 10 years, seeking to ensure the discipline's continued health and identifying areas where bioscience can have a significant impact in addressing some of society's greatest challenges. Therefore, it is important that we also continue to evolve our partnership with strategically supported institutes.

As evidenced by the UK research community's phenomenal response to tackling COVID-19, interdisciplinary research and collaborative endeavours have never been more important. Likewise, it is imperative we continue to play our part ensuring all colleagues engaged in bioscience research and innovation activities are inclusively supported and developed.

In September 2020, I proposed to BBSRC Council the establishment of a Council Task and Finish Group to shape BBSRC's future strategic approach to supporting institutes. A Task and Finish Group was set up and met between October 2020 and February 2021, and considered and tested key principles, opportunities, and the outcomes that BBSRC want to achieve from our strategic investment in institutes. The research and innovation campuses, in which seven of the institutes are located, are outside the main scope of this strategy. The group drew on expertise and opinion from the institute directors and BBSRC senior leaders, through a series of targeted meetings and workshops. A questionnaire sought the views of key external stakeholders on the role of institutes, critical areas of research capability they should deliver and their connectivity with the broader bioscience research and innovation ecosystem. I am extremely grateful to everyone who gave their time and thoughtful input during a very challenging period.

I want to take this opportunity to thank the members of the Council Task and Finish Group whose time, insights and dedication to delivering this strategy I greatly appreciate – Laura Green, Malcolm Skingle, David Stephens and Guy Poppy, supported by colleagues Sarah Perkins and Emma Hudson.

This strategy presents a series of recommendations for implementation which have been endorsed by Council. We will now take forward these recommendations. I wish to thank institute colleagues for their continued support and commitment to develop our partnership and I look forward to realising our collective ambition.



Melanie Welham
Executive Chair, BBSRC

Executive summary

BBSRC strategically invests ~£75M per annum in eight specialist Institutes that provide national capability and expertise in strategically important areas of research (as defined by BBSRC strategy and remit). BBSRC has key responsibilities for the long-term investment of substantial public funds in these Institutes. Given recent changes in the research and policy landscape BBSRC considered that it was timely to review its strategy in relation to the Institutes it supports.

With the guidance and involvement of its Council, BBSRC has developed a high-level strategy that sets out our vision and approach to supporting and working in partnership with Institutes. Our vision is for a portfolio of vibrant, dynamic, and diverse bioscience National Capabilities with deep connections across the research and innovation ecosystem. To realise this vision, this strategy provides clarity on expectations for both the Institutes and BBSRC and makes a number of recommendations for future working.

Ten overarching principles frame the strategy. For the Institutes these address their unique national capability and strategic purpose; excellence in leadership and management; their role in training and developing a positive, inclusive and diverse research culture; and convening and catalysing, both nationally and internationally. For BBSRC, the principles reflect the need to develop a positive and sustainable funding model that minimises competition and facilitates collaboration, while at the same time provides the flexibility for Institutes to respond to changes in national strategy and emerging need.

Three themes underpin the principles for strategic investment, namely Capability, Connectivity and Culture. For each of these themes we set out strategic objectives, Institute strengths and articulate the key opportunities for future development and delivery for each theme.

The principles and themes set out in this strategy will act as a reference framework, guiding BBSRC's approach to future rounds of strategic investment in its specialist Institutes and the ways in which it works in partnership.





Context and drivers for change

UKRI's mission emphasises the vital contribution that UKRI-supported institutes should play when convening, catalysing and conducting outstanding research and innovation within an inclusive ecosystem¹. The 2020 Government Research and Development Roadmap underscores how UKRI wishes to provide a long-term, flexible pipeline of research and innovation infrastructure investment priorities for the next 10 to 20 years².

BBSRC strategically invests ~£75M per annum in eight specialist institutes that provide national capability and expertise in strategically important areas³. These are:

- The Babraham Institute
- The Earlham Institute
- The Institute of Biological, Environmental and Rural Sciences (IBERS) at Aberystwyth University
- The John Innes Centre
- The Pirbright Institute
- The Quadram Institute
- The Roslin Institute at the University of Edinburgh
- Rothamsted Research

Our 2019 BBSRC Delivery Plan states that⁴:

'these institutes play a vital role in delivery of our research and innovation priorities, generating new knowledge with impacts on food, agriculture, energy, materials and health that will drive growth in the bioeconomy and benefit society across the UK and beyond. The institutes are also central to our research and innovation campus strategy.'

We now also need to be cognisant of the role institutes will play in the national recovery post-Covid 19.

