Institution: Abertay University

1. Context and mission

Abertay University is a compact, focussed, interdisciplinary institution, with ~215 academic staff, ~270 professional support staff and ~4,500 students. We have an established reputation for working across traditional research boundaries and in emerging disciplines and sectors. We deliver vocationally-relevant degrees and have pioneered development of innovative programmes such as Pluralistic Counselling, Ethical Hacking and Computer Games. We are the only European university listed in the 'Princeton Review World Top 25 Games Universities', we hold an Athena SWAN Institutional Bronze award and were the first – and so far only – Scottish university to achieve the Race Equality Charter Mark. Abertay has grown its reputation since REF2014, being named top modern university in Scotland (*Guardian Good University Guide 2019*; *Times/Sunday Times Good University Guide 2017*).

Abertay is undergoing an ambitious programme of continuous improvement, including realignment and restructuring since REF2014. Research, Knowledge Exchange (RKE) and teaching takes place across 10 Divisions within three **Schools (Design and Informatics [SDI]; Applied Sciences [SAS]; Business Law and Social Sciences [SBLS])**, and research degrees are hosted within a pan-University **Graduate School (GS)**. Specialist technician support is based within Schools and professional support services are provided at University level.

Our approach to RKE is defined in our **University Strategic Plan**:

1. We are committed to producing quality RKE that is aligned with international, national and local priorities and delivers real impact for society.
2. We will invest in research and increase our reputation for RKE in areas that enhance our academic programmes, thereby ensuring a sustainable, vibrant and collaborative researcher community.
3. We will support staff to deliver quality research output, knowledge exchange and impact; we will clearly articulate our expectations and standards to staff.

Our planning builds on our most successful REF submissions (REF2014), whilst supporting the emergence of new research groups within priority areas. This strategy has led to resubmission of 5 UoAs and submission of 3 new UoAs (Figure 1).
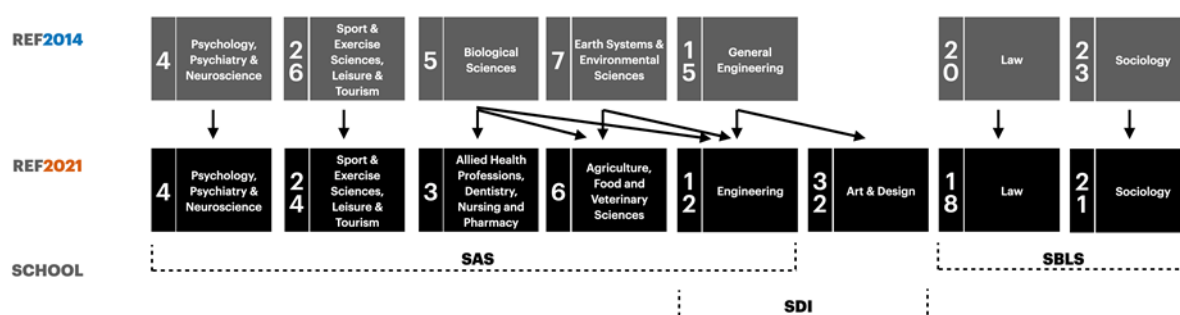

Figure 1. REF2014 and REF2021 UoA submissions.

2. Strategy

2.1. Strategic plans

Our vision is *focused collaborative research and interdisciplinary innovation for impact*. Activity, collaboration and interdisciplinarity is driven across the University through implementation of our **R-LINCS (Research-Led Innovation Nodes in Contemporary Society) RKE Strategy (2014-19)**. R-LINCS is driven by a University-wide Research Executive (RE) responsible for

enhancing the development of a sustainable research environment through strategic investment and cross-cutting support. The RE interacts directly with the **University Executive**, the **Schools** and Abertay's **Research and Knowledge Exchange Committee** (RKEC), to promote and facilitate a thriving, inclusive and collaborative research culture, and enable impact within and across research units. **R-LINCS (2014-19)** focused on four cross-University themes (**Environment, Security, Society and Creative Industries)** to drive development of research excellence and impact through:

- Pan-University research leadership to drive discipline strengths and interdisciplinary research, propose strategic research-focused appointments and mentor Early Career Researchers (ECRs);
- Intra- and inter-theme support for research (Theme Leaders and funded doctoral studentships);
- Creation of a pan-University Graduate School, offering a comprehensive and integrated training and development programme to staff and research students;
- Pump priming funding;
- Open-access publication support;
- Public-engagement facilitation.

