

<b>Institution: University of Lincoln</b>
<b>Unit of Assessment: 17 Business and Management Studies</b>
<p><b>1. Unit context and structure, research and impact strategy</b></p> <p><b>1.1 Unit context and structure</b></p> <p>Our submission to the Unit of Assessment (UoA) 17 comprises staff from the Lincoln International Business School (LIBS). Building on our REF2014 strategy we have established excellence in five key research themes: <i>responsible management; rural and regional economic development; place-making and heritage; markets, industries, and innovation; and sustainable communities</i> demonstrated by our stakeholder engagements, publications and externally funded projects. Through these themes we specifically channel our impact beyond academia as evidenced by our three impact case studies, included in this submission. In pursuit of our long-standing strategic aims to nurture and support interdisciplinarity, openness, and integrity of research, during the post-REF2014 period, we have developed fundamental values and identity around the Principles for Responsible Management Education (PRME). To encapsulate this strategy, we have been able to appoint the UNESCO Chair of Responsible Foresight for Sustainable Development at LIBS. Furthermore, since 2014 we have strengthened research leadership through the appointment of senior academics and department-based research leads to co-ordinate research across the LIBS departments, groups and key thematic research areas. In addition, we have recruited new research active staff at all levels, and supported the development of our existing staff through, for example, promotions and internal seed-corn funding. We have further upgraded our research infrastructure and facilities through continuous investment and increased doctoral student completions. As a result of all of the above measures, our external research income has grown from £1m to over £2.8m in the post-REF2014 period, while the number of individuals submitted to REF2021 has increased to 31.3 FTEs from just 9.5 in REF2014. Our future strategy is aimed at continued progression from this base by further enhancing the quantity and quality of our research outputs, our impact on society and economy, our success in competitive research funding, and growth in doctoral student completions.</p> <p><b>1.2 Achievement of research strategy</b></p> <p>In 2014, the University restated its overall mission, emphasising the vital importance of research with impact, underpinning all its activities. In response to this LIBS has emphasised in its own strategy the need to achieve wider impact beyond academia, and to renew its commitment to developing staff as researchers. Following the re-organisation of LIBS in 2016 as a fully-fledged College of the University, and building on the strategy outlined in REF2014, our enhanced research strategy identified <i>four specific aims</i>:</p> <p>(i) <b>Increasing the number and diversity of research-active staff</b> - both to develop existing areas of expertise and to grow new research clusters, as indicated below. The significant increase in the FTE of academic staff submitted in REF2021, is evidence of this aim being achieved. A deliberate strategy was to appoint staff whose work can contribute to the UoA's areas of existing or developing expertise. Thus, our research base is broader in this submission. Furthermore, in addition to the staff currently submitted, a similar number of staff have research aspirations to qualify for future REF-type exercises.</p> <p>Our staff now come from over 40 countries and speak over 40 languages. We have used our diverse staff and student body, and the advantages that this confers through international contacts and language skills, to develop a broad global vision, supported by a network of University of Lincoln regional contacts located around the world. This has resulted in increased publications on issues of international significance, for example, 65 of our submitted outputs contain international subject matter compared to 22 in REF2014. New international funding and higher levels of international collaboration are evidenced by some 103 collaborations with colleagues from outside the UK in our submitted outputs, compared to 35 in REF2014 (see also Section 4).</p> <p>(ii) <b>Raising the quantity and quality of published outputs</b> - a significantly higher proportion of work in this submission appears in top international journals compared to REF2014. To illustrate</p>

our success in achieving this strategic aim let us take the REF2014 GPA as one indicator of quality. From internal-university and external reviews, the estimated quality of current submission is an average of 3.34\*, compared to 2.65\* realised in REF2014. We now submit well in excess of three times the number of outputs rated 4\* compared to REF2014. Furthermore, the scale of research activity is exemplified by the increasing number of research items (1,219 at the census date) in business and management within the University e-repository (see the institutional environment statement).

(iii) **Increasing levels of research funding** - our achievement in nurturing research and building our research base is reflected in substantially increased research funding, from £1m to £2.8m in the post-REF2014, including a marked rise from EU and E3 sources (see Section 3). Our success in achieving this significant increase in research funding is also reflected in our three impact case studies submitted. These, in turn, have led to further research funding applications thus, serving as focal points within our research themes (see Sections 3 and 4).

(iv) **Increasing the number of PhD completions** – consistent with the positive developments in other performance indicators, we have increased the number of doctoral completions - some 27 completions by the census date in 2020 compared to 20 in the REF2014 period (see Section 2). We have achieved our strategic aims set out in 2014 by adopting a set of purposeful measures designed to: enhance our leadership capacity; retain key researchers; increase our international orientation; and strengthen our overall research base. The vehicles for achieving this have been six research groups within LIBS. These six thematic/disciplinary research groups have provided the infrastructures for our key research themes (outlined in 1.1). The groups are: (i) Responsible Management; (ii) Community Organisation; (iii) Visitor Economy; (iv) Marketing and Supply Chain; (v) Regional Innovation and Enterprise; and (vi) Lincoln Economics and Finance (LEAF). One previously small subject area – economics and finance - has been taken from an embryonic stage to become an area of strength with critical mass. We see this as an important area underpinning the quality and strength of our research base. Two relatively small research groups – Community Organisation and Visitor Economy have also been enhanced. The more established Responsible Management and Regional Innovation and Enterprise research groups are now more interdisciplinary than their equivalents in 2014 and involve more individuals (20 and 22 respectively compared with 13 and 15 in REF2014). The marketing and supply chain area, earmarked for expansion in REF2014, has also made significant progress and now comprises a substantive group of 10 colleagues with a strengthened focus on sustainable logistics, operations, and Industry 4.0.

Complementing our research infrastructure, we significantly strengthened our research leadership, through senior academic appointments and promotions at Professor (six) and Associate Professor (twelve) levels. This, in turn, enabled us to recruit ambitious researchers at Lecturer and Senior Lecturer levels, as well as increasing our doctoral completion numbers. Furthermore, our achievements have been underpinned by continuity in key personnel. The College Director of Research, M. Hingley, was in the management of the UoA submission in 2014; the Lead of Post Graduate Research (PGR), E. Ruto, was a deputy to the role in REF2014.