Two institutes, IBERS/University of Aberystwyth and Roslin Institute/University of Edinburgh are part of universities and hence governed through their university's governance structure. The remaining six are independent companies, limited by guarantee with charitable status, with BBSRC represented in their governance structure. Their governing bodies have explicit responsibility for the development and implementation of institute strategy, control of risks to the institute, together with the requirement to manage institute sustainability (Annex 1).

Each Institute employs between 104 and 377 staff, with the activities within Institutes supported by a mixed model of income streams (as illustrated in Annex 2). In 2019-20, BBSRC funding represented between 62 and 85% of the total income of the independent institutes⁵. Over the last three years, the average BBSRC success rates from all BBSRC supported institutes has exceeded the national average (by number of applications, excluding Institutional Strategic Programmes [%]: 2019-20, 35:26; 2018-19, 28:27; 2017-18, 30:25).

¹ [UKRI-091020-CorporatePlan2020-21.pdf](#)

² [UK Research and Development Roadmap](#)

³ Funding awarded through the BBSRC Institute Assessment Exercise

⁴ [BBSRC-250920-DeliveryPlan2019.pdf](#)

⁵ BBSRC strategic, responsive mode, capital, and other grants.

Biannual partnership meetings between BBSRC and Institute Directors, annual visits and monitoring, and bimonthly discussions between individual directors and BBSRC executive staff, embed the strategic partnership approach to the relationships. These meetings also allow for high-level discussion of issues relating to science, innovation, and impact.

BBSRC needs to be accountable for effective and responsible investments in these organisations. Therefore, we need clarity on the funding principles, the expectations of both BBSRC and institutes in making these investments, and a pathway for ensuring the effective delivery of BBSRC research and innovation priorities by institutes. Following the establishment of these foundations, and to support our culture of continuous improvement, it is also important to reflect on whether the current, robust peer-review and management processes to both facilitate investment decisions and support the implications of those decisions, remain fit for purpose.

This document sets out the vision, principles, and strategic goals of BBSRC investment in institutes and recommendations to Council to realise these opportunities.



Our vision for BBSRC supported institutes

A portfolio of vibrant, dynamic, and diverse bioscience National Capabilities with deep connections across the research and innovation ecosystem.



Key principles

Institutes that receive strategic investment from BBSRC should:

- 1** Deliver a unique area of national strategic research need within the BBSRC remit that requires critical mass and long-term investment
- 2** Be exemplars of scientific leadership and integrated research excellence, delivering (academic, societal, economic, policy) impact in their areas of focus
- 3** Play a key role in training the next generation of researchers, technical specialists, entrepreneurs, and innovators
- 4** Be enabled to successfully translate fundamental research discoveries through effective support, collaboration, and knowledge exchange with key stakeholders
- 5** Act as national coordinating 'hubs' for research in their area, having a clear and distinct identity and role within the ecosystem
- 6** Actively engage nationally and internationally with research communities, be involved in leading strategic partnerships, and connect across disciplines to add value and strengthen the outcomes of UKRI and BBSRC's investments in research and innovation
- 7** Be strong advocates for their sector and the UK through, for example, contributing to policy making and encouraging public dialogue
- 8** Be exemplars for best research practice by promoting a positive research culture, providing an inclusive environment which promotes equality and diversity, develops leaders, and operates within an effective governance framework

In providing strategic investment, BBSRC should:

- 9** Use a funding model which minimises competition between Institutes and facilitates collaboration across the portfolio
- 10** Be responsive to changes in UKRI and BBSRC strategy and emerging areas of strategic importance

In creating these partnerships to deliver BBSRC research and innovation priorities, Institutes and BBSRC should acknowledge that funding will be based on meeting the above principles.

Key definitions

It is intended that this Institute Strategy provides clarity to all stakeholders on the principles, strengths, opportunities and desired outcomes from BBSRC's strategic investment in institutes. It is, therefore, important to define the key criteria associated with the vision and principles articulated above.

BBSRC considers supported institutes to be **national capabilities** in their entirety. These national capabilities are world-leading beacons of excellence with a national strategic purpose, which meet the principles for BBSRC support.

A **strategic need** is an essential endeavour which aligns to BBSRC strategy, as articulated in BBSRC's *Forward Look*⁶, and *Delivery Plans* and cannot easily be delivered through other means. Institute activities may also meet the broader needs of UK government, for example, aligning with departmental Areas of Research Interest or the levelling up agenda.⁷

- It is recognised that a strategic need could be satisfied through a variety of routes and an institute may pursue more than one route. For example (and not exhaustive), the provision of nationally important or necessary strategic capabilities, world-leading bioscience that is difficult to support over the long-term (by response mode), or the provision of underpinning fundamental bioscience that is developed into platform technologies.
- It is also recognised that, whilst the primary focus is meeting a strategic need directly through research excellence, the application of research excellence to influencing policy, sector advocacy, or public engagement may address additional UK needs.