R-LINCS2 (2020-25) will accelerate impact through an integrated strategy at individual, School and University levels. Strategically, RKE is focused within and across **Challenge Spaces** addressing key local, national and international priorities that our research base best positions us to respond to (Figure 2). Challenges are addressed by drawing on our **Pooled Excellence** research expertise, which represent cross-institutional ways of working. Researchers will be able to align with one or more areas to encourage collaboration and cross-fertilization of ideas.
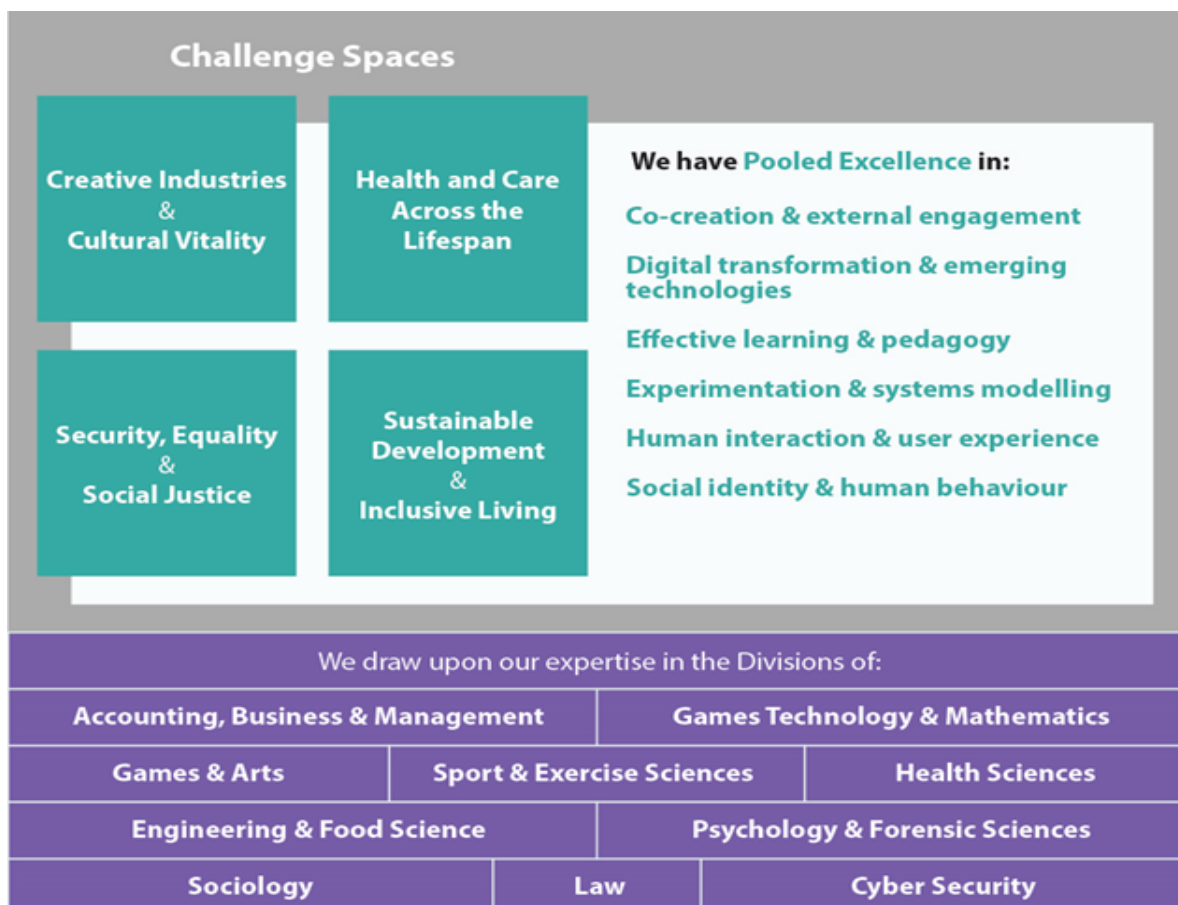

Figure 2. R-LINCS2 (2020-25).