### 1.3 Achievement of impact strategy

In developing our research strategy, we were strongly influenced by the University's mission statement that emphasised the vital importance of research with impact. This has underpinned all our impact activities in the post-REF2014 period. In its 'Impact Template' developed in the early post-REF2014 period, Business and Management in Lincoln set out a detailed strategy to develop the Unit's impact with the focus being on *two strategic dimensions*, as follows:

(i) **Publishing impactful research contributing to both theory and practice and thus achieving impact beyond academia.** Evidence of achieving success in this dimension is that two of our three impact case studies contain important theoretical contributions that have a direct and demonstrable impact on practice. Firstly, using systems theory (Z. Mendiweso-Bendek), the case study on sustainable communities identifies solutions to conflict, notably in the Colombian peace process. Secondly, using an inclusive approach to difficult heritage (H. Hughes), the case study on contested heritage develops a hugely impactful International Bomber Command digital archive and associated visitor economy near Lincoln. Further examples are: the Future of Work and Organizational Psychology initiative (M. Bal) achieving impact on the academic field through

the publication of a widely read (>9000) and signed manifesto; the contribution to the policy of the minimum (and living) wage by a theoretical and empirical analysis on the UK case (M. Rizov); and the developing of theory of smart manufacturing and digital supply chains in sustainable production (CJ. Jabbour).

(ii) **Achieving impact beyond academia through end-user-network collaborations and local-to-global strategy.** Our impact case study on developing digital policy in rural areas is a good example of demonstrating impact through long-standing networks in regional and local government and industry/professional practice. Furthermore, we are making an impact in being recognised as a network hub of contemporary thinking. An example is the highly successful bi-annual international Development Economics Conference (DEC), which is in its third edition and has attracted to Lincoln high profile experts from around the world, in addition to engaging with our own academic colleagues, students, and local community. In the pursuit of wider impact, we have also intensified our links with both local enterprises and other colleges within the University. For example, we have significantly increased our collaborative and interdisciplinary work on externally funded projects with the College of Science – notably, the £6.4m E3 Agri-robotics project. Since the autumn of 2016 we have been running regular knowledge transfer (KT) events under the LIBS Connect executive development framework. Since 2020 these activities have been extended with active online presence through the Resilient Lincolnshire series of workshops.

To implement our impact strategy, we have adopted *individual and institutional* level measures. When staff develop their annual Individual Research Plans (IRPs) (see section 2) they receive targeted mentoring to encourage a dialogue on the planning and development of impact as an integral part of their research. The IRP allows research-active colleagues to not only reflect on their ongoing and completed research, but also to plan effectively for future personal and collaborative outputs and impact. The process has been co-ordinated and supported by Department Impact Champions, who liaise with the University's Lincoln Institute for Impact Literacy (LILI) (see institutional environment statement). This ensures best practice is shared, local stakeholders can be easily contacted, and media outlets are alerted to impact events. Funding has been made available to support the development of impact, including from Public Engagement for All with Research at Lincoln (PEARL) (see institutional environment statement). Another important dimension of our research and impact strategy implementation was the strengthening of LIBS' research governance and leadership structures, which were reconfigured in 2018 to: reflect increased strategic importance attached to research; promote research-led teaching; and build capacity and enhance its leadership and management for achieving wider impact. A new LIBS Research Committee (LIBSRC) was also established with a remit extended beyond narrowly defined research including Knowledge Transfer (KT), ethics, and integrity. This comprises the School Director of Research, Department Research Leads, representatives of the University's central Research and Enterprise department, research leaders of each thematic group, the Impact Champions, ECR and PGR representatives, and the Director of Business Development in order to further strengthen the relationship between research and KT with the major goal to enhance wider impact. Further, LIBS is supported in achieving local and regional research impact through its active Business Advisory Board, where we have excellent representation from businesses small to large, and local (such as Lincolnshire Co-operative Society) to international (exemplified by Siemens), in addition to representation from regional authority (Lincolnshire County Council) and business groups (such as the Chamber of Commerce). Progress towards reaching our targets is monitored by this widely-understood and robust research management structure, informed by income data supplied by the University's Research and Enterprise department and information from the detailed annual IRPs completed by all academic staff with significant research responsibility (see Sections 2 and 3 below).

#### **1.4 Future research and impact strategy**

During the next REF cycle, LIBS will continue to further the University of Lincoln's overall research strategy of producing "purposeful research with impact", following its "local-to-global" principle of prioritising research that is of relevance to our locality and that has global significance, driving economic development and enhancing social and cultural life both within and beyond our immediate community. Thus, the strategy for the next census period will be to

build on recent achievements and current dynamism. To enable this, we will focus on the following strategic aims:

- **Focusing and aligning research interests with the University interdisciplinary themes** - through maintaining areas of existing research strength and building new areas. Specifically, we shall further strengthen research in economics of innovation, visitor economy, logistics and operations (notably related to Industry 4.0 and green supply chains), and entrepreneurship, as well as complementary research areas reflecting staff interests and business/society needs, leading to enhanced impact. In achieving this aim, we will rely on retention of key personnel as well as attracting new talent.

- **Maintaining an optimal balance between senior and junior researchers** - recent appointments have moved LIBS towards an improved mix of junior and senior researchers which will provide a supportive environment of research leadership and for career development of less experienced researchers, active collaborations leading to high quality research outputs and successful research funding bids, leading to enhanced impact beyond academia. As above, in achieving this aim we will rely on retention of key personnel as well as attracting new talent.

- **Internationalising research and impact activity** - our significant success in attracting an internationally diverse faculty provides a strong basis for extending the international orientation of LIBS' research and impact via international collaborations and cross-country comparative studies. The current achievements in internationalisation of research and impact justify making this an explicit strategic aim for the future.

- **Diversifying income streams and increasing research income by 50%** - building on growing levels of competitive funding, we will seek to raise further funds from UKRI, new government, and international institutional funders, as well as corporate and local sources, by making extensive use of our dedicated and experienced research team and focused training of researchers in grant-writing. Where appropriate we shall leverage our networks of regional contacts to seek international funding - particularly in relation to international business, logistics, economics and finance.

- **Increasing the numbers of PhD and research-based professional doctoral students by 50%** - given the importance of doctoral students to a vibrant research culture we will support a further increase in doctoral student numbers, notably through the signing of national and international partnerships with universities (e.g., our consortium of Vietnamese universities), leading government, professional, and industry bodies (e.g., Ministry of Defence (MoD), Chartered Institute of Procurement and Supply (CIPS), Chartered Institute of Logistics and Transport (CILT)), and improving the proportion of timely doctoral completions. Furthermore, we will retain our current strategy of making use of local resources and promoting interdisciplinary and collaborative project generation that can attract funding and support PhD student recruitment.