BBSRC considers **deep connections** to be two-way links between institutes and the broader national and global research and innovation ecosystem. The depth arises from a strong identity, diverse workforce and a research culture which fosters openness and forges strong links across a broad range of stakeholders.

Multiple funding sources may contribute to the delivery of institute research endeavours. **Added value** to individual investments concerns the capitalisation of the potential research and innovation synergies, and operational efficiencies, from aligning support to maximise outputs and outcomes, regardless of funding source.

Strategic Themes and Goals

Three themes underlie our principles for strategic investment: Capability, Connectivity and Culture. Within each of these themes below, we outline our strategic objectives for investment, alongside institutional key strengths and opportunities, and recommendations of the BBSRC Council Task and Finish Group.

⁶ BBSRC *Delivery Plan*, *Forward Look for UK Bioscience*

⁷ In such instances, both the institute and BBSRC should endeavour to maximise the potential opportunities of these alignments.

Capability

Key principles:
1, 2, 3, 9,10

STRATEGIC OBJECTIVES

- i. Institutes are recognised as national capabilities, reflecting their specialised and unique contributions to the UK bioscience ecosystem.
- ii. Institutes take a leading role in strengthening capability and specialist training of the UK bioscience workforce, from early career researchers, through to technical specialists and research leaders.
- iii. Institutes, having met the principles for BBSRC support, have stable, sustained, and sustainable income streams so that they can thrive as efficient and effective national capabilities.
- iv. BBSRC funding of institutes is sufficiently flexible to start and stop investment as strategy evolves and new opportunities emerge.

Current Strengths

Institutes play a critical role within the bioscience research and innovation ecosystem. They deliver world-leading research with socio-economic impact, provide specialist research services and trained staff, and support the development of the next generation of research leaders. Collectively, institutes represent world-leading expertise which spans BBSRC's portfolio and can interface with other UKRI Research Councils and funders. It is their key characteristics and the broader benefits of the institutional model which can enable BBSRC-supported institutes to differentiate themselves from other organisational entities with similar missions.

Institutes:

- Deliver excellent, interdisciplinary team science, with a focus on the longer term, delivered by working together on specific challenges of national strategic importance to BBSRC
- Comprise a critical mass of excellent researchers not bound by competing responsibilities found in university environments
- Provide world-class thought leadership, supported by focused funding, to drive fields of strategically important research forward
- Provide cutting-edge, specialist and world-leading resources, capabilities or enabling technologies which are challenging to support in university environments
- Provide complementary, specialist training which exploits these resources, capabilities, and technologies and consequently, a pool of highly trained people in their respective areas who may go on to other positions within the research ecosystem
- Host significant knowledge and experience to translate discoveries into socioeconomic impact

Key Opportunities

Opportunities exist to strengthen the research power afforded by BBSRC support of institutes.

- **Pioneering national capabilities:** The institute model should enable institutes to pursue pioneering long-term and multidisciplinary approaches, with clear and ambitious goals, which stretch beyond what can generally be supported by response

mode funding. The distinctive value of long-term investment enables stability, focus, and maintenance of world-leading national capabilities and long-term resources of national strategic importance.

- Building on the premise that institutes are, themselves, national capabilities, BBSRC and institute partners should optimise access to specialist infrastructure and resources, supporting the wider research and innovation ecosystem.
- In turn, the provision of resources, coupled with world-leading expertise and technology development, offer bespoke training opportunities for researchers, technical specialists, entrepreneurs and innovators to address key BBSRC research priorities of national and international significance (and contribute to developing a diverse and inclusive research culture - see Connectivity).
- **Agile:** The flexibility and research freedoms afforded through the institute model can enable a receptiveness to a changing research landscape and the capacity to undertake higher risk research. This ability to pivot capability is a critical component of the UK bioscience ecosystem, particularly in times of national need. This was shown to great effect and national benefit throughout the Covid-19 pandemic and it is envisaged that institutes could play a critical role in 'building back better'.
- **Efficient:** The broad provision of cutting-edge resources and enabling technologies across institutes opens opportunities for greater coordination, optimising access by the broader community and avoiding duplication.