Abertay is fully engaged with (and a signatory of CSCDR & KEC) the principles of the **Concordat to Support Research Integrity** (CSRI), the **Concordat to Support the Career Development of**

Researchers (CSCDR), the **Concordat on Open Research Data**, the **Knowledge Exchange Concordat** (KEC), and the **Concordat for Engaging the Public with Research**, which we use to guide development of supportive RKE policies, practices and structures. We are compliant with our CSRI commitments; all staff, students and visiting researchers must adhere to the highest standards of integrity in the conduct of their research as specified in the **Abertay Research Code of Conduct** (ARCoC) and engage in mandatory research integrity training. The **Dean of Research & Graduate School** and the **University Research Ethics Committee** are responsible for development and delivery of the CSRI Action Plan, which is reported to RKEC and the **Scottish Funding Council** (SFC) in our **Outcome Agreement**. Abertay signposts contacts should anyone wish to discuss or raise concern about research misconduct, in line with our ARCoC and **Complaints Handling Procedure** policy.

We are progressing development of our **open research environment**; published outputs are open-access compliant, and we are working towards compliance with our research data (freely accessible by December 2021). Our **Open Access** and **Research Data Management Policies**, researcher development training and individual support, has been used to increase staff engagement in open science/research practices, pre-registration, and the use of open-access data repositories. We are committed to the responsible use of metrics in research evaluation and are a signatory of the **San Francisco Declaration on Research Assessment (DORA).** Our policy and practice on the use of research metrics for research assessment is included within our ARCoC and is mainstreamed within our Recruitment and Promotions Policies, and our REF Code of Practice.

2.2. Achievement of strategic aims

REF2014 strategic aims and R-LINCS have shaped our RKE leadership, investment, appointments and partnerships during REF2021 to:

- **Enhance the value of researcher output and impact through research leadership and a streamlined research infrastructure.**

  R-LINCS, the RE and Theme Leaders have worked with Schools to support areas of existing and emerging research excellence, and contribute to economic prosperity, social and cultural impact, and inclusive growth. Through strategic and targeted investment, we have fostered collaborative ventures including inter- and intra-institution RKE programmes. These developments (described throughout) have impacted directly on our portfolio of REF2021 returns.

- **Build critical mass and new RKE strengths by leveraging existing excellence within priority themes.**

  We have achieved substantial growth in research performance during REF2021: citations have increased from 2181 (2014) to 3825 (2019). External RKE income has increased from an annual mean ~£1.2M during REF2014 to ~£1.4M during REF2021. More recently income has grown to ~£2.2M p.a. (2018-20). We have improved Column 1 funding from a REF2014 annual mean of ~£29k (RCUK) to ~£474k for REF2021. We have built critical mass and excellence including in new areas (Section 1) through strategic investment, leadership and researcher development.

- **Develop researchers to be adaptable and flexible in an increasingly diverse and global research environment.**

  The pan-University **GS** has transformed our research environment and RKE support since 2014 (section 3.2.).

Postgraduate Research Students (PGRS) are central to our research community, working alongside experts to pose new questions and find creative solutions to problems facing society. Stable provision of fully-funded (42-month RCUK-level stipend, fees, plus travel/consumables/equipment budgets) **R-LINCS PhD studentships** (32 awarded; 10 externally co-funded) have supported the research of 60 academics; **Abertay Futures Scholarships** (launched 2018) have provided 7 fee-waivers to excellent PGRS in priority areas. By integrating discipline-specific research under the remit of themed, competitive internal funding schemes, we have grown PGRS and contributed to a research environment that has continuously improved during REF2021. All R-LINCS studentship research has been published; 80% of R-LINCS supervisors have subsequently secured external RKE income as PI.

- **Stimulate excellence in collaborative and interdisciplinary RKE with societal and economic impact.**

  Abertay produces quality RKE with **real impact for society**. Our researchers are supported to develop impact pathways including working with stakeholders. We have funded 13 **R-LINCS Pump Priming** projects to stimulate quality grant applications, and used national innovation support (e.g., Innovate UK and SFC Interface). We have delivered 78 industry-led R&D projects, including 29 Interface Innovation Vouchers, which produced (tracked actual reported impact [scaled data quoted]) 36 [209] new/improved products, processes or services, 3 [17] new or safeguarded jobs, and 7 [41] businesses reporting further R&D investment valued at £315K [£1,830,938]. We have hosted 11 Knowledge Transfer Partnerships (KTPs), and are currently ranked 7th most active HEI in Scotland and 43rd in the UK. Some KTPs have won awards, e.g., Ivan Wood and Sons Ltd project graded as Outstanding by Innovate UK and won Innovation of the Year at Scottish Knowledge Exchange Awards (2017).