- **Enhancing the impact of our research will be pursued proactively** - considering that impact can occur through various routes and often via serendipitous circumstances, we have codified an **OPEN** strategy based on our recent experiences that reflect four stages of impact development as follows:

- **Openness** - staff will be encouraged to be receptive to approaches from non-academic individuals and organisations. Responding to e-mails, phone calls and other contacts from external parties can often be the start of an impact journey.
- **Participation** - we will engage the public (including professional, customer and other non-academic organisations) through a variety of routes. Actively involving them with our research and gaining an understanding of gaps in knowledge and practical problems in the real world can help direct impactful research.
- **Extent** - staff will be encouraged and supported to seek out tangible evidence for the extent of impact arising from their research and to build on existing impact to develop wider reach. Recording and measuring impact and extending its reach is key to ensuring research delivers its maximum possible benefit.
- **Nurturing** - impact will be supported and encouraged in LIBS at whatever level it is found. We will actively seek out the impact of staff research even for individuals who do not think their research is relevant to impact. Often, we find that their research in fact has considerable hidden accumulated impact.

**1.5 Supporting research integrity and promoting ethics**

The UoA's approach to research integrity is governed by the Concordat to Support Research Integrity and the University's Code of Practice for Research (see institutional environment statement). The University instituted a new ethical approval procedure in 2018, overseen by the University's Research Ethics Committee (REC). All research projects undertaken by staff or PGR students must receive acknowledgement of a Project Registration Form or a favorable opinion from the University REC. Staff and students are advised and supported by an Ethics Champion in LIBS, who has been specifically trained in the approval of ethics proposals. Considering that ethics and research integrity is a standing item on LIBSRC, we elevate upholding the highest possible standard to one of our strategic aims. We will maintain and improve the process where PGR students and their supervisors review ethical aspects of students' research every year as part of an annual monitoring review. Furthermore, staff will continue to have access to training in issues connected to research misconduct which is governed by the University's application of the UKRI Procedure for the Investigation of Misconduct of Research.

**1.6 Progress towards open research**

LIBS is committed to the policy of open access and the University is a signatory to the San Francisco Declaration on Research Assessment (DORA). The University supports an open access platform to make research data freely available and this includes projects from the Business and Management UoA. Through the University repository all members of staff have access to a site for open publication (see institutional environment statement). A large majority of the UoA's journal publications are fully compliant with the demands of green open access via the University of Lincoln repository. This represents the success of the UoA's consistent encouragement of staff to go beyond the minimum requirements for open access outlined in REF2021. Academics are supported by a dedicated member of the University's central Research and Enterprise team and training and advice sessions provided at University level. The strategic aim is to make funds available at college level or centrally to support Gold access. PGR students also receive training from the Doctoral School in the requirements and opportunities of open access and University of Lincoln PhD theses have been freely available to download since 2019. For the post-REF2021 period our strategic aim in compliance with several funders policies is to make all research outputs from funded projects Green open access.

**2. People****2.1 Staffing strategy**

Our staffing strategy is informed by the need to respond flexibly and rapidly to a more dynamic and competitive environment and to manage carefully the balance between stabilisation and growth. Central to realising our potential in research, teaching, KT activity, and impact is prioritising the best use of our staff's expertise and resourcefulness. The expansion of LIBS has been facilitated by the rise in its profile and reputation in recent years which has attracted a higher calibre of applicant, providing opportunities for consolidating growth and raising overall achievement.

Our post-REF2014 recruitment drives have been designed to develop a balance between senior and junior researchers, reinforce our research groups, and lay the foundations for developing new areas. The LIBS Director of Research is a key member of all academic selection panels and contributes to all staff promotion decisions, ensuring that research and impact achievement is central to promotions. Since 2014 a strong emphasis has been put on further strengthening research leadership and mentoring capacity. We appointed Professor D. Charles in 2014 to lead research during the first stage of the REF period, followed by three new Professors (M. Rizov, M. Bal, and S. Armstrong) in 2015-2017. We also appointed in 2020 a new 'Global' Professor (CJ. Jabbour) in sustainable supply chains and operations, in line with our long-term strategy of strengthening key research areas. In addition, in 2020 we appointed AB. Jabbour as a new Professor in supply chain for sustainable development making sustainable and 'green' supply chain and operations a top research priority. Alongside the senior appointments, we continuously attracted and/or retained other research-active staff at all levels. For example, we appointed externally four Associate Professors and internally promoted another eight in 2014-

2020. Each of the three departments and research groups now have enhanced research leadership and have also enjoyed the injection of new blood through 44 Lecturer and 22 Senior Lecturer level appointments.

LIBS' staffing strategy is motivated by and reflects our full commitment to the provisions of the Concordat to Support the Career Development of Researchers (see institutional environment statement). This commitment is demonstrated by the fact that while 15 of the 30+ members of staff submitted to the UoA are employed at senior level (Associate Professor or above), 6 have achieved this role through internal promotion, evidencing the University's and the UoA's commitment to succession planning and to developing a new generation of leaders in business and management. There are no staff on fixed term/atypical contracts returnable in this UoA on the REF census date. Staff are supported in developing their career progression through an annual process of probation (in their first year) or appraisal (in subsequent years), that assists them in setting goals and identifying the resources they need. Regular workshops are held on the promotions process and staff are encouraged to take part in the University's Pipeline Mentoring Programme (see institutional environment statement). The EDI aspect and staff development are dealt with below.

## 2.2 Staff development

Our staff development strategy complements our staffing strategy and is closely aligned with our research and impact strategies. It is also informed by key objectives in line with the Concordat to Support the Career Development of Researchers and aims to:

- (i) Promote an inclusive approach to staff development which enhances individual and collective research capacities (staff development investment of more than £1.4m over the census period).
- (ii) Attract and retain research leaders and junior staff with high potential (appointed 5 regular and 1 Global Professors and retained 5 own PhD graduates over the census period).
- (iii) Promote equality and diversity (UoA staff promotions comprise 57% women and 71% BAME over the census period).

The positive results of our approach to staff development and retention are apparent in a number of ways. For existing staff without doctorates, active support to help them complete a doctorate means that over the census period, 10 members of the LIBS' academic staff obtained doctorates, compared to 5 staff members on the equivalent date in 2013. In addition, during the census period we appointed 4 LIBS PhD graduates and part-time lecturers to full-time academic positions. In terms of research output, 5 developing researchers have produced successful funding applications or refereed articles and monographs, signalling their emergence as significant researchers (2 ECRs in our REF2021 submission). The outputs of our junior researchers, retention of key staff, and promotion of several academics (to Senior Lecturer or Associate Professor) during the census period, alongside our ability to attract accomplished researchers indicate this strategy's success.