Recommendations

To deliver the strategic objectives, it is recommended that:

- Institutes clearly define their own national capability and strategic purpose. The provision of a long-term mission which captures their focus, distinctiveness and value add would enable an institute to establish and articulate a clear ethos, promote stability, and demonstrate ambition to stakeholders. This vision should be coupled with a science strategy that aligns this purpose to strategic need(s) consistent with BBSRC's *Forward Look* and *Delivery Plan*.
- BBSRC captures the institutes' thought leadership potential in prevailing and future national priority setting. Increased institutional engagement should then be reflected in an institute's increased agility and proactiveness to respond to a changing research landscape.
- BBSRC review its institutional funding model to best facilitate the delivery of exceptional national capabilities aligned to strategic need. The funding model must deliver efficient research and innovation excellence, foster agility, optimise operational resources and minimise competition between institutes.
- The monitoring and evaluation of institute capabilities is sufficiently nuanced to consider the different attributes of institutes and tailored to the principles for support. The Task and Finish Group endorse regular self-evaluation by institutes and recommend that the BBSRC and institutes to draw upon learning from their own existing processes which embed benefits realisation methodologies, as well as the MRC, CRUK, Wellcome, and RAND Europe, 2020 examination of the methods and data used to evidence progress in their research institutes⁸.

⁸ www.rand.org/pubs/working_papers/WRA965-1.html



Connectivity

Key principles:
4, 5, 6, 7, 9, 10

STRATEGIC OBJECTIVES

- v. Institutes are recognised nationally and internationally as leaders in their field and organisations which stakeholders turn to first for collaboration.
- vi. Institutes actively promote, seek and evidence new opportunities for collaboration, coordination, networking, policy advocacy and tool development. They actively support, advance and evidence engagement across disciplines, and with the wider innovation community.
- vii. Institutes and other national, complementary infrastructure (e.g. UKRI-supported institutes) build partnerships and increase critical mass in areas of national strategic importance.
- viii. Institute profiles are amplified and their prominence in debates on the future of the UK's bioresearch endeavour and international landscape is increased.

Current Strengths

Institutes forge connections through collaboration, coordination, and communication across a range of stakeholders at a local, national, and international level. They are critical components of a connected research and innovation ecosystem in the broadest sense.

Institutes bring expertise to bear on key research and innovation challenges which can only be addressed in collaboration.

Institutes can be significant assets to their local economy attracting businesses and skilled workers to the area. BBSRC research and innovation campuses, with institutes at their core, facilitate productive commercial interactions and accelerate the direct achievement of impact from institutional science.

Institutes are important participants in the communication of bioscience research to public audiences and policy decision-makers.

Key Opportunities

Institutes have a vital role to play as integrators of bioscience in the research and innovation ecosystem. As convenors and catalysers, they can drive forward research excellence in areas of strategic need through provision of national capability and thought leadership.

- **Interdisciplinary:** As scientific research becomes increasingly interdisciplinary, growing opportunities exist for institutes to draw upon the scale and diversity of university expertise to collaboratively tackle grand challenges both nationally and internationally.
- Recognising that the pursuit of world-class interdisciplinary research and technology developments can be at the interface with other UKRI Research Councils and funders, there is the opportunity for the partnerships to capitalise on these correlations to create synergy and added value. Similarly, institutes could draw on this intellectual capital to shape future science strategy.



- **Synergistic:** By building upon multidisciplinary and interdisciplinary collaborations, there could be greater alignment of ambition between institutional and university endeavours, minimising competition, fostering staff mobility, building interdisciplinary connections, and enhancing the intellectual sustainability of the specialist institutes. This includes optimising access to infrastructure and resources for support of the wider ecosystem.
- The opportunity for greater synergy should also be applied to cross-institutional networks to ensure complementarity and appropriate coverage of areas of strategic importance to BBSRC and relevance to other UK priorities.
- **Knowledge exchangers:** The potential for wider-ranging networks with translational research stakeholders exist, enabling deeper, more strategic connections or broader connections beyond those directly relevant bioscience stakeholders.

■ **Thought leaders:** By taking advantage of, and extending connections, institute researchers can drive innovative and collaborative thought leadership, offering expert knowledge and insight to a broad range of stakeholders both nationally and internationally.

■ **Visible:** As successful convenors and catalysers, there are greater opportunities to extend the reach, 'voice' and visibility of individual and the network of BBSRC-supported institutes across the breadth of stakeholders.

Recommendations

The Task and Finish Group recommend the following actions to maximise the convening capacity and connectivity of institutes.