  Introduction (2016) of our open **Intellectual Property (IP) Policy**, giving researchers free access to IP they generate (except for specific circumstances), has stimulated researchers to develop new products/applications for end-users. Awards include Royal Society of Edinburgh (RSE) Enterprise Fellowships (2015, 2018), RSE Unlocking Ambition Enterprise Fellowship (2018), and Women in Technology–Rising Star Award (2018).

- **Develop our strategic collaborations.**

  Abertay is an important institution for the region, collaborating with local identity and global outlook to drive regional, national and sectoral growth. Examples include: Food & Drink Innovation (supported >100 UK companies); Abertay's lead of InGAME (£11.5M R&D Centre for the Computer Games industry, part of the AHRC Creative Industries Cluster); and recently the cyberQuarter (£11.7M cybersecurity R&D Centre, supported by Tay Cities Deal).

2.3. Future Strategic Aims and Goals

We will deliver our **University** and **R-LINCS2 (2020-25) Strategic Plans** and objectives and will accelerate our trajectory and delivery, through focused purposeful activity, increased strategic investment, research leadership, recruitment and management, and continued development of our sustainable research environment. Abertay has already committed investment for around 15 fully funded R-LINCS2 PhD studentships, funded PhD studentships for newly appointed academic staff, Abertay Futures Scholarships, and Pump Priming and Open Access Publication awards. We will monitor our progress through annual KPI reporting, and our goal is to improve all (income, citation and quality of output, PGRS numbers and success rates, engagement with researcher development) across the next assessment period.

3. People

3.1. Supporting and Promoting Equality and Diversity

Our **University Strategic Plans** affirm Abertay's core purpose to develop and sustain an inclusive, healthy and supportive culture, welcoming and retaining students and staff from a diverse range of backgrounds and inspiring our students, staff and graduates to achieve their full potential.

Since REF2014 we have reviewed our Equality and Diversity (EDI) governance, management and involvement. We embed EDI in all our policies, operations, and strategic thinking, recognising and valuing colleagues and students with different backgrounds, experiences and attitudes who bring fresh ideas and perspectives to Abertay. Supported by our People Services team, all managers hold responsibility for implementing EDI policies. Our **Inclusion, Diversity and Equality at Abertay** (IDEA) group manages and monitors implementation with oversight from University Court's **People, Health & Equality Committee**. The University consults Trade Unions on EDI through regular Joint Liaison Committees.

Abertay was awarded **Athena SWAN** (AS) Bronze (2015, 2018), and all three Schools are preparing departmental submissions. In 2016 we became, and remain, the first and only Higher Education Institution in Scotland to hold the **Race Equality Charter Mark** bronze (RECM). Our AS and RECM action plans feed into our **EDI Action Plan** covering the range of protected characteristics. We have held an **NHS Scotland Healthy Working Lives Gold Award** since 2016.

Support is given for training in gender awareness, including conferences, mandatory and voluntary training (e.g., Equate Scotland events). Since 2015, we have funded 12 support and 14 academic women in the **Aurora** leadership programme, with 9 staff engaged as Role Models.

We have sought to align procedures and practices to support researchers around the principles of **CSCDR** to create a culture for researchers to thrive. Implementation of our CSCDR plan is reviewed annually by RKEC and reported to University Senate.

Our **Academic Recruitment and Promotion Policies** ensure fair, equitable and transparent processes for appointing and re-grading academic staff. As a **DORA** signatory, when considering appointments and promotions, we evaluate research on its own merit. Our Recruitment Policy ensures that researchers on fixed-term contracts are not discriminated against in terms of access to career development activities and redeployment. All staff have undergone mandatory Diversity in the Workplace and Unconscious Bias training, and Recruitment and Selection training is required for all involved in recruitment and promotion decisions. In line with our Public Sector Equality Duties, we have published an **EDI Action Plan** that maintains the process of **Equality Impact Assessment** (EIA) for policy, statements and procedures and makes accessible relevant software and information. The average institutional **gender pay gap** (GPG) for all staff was 13.5% and 9.6% (mean), and 13.7% and 5.7% (median) in 2019 and 2020 respectively. GPG for all academic and research staff at REF2021 census was 2.7% mean.