LIBS have a structured and inclusive approach to supporting the development of all academics. As noted above, staff complete an annual Individual Research Plan (IRP), where they report on outputs, research income, PhD student supervision, and other research activities and outline how they intend to build on them. Allowances from teaching and other duties are provided on this basis; these can amount to a one-fifth FTE workload, and are in addition to the normal research allocation of one-fifth FTE. To support career development of new performing or aspiring researchers with potential, they are often given more generous allowances than established researchers performing at the same level. The majority of research academics' class contact is limited to approximately half a calendar year and heads of department are encouraged to configure teaching commitments appropriately to create concentrated time for research. Postgraduate and doctoral supervision is accounted for in workload planning. Staff can apply for sabbatical periods and research leave (shorter periods of paid leave). Since 2014, 6 academics have had sabbaticals of six months each with a significant number of others having shorter periods of research leave. All these have resulted in increase in publications and successful funding applications.

Staff development needs are formally explored with academics annually as part of the IRP and appraisal process. Individuals are offered development packages to meet needs identified in their appraisals and IRPs. Active support is provided to researchers through several mechanisms, with an emphasis on high levels of assistance rather than monitoring

arrangements. In each LIBS department, senior academics act as mentors to more junior researchers through a formal allocation, providing guidance on the whole research process, as well as through informal collegiate support. In addition, staff are encouraged to access external support for their research development by distinguished external academics. To stimulate research from the bottom up and foster an inclusive climate, in addition to weekly, bi-weekly, or monthly group Research Seminars, we run an annual college Research Showcase and a biennial Development Economics Conference (DEC) at which members of staff and doctoral students can present their research and network with internationally leading researchers. Since 2017, LIBS has run its annual Research Showcase, where research students and staff have the opportunity to present in themed track and poster formats, in order to update and learn from colleagues and external guest speakers. In 2020 our annual Research Showcase was, as many activities were, overtaken by the circumstance of the Covid-19 pandemic. However, out of this setback, we re-thought our key conferences and re-imagined them as virtual ones. This worked well, with our Showcase now online and interactive as well as being made available to a wide global audience on YouTube, linked from our LIBS research web pages.

To improve writing skills and enhance the quality of published outputs, writing workshops are led by the School Director of Research and the professoriate. This has enabled strong links between relatively experienced and inexperienced researchers; a number of the papers submitted started life in these sessions. Staff also benefit from the University's central research development programme, facilitated by the Doctoral School and the Lincoln Institute of Advanced Studies (LIAS) which provide regular training events on a range of subjects, including writing for publication, doctoral supervision, preparing funding applications, managing research and knowledge transfer projects, and ensuring that research has impact beyond academia. All colleagues, including those new to doctoral supervision undergo compulsory supervisor training and supervision refreshment, organised jointly by the Doctoral School and LIBS. We bring junior researchers into doctoral supervision under guidance from experienced directors of studies.

### **2.3 Support for post-graduate research**

Postgraduate research (PGR) student completions have grown in line with our strategic aim of strengthening our PGR provision both in quality and quantity. The demand for places is also growing, including from University of Lincoln graduates. However, acceptance is based on stringent criteria with emphasis on the quality of applicants and strategic fit with research groups and themes. LIBS have strived to provide support for studentships, with three rounds of such funding provided during the census period. At the census date in 2020, LIBS support a community of 41 PGR students. Each is supervised by a team of two or three academic staff, with the lead supervisor nominated as director of studies. Many of the LIBS' PGR students are encouraged to undertake limited paid tutorial activities as part of their career development, while monitored by their supervisory team.

Over the census period LIBS have enhanced the experience of PGR students, aligning itself with sector benchmarks and the broader Vitae Initiative (see institutional environment statement). The doctoral community is managed by the Head of PGR, who reports to the LIBS Director of Research, and who, together with the Head of Doctoral Training, is responsible for the student experience, progression, quality and training of students and supervisors. PGR students are supported also by the framework provided through the Doctoral School and a full-time administrator based in LIBS. Doctoral student workspace is co-located with the academic departments at the heart of LIBS. The voice of the LIBS' PGR student body is strong, due to co-location and having its own committee, which communicates formally to the LIBSRC via student representatives. The healthy number of completions over the period (Table 1: 27 total completions) achieved under the strategy of stringent requirements for candidate quality at recruitment reflects the increased rigour of our PGR programme and the whole PGR process at LIBS, from application to completion.

Table 1 *PhD completions*

	2013/ 2014	2014/ 2015	2015/ 2016	2016/ 2017	2017/ 2018	2018/ 2019	2019/ 2020
Professional doctorates (0)	0	0	0	0	0	0	0
PhD including non-UK and by publication on QLS (27)	3	4	0	4	7	1	8
of which returned in REF4a (23)	3	4	0	3	5	1	7

Providing high quality training is at the heart of our PGR provision; we have appointed a dedicated Head of Doctoral Training to oversee and facilitate the PGR training in LIBS. Furthermore, LIBS, in coordination with University's Doctoral School, offers regular training sessions for all stages of doctoral study – from induction through training in methodology, to preparing for viva. Every research student is a member of the University's Doctoral School, which provides a programme of research training and career development, and a support network. The training is based on an analysis of researchers training needs (submitted through the annual reporting cycle). Research students have also been financially supported by LIBS to participate in the workshops and annual conference of the Northern Advanced Research Training (NARTI) grouping - a network of research-intensive university business schools. They also participate in research workshops run by special interest groups, such as those within the British Academy of Management. Research students make use of careers guidance, training, network contacts and services offered by LIBS' dedicated Employability Manager and the University's employability programmes. Examples include the Doctoral School's workshop series 'Careers and Employability', and its employability website, which connects students to employers.