- Institutes undertake horizon-scanning of their role as critical components of an ecosystem and the complementarity of their scientific provision to that provided by other institutes and universities. Institutes should consider a global perspective when undertaking this horizon-scanning and should be encouraged to identify international strategic research opportunities.
- Institutes actively manage strategies for knowledge exchange and commercialisation, national and international stakeholder engagement, and provision of policy advice to maximise impact.
- BBSRC review mechanisms to incentivise the pursuit and realisation of university, cross-institutional and commercial strategic partnerships, strengthen international collaborations, encourage accessibility, and minimise competition.
- UKRI Research Council-led activities should be explored to facilitate interactions between BBSRC-supported institutes and other UKRI institutes with complementary capabilities.
- Methods of evaluating socioeconomic impact recognise and capture the level and effectiveness of institute connections and collaborations.

Culture

Key principles:
8, 9, 10

STRATEGIC OBJECTIVES

- ix. Institutes become beacons of best practice for improving research culture, whose frameworks are actively monitored and evaluated by their governing bodies.
- x. Institutes deliver inclusive and supported workforces which:
 - value diversity
 - advocate team science
 - support the development of institutional leaders
- xi. Institutes' governance arrangements mirror best practice which include diverse and inclusive board memberships.
- xii. Institutes are resourceful and effective organisations, who capitalise on efficient partnership working where appropriate.

Current Strengths

Institute environments foster a focus on research and innovation without competing teaching pressures.

Externally recognised examples of best practice exist across BBSRC-supported institutes of improving institutional research culture, promoting good research integrity and data sharing. The scale of institutes fosters an agility and an ability to trial new activities.

The portfolio of BBSRC-supported institutes represents both standalone organisations and institutes embedded within universities sufficiently networked to share best practice.

Key Opportunities

- **Responsive:** The independence, scale and focus of institute environments enable institutes to be responsive to external guidance and recommendations when developing a supportive, inclusive, and honest research culture. This includes opportunities for institutes to further engage with UKRI policies and pilot activities in this area.
 - There are opportunities to develop a dynamic, diverse workforce and respond to national needs through piloting activities to enhance the careers of all colleagues engaged in research and innovation.
- **Effective:** The network of institutes offers opportunities to share and co-develop best practice for improving research culture and open science.
- **Resourceful:** The network of institutes also offers opportunities to optimise research support and maximise operational efficiencies.



Recommendations

To deliver these strategic objectives, it is recommended that:

- BBSRC ensure appropriate institutional engagement in UKRI opportunities to drive best practice regarding promoting a positive research culture.
 - Institutes maintain the highest standards of research integrity and promote the open and transparent use of datasets and FAIR principles.
- Institutes develop people and culture strategies to support culture change with milestone objectives regularly reviewed by governing bodies, and input from BBSRC.
 - Institutes develop and own workforce and succession plans. This includes supporting investigators with the provision of leadership, performance monitoring and other training (e.g. knowledge exchange and commercialisation) as appropriate and in line with the Concordat for Researchers, the Technicians Commitment, and the Concordat for Research Integrity. Fostering cross-institutional professional training opportunities should also be encouraged.
- BBSRC and institutes to co-design appropriate methods of evaluating research culture as part of institutional assessment exercises.
- Governing bodies of institutes, supported by BBSRC, review institutional governance structures to ensure they emulate UK best practice.
- Governing bodies ensure that Institutes have the operational and leadership capabilities to enable these recommendations to be met.



Annex 1: Governance Boards

The Babraham Institute

Director (interim): Dr Simon Cook

Governance – Board of Trustees:

Professor Peter Rigby (Chairman)

Mr Geoff Braham

Professor James Briscoe

Professor Gordon Brown

Dr Lynne Gailey

Professor Nic Jones

Professor Peter Parker

Ms Alexandra Pygall

The Earlham Institute

Director: Professor Neil Hall

Governance – Board of Trustees:

Professor Dame Janet Thornton (Chair)

Dr Alasdair Macnab

Professor Peter Holland

Professor Thomas Richards

Mrs Andrea Finegan

Professor Jean Beggs

Professor Ed Louis

Ms Amanda Tagg

Professor Philip Gilmartin

The Institute of Biological, Environmental and Rural Sciences (IBERS) at Aberystwyth University

Director: Professor Iain Donnison

Governance – embedded within

Aberystwyth University

The John Innes Centre

Director: Professor Dale Sanders

Governance – Governing Council:

Dr Deborah Keith (Interim Chair)