Since REF2014, we have appointed Chairs, Readers, Senior and ECR Academics to achieve a sustainable staff structure. EDI data prior to 2017 are unavailable; since 2017, we have for example, appointed 4 women (success rate:13%) and 4 men (7%) at Professorial Grade 10; 17 women (10%), 29 men (8%) at Grade 7/ECR equivalent. Of the 10% appointed from 1,319 applications received for academic and research roles, appointment rates were the same for men and women (13%), and similar (11%, 11%, 8.5%, 11%, 8%) for age profiles 20-29, 30-39, 40-49, 50-59, 60+ years. For senior academics (Grade9 and Grade10; 137 applicants), rates were 12% for women, 8% for men, and 0%, 0%, 14%, 8%, and 7%, for age profiles 20-29, 30-39, 40-49, 50-59, 60+ years. Rates for ethnic groups were 16% White (senior staff: 8%), 0% Mixed (ND), 5% Asian or Asian British (0%), 7% Black or Black British (9%), or 10% other (13%), although percentages are skewed by some small numbers.

Our commitment to investing in staff is further evidenced by success rates at our annual promotions rounds: Since 2014, 49% of 200 applications received were successful (F:55%, M:44%). Promotion success to grades 7 (F:60%, M:33%), 8 (F:58%, M:57%), 9 Senior Lecturer (F:56%, M:37%), and 10 Professor (F:43%, M:32%), have improved progressively from 42% in 2014 to 76% in 2020. These data, together with that for recruitment, indicate a strong performance by female applicants, particularly for senior positions.

Our **Sabbatical Policy** supports sabbatical leave for research development and other professional interests. The policy affords particular consideration of leave following maternity/adoption/shared parental leave to help re-establish the employee's career and allows for sabbatical leave as positive action to promote career development for under-represented groups. During REF2021, 11 researchers (F:5, M:6) have taken sabbaticals.

Our suite of **Work Life Balance Policies** (**Flexible Working**; **Maternity Leave**; **Parental Leave**; **Shared Paternal Leave**; **Adoption Leave**) are designed to support staff to balance work- and home-life and deal with personal responsibilities. Abertay supports all periods of maternity leave regardless of provision by external research funders. Managers look favourably at any formal flexible working requests and support staff to work remotely where preferred.

Academics from diverse backgrounds are well-represented within university committees and research leadership groups. Staff activities and commitments are allocated points and workload is managed through a transparent **Workload Allocation Model** (published internally) that supports University/School priorities and reflects individual career aspirations and circumstances.

3.2. Staff development

The **University** and **RKE Strategic Plans** identify professional development as central to achieving our ambitions. All new staff and PGRS receive a mandatory and comprehensive **Induction Programme** and information pack which identifies sources of RKE support, and key information on ethical research conduct.

Consistent with the **CSCDR**, line managers are committed to staff well-being and hold bi-annual personal **Development Discussion** meetings. These appraise both short-term objectives and long-term plans, discuss development needs, and review any well-being or workload issues. Many development needs are met within the **GS**, which provides >100 Researcher Development opportunities annually to PGRS and research/academic staff, including seminars, workshops (e.g., R, statistics, GDPR, data management, PGRS supervision, impact, enterprise, and ethics), retreats, on-line courses, a bespoke **Leadership in Higher Education Programme**, Paper and Grant Writing Academy, public engagement, media training, and one-to-one support for applications and publications. Schools offer research seminar series delivered by internal and external speakers, open to all.

Staff training and development needs that cannot be met internally are provided through externally provided training, either in-house (e.g., Fast Track Impact; Transparent and Reproducible Science training) or through participation externally.

We are part of the inter-University **Scottish Graduate School for the Social Sciences (SGSSS),** the **Scottish Graduate School for the Arts and Humanities (SGSAH**, the **Scottish Institute for Policing Research (SIPR)**, the **Scottish Alliance for Geoscience and Environmental Science (SAGES)** and the **Scottish Informatics and Computer Science Alliance (SICSA)**. Through these organisations Abertay has access to world-class research training including advanced training courses, annual summer schools/conferences, industrial placements, collaboration funding, and co-funded studentships.

ECRs and **new appointees to academic roles** receive reduced workloads in their first year and priority access to R-LINCS funding. Depending on experience, ECRs may also need to complete Abertay's **Postgraduate Certificate in Academic Practice** (PGCAP). In recognition of the

demands on ECRs as researchers, PGRS supervisors and teachers, Abertay's revised (2018-19) accredited PGCAP leading to HEA Fellowship, includes an entire module devoted to developing the knowledge, attributes and strategy required for an effective researcher and supervisor.