#### **2.4 Equality, diversity and inclusion**

Consistent with our strategic aim for fostering diversity and inclusion within our growing academic staff, LIBS has made robust arrangements for ensuring equality of opportunity. We offer permanent contracts to staff unless there are compelling reasons not to do so. Promotions are strategically balanced – in terms of gender with 57% women, and in terms of ethnicity with 71% BAME. Staff are very international with the split between home and international at 60% to 40% making the Business and Management UoA the most internationally diverse group in the University. The majority of ECRs have permanent contracts, offering security and career development to staff and vibrancy and sustainability to LIBS. Along with the provision of opportunities to less experienced researchers, maternity and paternity leave, flexible working to accommodate family, health or other circumstances, and a commitment to reintegrate staff on their return to work are all supported by clear policies. Our commitment to diversity is reflected in that the majority of submitted researchers are of non-UK origin (51%) and the gender composition is quite equally balanced. LIBS policies also comprise the Respect Charter and fully comply with the University's relevant policies and frameworks (see institutional environment statement). It is noteworthy, that nurturing equality, diversity and inclusion is a re-occurring feature of our strategies for the post-REF2021 period with major channels for achieving our strategic aim incorporated in our staffing and staff development plans.

### **3. Income, infrastructure and facilities**

#### **3.1 Research income**

Our strategic aim of increasing research income has led to substantial increases in external funding during the census period. A range of interdisciplinary projects has come to fruition as a combined outcome of our people, research and impact strategies. A total of more than £2.8m of income, representing a 180% increase during the census period, was generated by 117 research bids with success rate of 33%, most of which were part of collaborative research initiatives. For example, LIBS was awarded £450k from participating in a £1.2m Marie Curie



Innovative Training Network, in partnership with universities from Norway, Netherlands, Sweden, Denmark, Portugal and Spain, as well as attracting over £550k in awards for regional development projects from the EU Interreg North Sea Region fund (CORA, SALFAR, and COM3). The three Interreg projects focus on key challenges to rural economies, with CORA and COM3 exploring new approaches to enhancing rural broadband connectivity and digital skills, and SALFAR testing the potential of saline agriculture in areas at risk of coastal flooding.

Research in regional economic development has generated over £200,000 income, also from regional and national sources (the Greater Lincolnshire Local Enterprise Partnership (GLLEP), City of Lincoln Council, Boston Borough Council, East Lindsey District Council, and Community Lincs). A notable success in interdisciplinary research jointly with the College of Science is the £6.4m E3 Agri-robotics project in which LIBS will contribute with research on management and social issues associated with technology development and adoption. A vivid illustration of internationality of LIBS research is the EU H2020 WE-Hope project conducted by partners from 5 EU countries bringing to LIBS more than £100,000. A testimony of our successful strategy for knowledge creation and dissemination beyond academia are the awards for Enterprise and Marketing research which totalled over £200k. Consultancy for SMEs and associated research activities in enterprise education have leveraged over £100k in management development training. In 2020, in collaboration with industrial partners and the University's School of Engineering, LIBS secured more than £140k from Innovate UK for research on smart manufacturing and a digital supply chains feasibility study.

The success in income generation was facilitated by a set of strategic measures. An external income plan with targets has been a part of the overall LIBS strategic planning process and this has been driven by the following key objectives for the census period which will also be retained in the post-REF2021 period:

1. Focus investment opportunities around our departmental plans, research groups, and key thematic priorities.
2. Capitalise upon internal investment as seed corn funding for larger bids.
3. Extend LIBS Business Advisory Board to include additional industry, commercial and societal members.
4. Build networks of funding partnerships aligned to our key research themes.
5. Develop an international profile, relationships, and reputation to generate larger scale awards.

Each research group and several cross-disciplinary teams associated with our key thematic areas have developed innovative and aspirational partner networks and make joint bids for external funding. Income from grants and other sources is generated by competitive tendering, responses to specific calls, and applications to open calls; a collaborative approach is normally adopted. LIBS also actively work to support the local and regional economy with research expertise that in turn generates impact, including through its active Business Advisory Board. For example, teams from the Regional Innovation and Enterprise (e.g., L. Price, R. Herron, A. Ryzdyk) and LEAF (A. Mazhikeyev) research groups have supported Lincolnshire County Council with research and consultancy to help enhance economic development, improve transport infrastructure, and foster enterprise. The Marketing and Supply Chain Group (CJ. Jabbour, L. Price and M. Hingley) conduct research for Midlands Engine (ACURSC project) on sustainable supply chains. LEAF research group runs the highly successful bi-annual international Development Economics Conference (DEC), which is a self-funded venture attracting over 100 international participants. The Community Organisation group has made a number of successful international partnership bids and obtained funding from international (Colombia) and domestic sources (Department for Communities and Local Government) to develop a model of capitalising on peace processes after conflict via, for example, the 'Libraries for Peace' initiative.

LIBS key researchers are working closely with the Ministry of Defence (MoD) via the dedicated Defence Logistics Staff Course (DLSC). This contract of a sizable value is a good example of interdisciplinary learning, emphasising the challenges and knowledge exchange between defence and other industries (such as the predominantly agri-food economy of Lincolnshire - with events involving regional food manufacturers and outputs concerning leadership and supply chain learning). Strengthening this MoD connection, LIBS have also had a recent success in winning a large training contract, in collaboration with Capita Plc, from Royal Navy. Further, LIBS' inter-disciplinary research is highlighted by the work with our University's agri-robotics

research facility - Lincoln Agri-robotics (LAR) - through the joint appointment of researchers to investigate the social and economic impact of this cutting edge technology developed by the University.

In implementing and enacting its income strategy, LIBS provides financial support for international travel to enhance and support network development and partnerships. For example, LIBS, under its PRME UNESCO Chair, funds a series of seed-corn projects that are important channels for the generation of partnerships and networks leading to larger national and international funding bids. Examples are development projects in India (S. Saha), Nigeria (P. Igwe), and Bangladesh (Ma. Rahman). Regionally, a network on healthcare supported by LIBS led to funding for a study on wellbeing in the workplace. Similarly, an ongoing study on workplace health and safety is a result of a long-term partnership between the University and Siemens Turbomachinery which is currently being extended internationally.

### 3.2 Infrastructure and facilities

In addition to the income generation strategies and mechanisms put in place by LIBS, there is considerable institutional support providing wider infrastructure and facilities in this area.

Research and external income targets are set annually, and delivery is supported by the LIBS Director of Research and the University's Research and Enterprise department, with specialist staff being dedicated to LIBS. This has led to the generation of research income and the delivery of high quality research through a range of support mechanisms including: organising bid-writing workshops; facilitating access to external consultants who provide advice on external bids; identifying potential partners for collaborative research; the maintenance of a centralised online database of successful and unsuccessful bids; and enabling the dissemination of best practice.