Professor Colin Murrell

Mr Robert Maskell

Ms Jennifer Midura Heywood

Mr John Innes

Professor Nick Talbot

Dr Jason Vincent

Professor Judith Armitage

The Pirbright Institute

Director: Professor Bryan Charleston

Governance – Board of Trustees:

Professor John Stephenson (Chair)

Mr Ian Bateman

Mr Ian Black

Ms Rona Chester

Mr Jon Coles

Professor Vince Emery

Ms Emma Griffin

Ms Alison Hardy

Dr Paul Logan

Mr Roger Louth

Ms Jane Tirard

The Quadram Institute

Director: Professor Ian Charles

Governance – Board of Trustees:

Dr Celia Caulcott (Chair)

Dr Eddie Blair

Professor Fiona Lettice

Professor Peter Morgan

Mr Geoff Potter

Dr Elizabeth Robertson

Mrs Julie Waterfield

The Roslin Institute at the University of Edinburgh

Director (interim): Professor Bruce Whitelaw

Governance – embedded within the University of Edinburgh

Rothamsted Research

Director: Professor Angela Karp

Governance – Board of non-executive Trustee Directors:

Professor Sir John Beddington (Chair)

Ms Sally Smith

Professor Sir David Baulcombe

Mr Russell Brooks

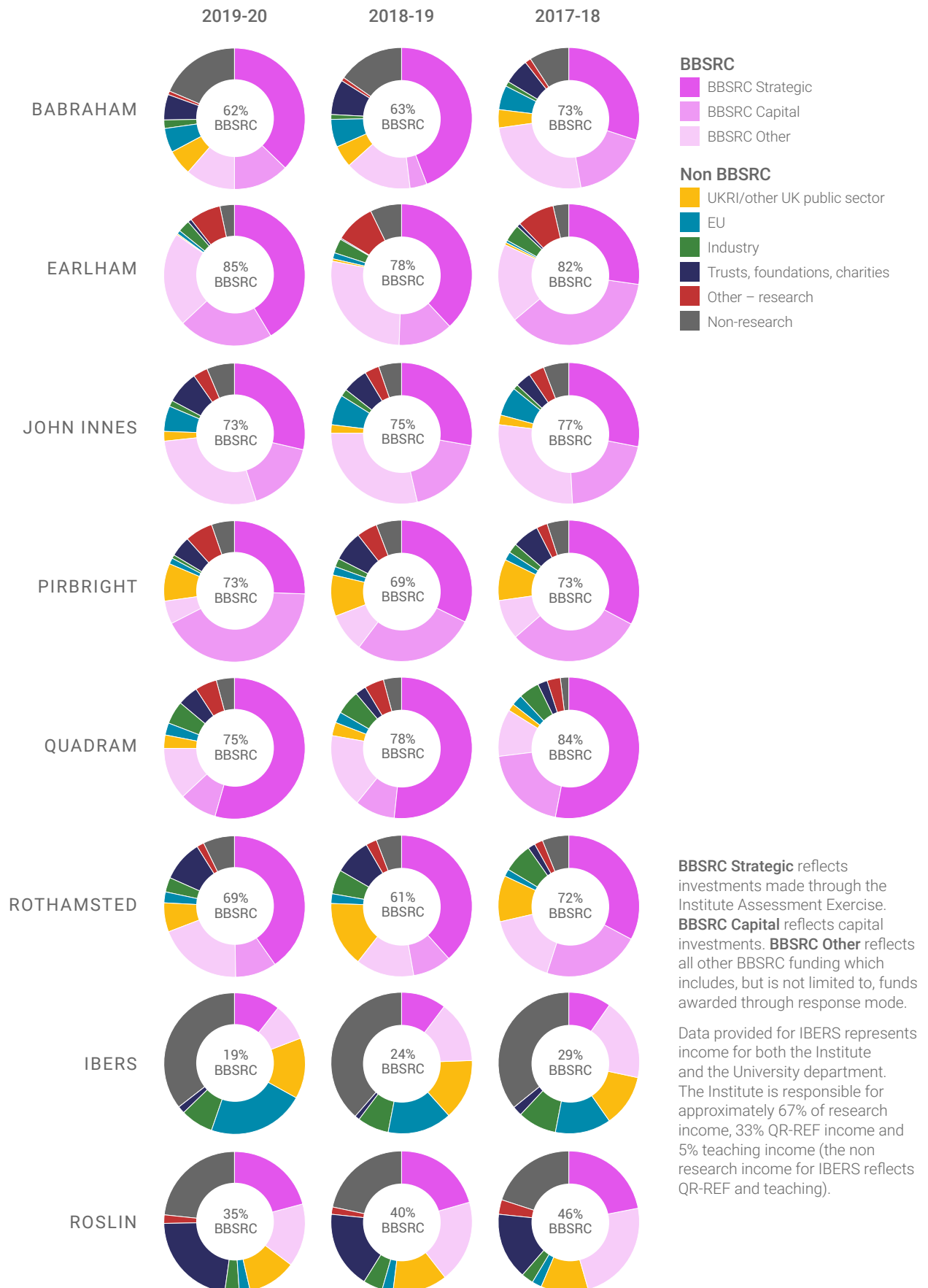
Dr Oliver Doubleday

Professor Charles Godfray

Dr Stuart Jarvis

Professor Michael Winter

Annex 2: Annual income attributed to BBSRC



Annex 3: Membership of BBSRC Council Task and Finish Group for developing a high-level institute strategy

Laura Green

University of Birmingham, Council Member

Malcolm Skingle

GSK, Council Member

David Stephens

University of Bristol, Council Member

Guy Poppy

University of Southampton and Programme Director, SPF Food Systems
(seconded to BBSRC)