The appointment of a dedicated LIBS Research Officer in 2016 also considerably enhanced research support by, for example, providing regular updates on research funding opportunities and managing the online submission of bids, as well as bringing together colleagues new to research with those that understand and manage the bidding process. LIBS also provide funding to support individual research projects (up to £5k per project) that can show a clear pathway to enhancing non-academic impact. The University's Research Investment Fund (RIF) has provided an internal support (£500k for the 2014-2017 period) for innovative research on a competitive basis (see institutional environment statement). This seed funding facility has led to a substantial increase in external funding applications, several of which resulted in successful project acquisition (e.g., the three EU Interreg projects CORA, SALFAR, COM3).

To increase the quality of applications and improve chances of success, all external research grant applications are assessed through a peer review process (including external review beyond LIBS), managed by the University's Research and Enterprise department. Research funding activities are actively supported by University-wide software research, archiving and group-working tools (see institutional environment statement). Each research group has access to an Online Media Assistant/Manager, located in LIBS, helping with maintaining their online presence, visibility and PR interactions. The University Repository enables open access to and early publication of outputs, and research is supported by online databases and search tools (e.g., BLUMBERG, DATASTREAM, EBSCO, FAME, SCOPUS). The physical access to the University Library is 24/7 alongside the continuous online access. This configuration of infrastructure and facilities at University and college level ensures that access and interactions are structured, co-ordinated, and effective, and that support can easily be accessed by all staff. This setup was tested and proved to be very functional during the period of the COVID-19 pandemic.

Since 2014, more than £1.5m has been invested in LIBS infrastructure and facilities. This has helped create a strong sense of identity and community. Open-plan learning lounges and group work areas have been re-designed with research in mind, encouraging whole community interaction and facilitating the co-creation of knowledge and partnership development. LIBS house a dedicated space for research students. Specialist collections of books, journals and electronic resources relating to business, economics, and management are in the adjacent University Library. Since the start of COVID-19 pandemic explicit measures have been implemented to facilitate remote access through providing laptops and expanding our electronic databases. The Executive Development Centre, located in LIBS, acts as a gateway to the business world by forging links with companies and providing opportunities for collaboration with

industry, thereby enabling the production of research outputs with practical impact. An example of successful outreach is the LIBS Connect initiative that brings together LIBS academics and the local and national business community.

#### 4. Collaboration and contribution to the research base, economy and society

##### 4.1 Research collaborations, networks, and partnerships

Collaborative interdisciplinary and multidisciplinary approaches are central to the way that Business and Management in Lincoln conceptualise research and are, together with an international comparative approach, a hallmark of our outputs. Our research draws *inter alia* on scientific disciplines such as economics, engineering, geography, history, psychology, sociology and is a part of a range of extensive, interdisciplinary networks, stretching across the UK and the world, and beyond academia. We contribute to the research base through each of our five key research themes. In addition to the staff submitted, each of the research themes has a broader base of active researchers, many of whom we would expect to enter in future REF exercises. Under each of the research themes, described below, the UoA Business and Management interdisciplinary collaborations, networks, and partnerships are summarized.

**Responsible Management** (S. Armstrong, M. Bal, A. Caputo, T. Fuller, D. Hack-Polay, P. Igwe, AB. Jabbour, CJ. Jabbour, G. Marzi, J. Mendy, Ma. Rahman, Mi. Rahman, M. Rizov, S. Saha, C. Smith, D. Twigg). Centred on our work in PRME and UNESCO, research is spearheaded by T. Fuller who holds the UNESCO Chair of Responsible Foresight for Sustainable Development. The theme covers research into social and economic development, and in particular focuses on human agency and the relationship that individuals and organisations have with their futures. The theme also includes research in strategic management underlining its link with sustainability and responsible management. We have research strength and a team working in the field of ethical management and leadership; core to this is our relationship with MoD and all branches of defence services. A principal research outcome and impact is the cross-sector learning derived from the renowned strength of UK military in leadership, with other business sectors and in non-commercial contexts. More broadly, the responsible management theme incorporates world-leading research into human resources, engagement with employees, and the psychological contract all these developed in association with the Future of Work network (M. Bal). Alongside this work, we have a notable strength and active partnerships (with Chinese partner universities) in research on cognitive/learning styles and their influence of person-environment fit, performance and conflict in the workplace, management learning/knowledge acquisition and organizational citizenship behaviours (S. Armstrong).

**Rural and Regional Economic Development** (I. Demir, D. Gray, R. Herron, J. Hou, G. Lakshmi, A. Mazhikeyev, L. Price, H. Quach, D. Radicic, M. Rizov, E. Ruto, A. Rydzik, S. Saha). The theme covers a wide range of multi-disciplinary work across LIBS and beyond. The work of L. Price involves engagement with local partnerships and encapsulates research into regional and local economic development, and business support, including a series of economic baseline studies and policy evaluations to inform decision-making for local enterprise partnerships and local authorities. A key sub-theme of this work is rural digital policy which includes evaluation of rural broadband investment programmes, analysis of the rural digital sector, and knowledge-exchange projects with local businesses. An associated significant externally funded project is the EU Interreg CORA. This work has been extended through the recent new funding obtained for the COM3 project again from EU Interreg, in which LIBS and Lincolnshire County Council are partners. COM3 focuses on fostering digital transformation among rural businesses, and also funds a local challenge-based learning activity that pairs undergraduate students with local businesses to explore digital business solutions. There are also strong applications of these sub-themes amongst colleagues in agri-food entrepreneurship, micro- and small business entrepreneurs and entrepreneurship involving women and migrants, as well as research into innovation clusters and housing. Further, our strengths in regional development research are highlighted by the EU RUNNIN network project (R. Herron). The strengths in regional economic policy research are further highlighted by the EU Interreg SALFAR network project (E. Ruto).

**Place-making and Heritage** (I. Bregoli, R. Herron, J. Hardwick, H. Hughes, Z. Mendiwelse-Bendek, L. Price, Mi. Rahman, A. Rydzik, S. Saha). The research around this theme focuses on tourism and the visitor economy. A specific sub-theme is concerned with the visitor experience

and development of the international tourism offer, and the drivers and implications of sustainable tourism. H. Hughes has been at the centre of creating worldwide recognition for our work in heritage and the visitor economy, especially in the difficult area of contested heritage. This work has culminated in the International Bomber Command Project (Heritage Lottery Fund supported in 2016), the International Bomber Command Centre (opened in Lincoln in 2018), and the EU H2020 WE-Hope network project. Another example is S. Saha's research grant, awarded in 2020 by the Qatari government, to develop, in a collaboration with researchers from Australia and Qatar, a model for increasing tourism flows associated with the forthcoming Football World Cup.