Melanie Welham

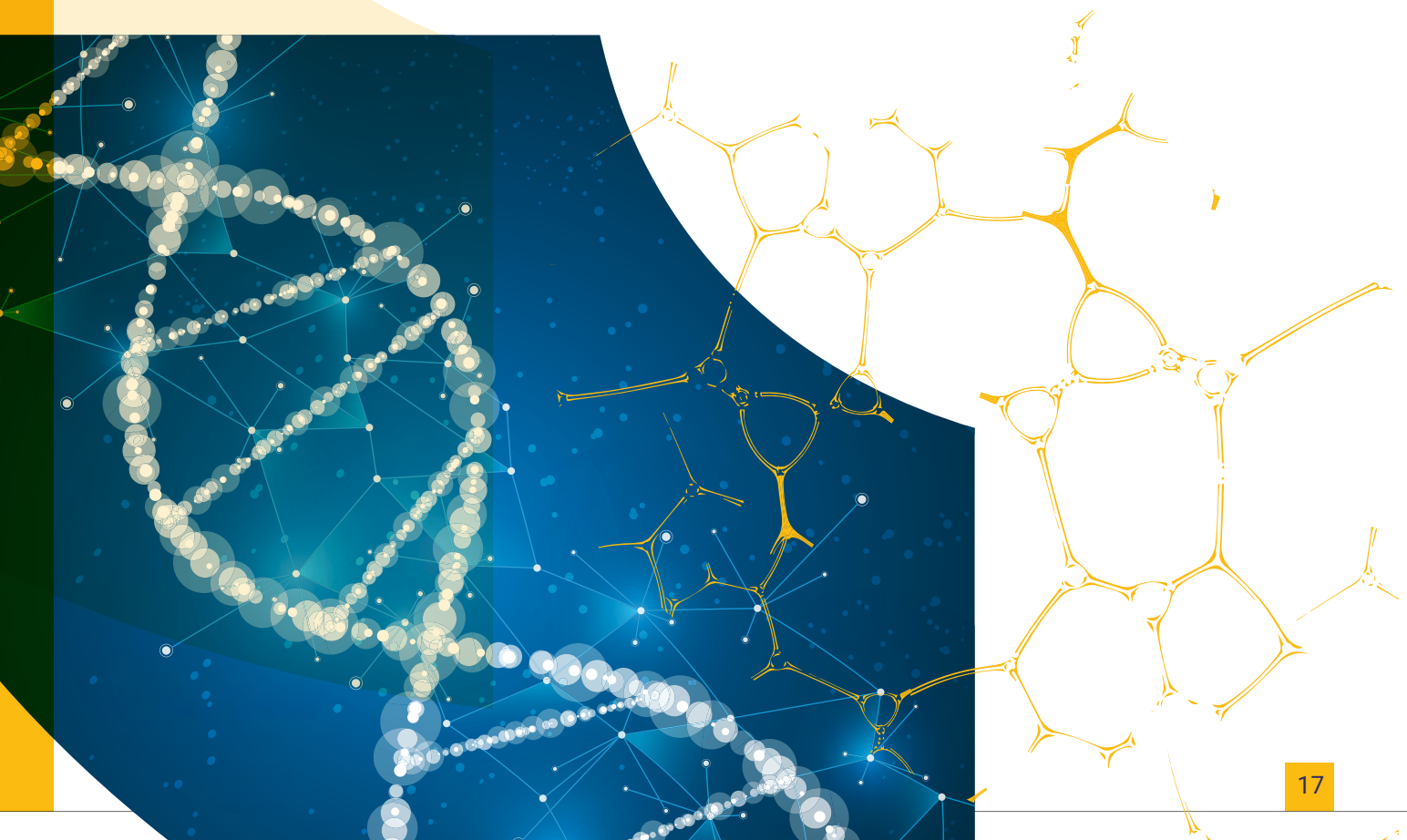
BBSRC Executive Chair

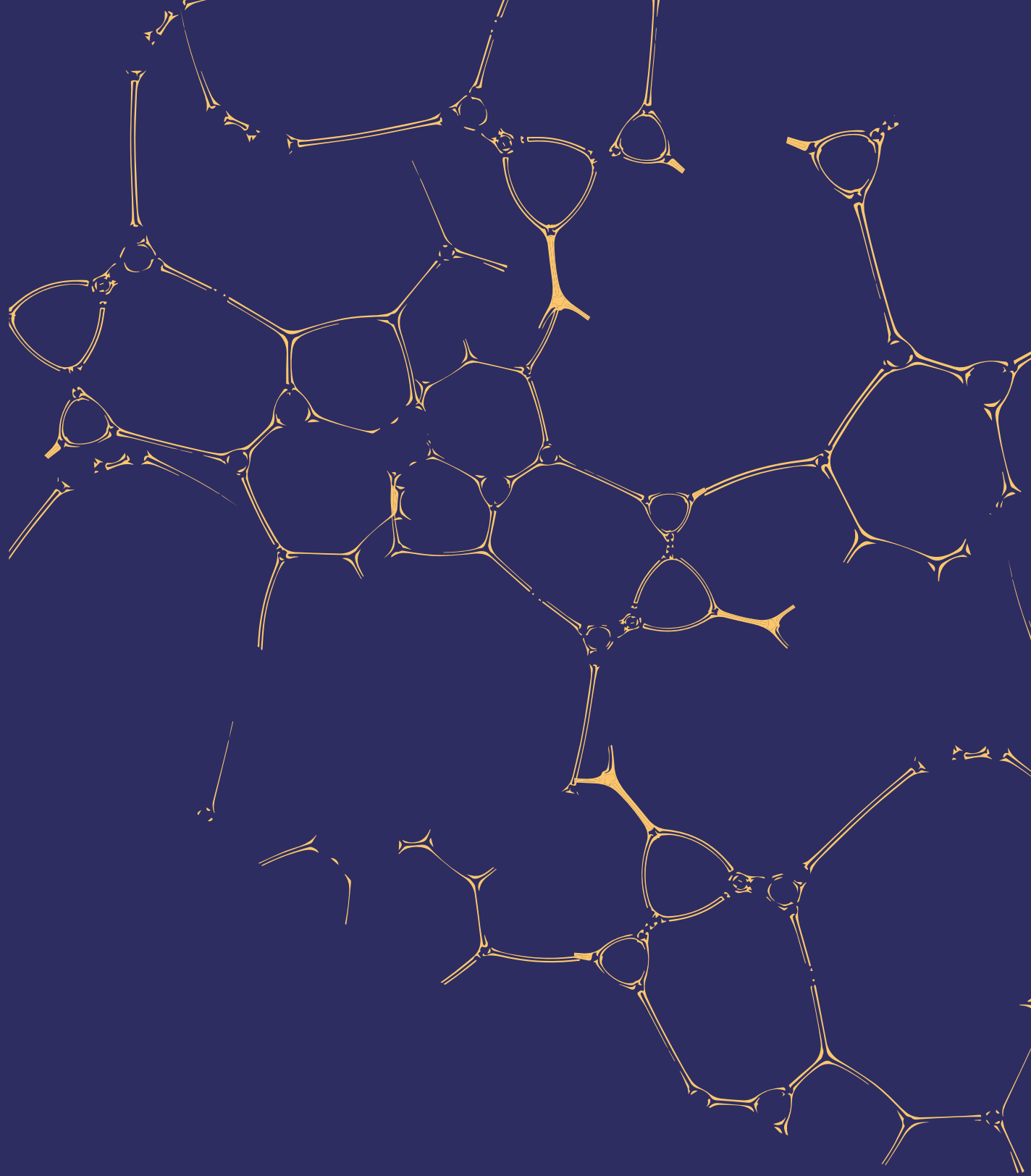
Sarah Perkins

BBSRC Executive Director Strategic Planning, Evidence and Engagement

Emma Hudson

BBSRC Senior Science Liaison Manager





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July 2021