**Markets, Industries, and Innovation** (T. Bruenner, A. Caputo, M. Hingley, J. Hou, AB. Jabbour, CJ. Jabbour, G. Marzi, A. Mazhikeyev, D. Radicic, Ma. Rahman, Mi. Rahman, M. Rizov, D. Twigg). A particular focus of the research in this theme is on industry 4.0, environment and innovation. In addition, an important sub-theme is concerned with research on food economy, food networks and micro and small businesses (CJ. Jabbour, M. Hingley). Other specific sub-themes are sustainable supply chains and circular economy business models (AB. Jabbour), networks and the influence of organisational power in business to business relationships, collective self-organisation of businesses, which link with operational research (OR) and systems applications (AB. Jabbour, M. Hingley). Researchers contributing to this theme are involved in a large cross-college collaborative project on Agri-robotics funded by the UK Government's Expanding Excellence in England (E3) Fund. Researchers contributing to this theme are involved in cross-country projects to understand the interplay of sustainable supply chain management and adoption of emerging technologies (CJ. Jabbour) and the challenges of sustainable chains in emerging economies (AB. Jabbour). Recent UKRI funded project is dedicated to understanding challenges and opportunities of the supply chain of high-tech innovations in the UK (CJ. Jabbour). A further sub-theme of strength is the economic analysis of the labour market and behaviour of market agents associated with minimum (living) wage as this research has informed the Low-pay Commission (M. Rizov).

**Sustainable Communities** (T. Fuller, R. Herron, P. Igwe, G. Lakshmi, Z. Mendiwelse-Bendek, L. Price, Ma. Rahman, A. Rydzik, S. Saha). The theme encapsulates work in operational research (OR) and systems applied to community groups and not-for-profit organisations which has a global reach. Specific application is a community-based research in an international context (notably in the Colombian peace process) identifying solutions to conflict (Z. Mendiwelse-Bendek). This has resulted in a model and application now being globalised, to realise benefits for people, communities, organisations and industrial sectors, to overcome conflict and post-conflict barriers. Another sub-theme is the role and impact of migration on society and the local communities (R. Herron, A. Rydzik). A. Rydzik runs a European-wide academic network on migration (MiCaRD), with funding from the Regional Studies Association. Related research concerns gender and employment/entrepreneurial behaviour. This collaborative work fits also within the Eleanor Glanville Centre at the University of Lincoln which is an interdisciplinary research centre for inclusion, diversity, and equality in the community. In supporting our research groups and themes we have over the period appointed Visiting Professors (15) and Fellows (15), and have drawn on their tremendous, academic, professional and business knowledge and expertise. An example is Professor E. Antonacopoulou, who, besides being a prominent academic, has held several leadership roles in the Academy of Management (USA), the European Group for Organizational Studies, the British Academy of Management and the Society for the Advancement of Management Studies.

## 4.2 Relationships with users, beneficiaries and society

### (i) Local collaborations

LIBS contribute to collaborative research that builds on the institution's role as a civic university supporting its local community and economy, around the following themes and activities:

- Social innovation – South Lincolnshire Social Issues Forum (R. Herron); engagement with City Council on the regeneration of the Sincil Bank community (R. Herron, C. Smith); and Hill Holt Wood (social enterprise) research (L. Price).
- Public health, children, adults, and consumer wellbeing - engagement with Lincolnshire NHS Trust, Relate, Siemens, and Lincolnshire Co-operative (R. Herron, L. Price, T. Fuller) and the East Midlands Engine (CJ. Jabbour). With their focus on rural

development, LIBS researchers worked with the National Centre for Rural Health and Care to evaluate new approaches to rural healthcare delivery and contributed to understanding the wellbeing of farming communities, in conjunction with the Worshipful Company of Farmers (L. Price).

- Heritage and tourism regeneration - engagement with Lincoln City Council and International Bomber Command Centre (H. Hughes); economic assessment of Lincoln Christmas Market for Lincoln City Council (L. Price, H. Hughes); evaluations of Lincolnshire Show and Waddington Air Show.
- Enterprise development - working with Greater Lincolnshire LEP to assess the scale and support needs of the local digital sector and Lincolnshire County Council to evaluate policy to support broadband adoption, providing the evidence base for the Lincoln Town Investment Plan (L. Price, A. Mazhikeyev); working with Greater Lincolnshire LEP and Lincoln Chamber on a quarterly regional economic survey (D. Gray, L. Price); advising Greater Lincolnshire Enterprise Partnership (L. Price, M. Rizov), and Midlands Engine Observatory on local and regional sector priorities.
- Sustainable development in food supply chains - working with business and community to address town centre decline and support retailing via the High Street Vitality Working Group (M. Hingley).
- Growing a network of local private-sector research collaborators - including Rose Regeneration, OpenPlan Consultants, Collison Associates which provide complementary sector knowledge and linkages to local networks.

#### ***(ii) National and international collaborations***

Business and Management research at Lincoln is increasingly characterised by collaborations with academics and non-academic users and beneficiaries from other institutions and this is reflected in the quality of our published outputs, dissemination activity, user engagement, and impact. Each researcher from our REF submission has at least one external collaboration. In the submission, 65 items contain international subject matter (compared to 22 in REF2014) and 103 collaborations with colleagues outside of the UK are reflected in the items submitted (REF2014: 35). LIBS' T. Fuller was recognised for contributions to the PRME and awarded a UNESCO Chair. The Chair facilitates North-South collaborations, as well as working directly with UNESCO Paris on futures literacy. Further contributions to the PRME agenda was made by Ma. Rahman through a British Council project in Bangladesh and by H. Quach through a development project funded by a large private business in Vietnam. Several colleagues have won competitive funding awarded by overseas agencies such as H. Hughes' co-investigation within the EU H2020 WE-Hope project to provide an example. Others have succeeded through international collaborative schemes in forging partnerships with prestigious institutions abroad. For example, S. Armstrong was awarded the title of Beijing Specially Recruited Expert by the Beijing High Level Talent Organization. This involves a 3-year term of office (2018-2021) working closely with staff from the School of Economics and Management, Beijing University of Technology (BJUT). Activities have so far led to the development of a number of research projects, jointly authored publications, and research grants awarded from: National Natural Science Foundation of China, Beijing Office for Education Sciences, Humanities and Social Sciences Foundation of Beijing University of Technology, and Beijing Municipal Education Commission. Two more examples: M. Bal is active in the European Association of Work and Organizational Psychology; M. Rizov is active in the EU COST Action on agricultural productivity.

#### **4.3 Wider contributions to research base**

In line with our research and impact strategies, LIBS researchers contribute to the wider discipline and society in a number of important ways:

***(i) Seminar series and conferences.*** In addition to holding our own regular (weekly, bi-weekly, or monthly) research seminars across the research groups, our policy has been to focus on seminar series in innovative areas with international dimensions that involve other universities and organisations to facilitate development of joint research and funding bids. LIBS has organised several conferences over the REF period. Our annual LIBS Research Showcase takes place every year in June. Since 2015 a bi-annual Development Economics Conference (DEC) attracts large international audiences.

LIBS staff members have also been invited to give a wide range of talks to research institutions, *keynote* conference presentations and public forums. For example, the Oxford Farming Conference (2015, M. Hingley), APEC Conference on SMEs' participation into the Food Supply Chain in Hanoi, Vietnam (2016, M. Hingley), UK Association of Information Systems (2017, T. Fuller); Slovak Agricultural University in Nitra (2015, M. Rizov); National University of Singapore (2018, S. Saha); University Malaysia Terengganu (2020, AB. Jabbour); Sao Paulo State University (2020, AB. Jabbour).

**(ii) Journal and professional association contributions.** Journal *editorship* duties performed by LIBS staff include:

Academy of Management Learning & Education Journal (Associate Editor: S. Armstrong)

International Journal of Management Reviews (Consulting Editor: S. Armstrong)

Asia Pacific Journal of Management (Consulting Editor: S. J. Armstrong)

Journal of Management Education (Consulting Editor: S. J. Armstrong)

Organization Management Journal (Consulting Editor: S. J. Armstrong)

Human Resource Management Journal (Associate Editor: M. Bal)

Futures, the Journal of Policy, Planning and Futures Studies (Editor-in-Chief: T. Fuller)

Industrial Marketing Management (Assoc. Editor: M. Hingley)

Journal of Knowledge Management (Associate Editor: AB. Jabbour)

Journal of Cleaner Production (Associate Editor: CJ. Jabbour)

Sustainable Production and Consumption (Associate Editor: CJ. Jabbour)

Global Journal of Flexible Systems Management (Associate Editor: CJ. Jabbour)

Management of Environmental Quality (Associate Editor: CJ. Jabbour)

Modern Supply Chain Research and Application (Associate Editor: CJ. Jabbour)

Journal of Economic and Administrative Sciences (Associate Editor: M. Rizov).

LIBS staff have guest-edited numerous *special issues* including in: Industrial Marketing Management (M. Hingley, 2015), Journal of Business and Industrial Marketing (M. Hingley, 2017), Strategic Change (Mi. Rahman, 2017, 2019, 2020), Journal of Cleaner Production (AB. Jabbour, 2020), Production Planning and Control (AB. Jabbour, 2019), Technological Forecasting & Social Change (CJ. Jabbour, 2020), International Journal of Physical Distribution and Logistics Management (CJ. Jabbour, 2020), International Journal of Manpower (CJ. Jabbour, 2020), Management of Environmental Quality (CJ. Jabbour, 2019), Sustainable Production and Consumption (CJ. Jabbour, 2020), Operations Management Research (CJ. Jabbour, 2020).

LIBS staff have been members of several *editorial boards*, including:

Human Resource Management Journal (M. Bal)

International Journal of Human Resource Management (M. Bal)

Work, Aging and Retirement (M. Bal)

International Journal of Gender and Entrepreneurship (T. Fuller)

Journal of Cleaner Production (CJ. Jabbour)

International Journal of Information Management (CJ. Jabbour)

British Food Journal (M. Hingley; M. Rizov)

E-Journal of International and Comparative Labour Studies (M. Rizov)

Journal of Economic and Administrative Sciences (M. Rizov).

LIBS staff have *reviewed grant applications* for prestigious funding organisations, e.g., ESRC (T. Fuller, Z. Mendiweso-Bendek, M. Rizov), FWO, Belgium (M. Rizov), SSHRC-Canada (M. Rizov), The British Commonwealth (Ma. Rahman), EPSRC (CJ. Jabbour), FAPESP-Brazil (CJ. Jabbour). Staff also have served as members of review panels (Peer Review College and Marsden Trust, New Zealand, T. Fuller; ESRC and DEFRA, M. Hingley; G&M2, FWO, Belgium, M. Rizov).

Further, contributions to *learned societies* are by T. Fuller who has been on the Examinations Board of the Institute of Directors, and UK Vice President of the European Council for Small Business; R. Herron has been on the Awards Committee of (and judge for) the Operations Research Society and joint organiser of the Community OR Special Interest Group.

**(iii) Co-operation and collaborative arrangements for PGR training.** We seek to expand the training opportunities available to our research students and ECRs, to create further links and to stimulate our existing students' self-activity. The University has already won the RCUK doctoral scholarship award in Agri-robotics and LIBS is part of the wider framework. The major research

student conference organised annually by the Doctoral School in partnership with LIBS attracting majority of our PGR students exemplifies our collaborative approach. Internationally, during 2018-20 LIBS signed a Memorandum of Understanding with Malaysian, Indonesian, Vietnamese, and Brazilian universities with the main purpose of developing exchange and training opportunities for LIBS PGR students and staff. Staff of these universities have been on exchange research visits to LIBS. We have actively collaborated in staff and student exchange through the Erasmus scheme, and this stimulated international research collaboration and both staff and student engaged research. Related activity by LIBS staff members is the examination of doctoral candidates, both nationally and internationally, at many institutions, including: Brunel, Manchester, Newcastle, Kent, Middlesex, Nottingham, Stirling, and Swansea universities in the UK; Lausanne, Switzerland; Valencia, Spain; VU Amsterdam, the Netherlands; Macerata, Italy; Pretoria, South Africa; Griffith, Australia; Aarhus, Denmark; UCD, Ireland, Helsinki and Turku, Finland; Szeged, Hungary. T. Fuller has been on the steering group of the 13-university-strong Northern Advanced Research Training Initiative (NARTI), offering advanced research training to PGRs and ECRs. LIBS staff have facilitated advanced training with NARTI (M. Rizov and S. Saha, 2015, 2017, 2019).