Staff who are inexperienced in postgraduate supervision are required to complete an online Epigeum course on **Supervising Doctoral Studies** and our in-house training before taking on and being mentored through a first PGRS supervision. Those new to Research Degrees examination must engage with our **Novice Internal Examiners Process** which involves in-house training and observation of *viva voce*.

In 2016-17, Abertay joined a **Cross-Institutional Academic Mentoring Scheme TRAM** with the Universities of Dundee and St Andrews. Originally aimed at ECRs it has been extended to senior academics/researchers and three other Universities. Staff are matched annually with mentors/mentees at external institutions to provide objective support for career development. Sixty Abertay academics have engaged as mentees (F:21;M:16) or mentors (F:11;M:12).

3.3. Research students

Abertay is committed to PGRS development to ensure development of the skills needed for research effectiveness, employability and career development. The **GS** has transformed our PG research environment and was commended as good practice during our Enhancement-led Institutional Review (2016-17).

All PGRS have access to our dedicated flexible study and social spaces where they can work with other researchers from across Abertay. PGRS have access to GS staff (5.8 FTE) and Researcher Development opportunities described previously (sections 2.2.& 3.2). The GS creates a structured system to support PGRS progress including:

- **Training and professional development opportunities** and support with funding applications, publication, impact, business development, placement opportunities, research design and statistics, public engagement and outreach. Our flexible programme allows customisation to suit research areas, and individual needs and aspirations.

  We draw on national development, networking and placement opportunities (e.g., VITAE, Advance HE, SIE, Three Minute Thesis, Royal Society of Edinburgh and the Scottish Research Pools and Graduate Schools), as well as on-line resources (e.g., Epigeum Research Skills Masters and Supervising Doctoral Studies Programmes). PGRS contribute to public engagement (e.g., Royal Academy of Engineering: Ingenious Project "On the right track" and the Dundee Science Festival Primary Schools Programmes).

- **Personal development planning:** PGRS plan professional (training needs) and personal development goals and track ongoing achievements using our Vitae Researcher Development Framework system. This ensures students are systematically focused on progress, and are able to articulate the research, experience and wider achievements attained throughout their PG training.

- **Progress Reviews:** PGRS complete an annual progress report and presentation to a Review Panel to assure student progress, supervision quality and opportunity to address any issues.

- **Annual Graduate School conference:** PGRS present their research to peers and staff from across Abertay to help develop presentation skills in a formal context. PGRS are encouraged to organise (e.g., SISCA Annual Postgraduate Conference) and present at external conferences, for which our PGRS have won awards, (e.g., SAGES, SIPR).

- **Funding opportunities:** students can apply to a dedicated fund for training support (18 PGRS funded since 2016/17).

- **Career development (teaching):** PGRS wishing to access opportunities to teach must complete and pass our **Beginning to Teach in HE** programme. PGRS can also register for part of the PGCAP.

The growth in number and success of our PGRS base has been a notable component of our improved research environment. Mean PGRS registrations for PhD, MPhil and Masters by Research (MbR) per year have been 92, 4, 26, respectively, and we have more than doubled the PhD awards (91) across 8 UoAs (REF2014: 40 PhDs across 7 UoAs). Our *viva voce* success rates within the maximum period of study have improved to 100% since 2016/17, partly due to the introduction of Progress Reviews. Studentships have been funded through external and competitive awards (e.g., Carnegie, Northwood Trust, SGSAH, SIPR) and by internal investment. We encourage Research Degree registration by KTP Associates. This constitutes a healthy PGRS critical mass for a small, vibrant University. Abertay staff also co-supervise students at other Universities and funded by RCUK (e.g., ESRC).

3.4. REF submission

The **REF2021 Steering Group** (F:4;M:4) has overseen preparation of the **REF Code of Practice** through a Working Group (F:6;M:6) of academics from ECR to Dean, including representatives from UCU and Unite. The Code has been subject to extensive consultation, review, EIA, refinement and internal approval, before final approval by the SFC/REF EDI Advisory Panel (November 2020).

Preparation for REF2021 submission has, through an open call, established **Champion Groups for UoAs** (F:28%) to provide opportunities for staff development. Briefings have ensured that academic staff are aware of REF2021 and sessions have been held with managers regarding their critical role. A final EIA was conducted prior to final REF submission, taking account of the provisional impact on individuals, by protected characteristic. No appeals were received.
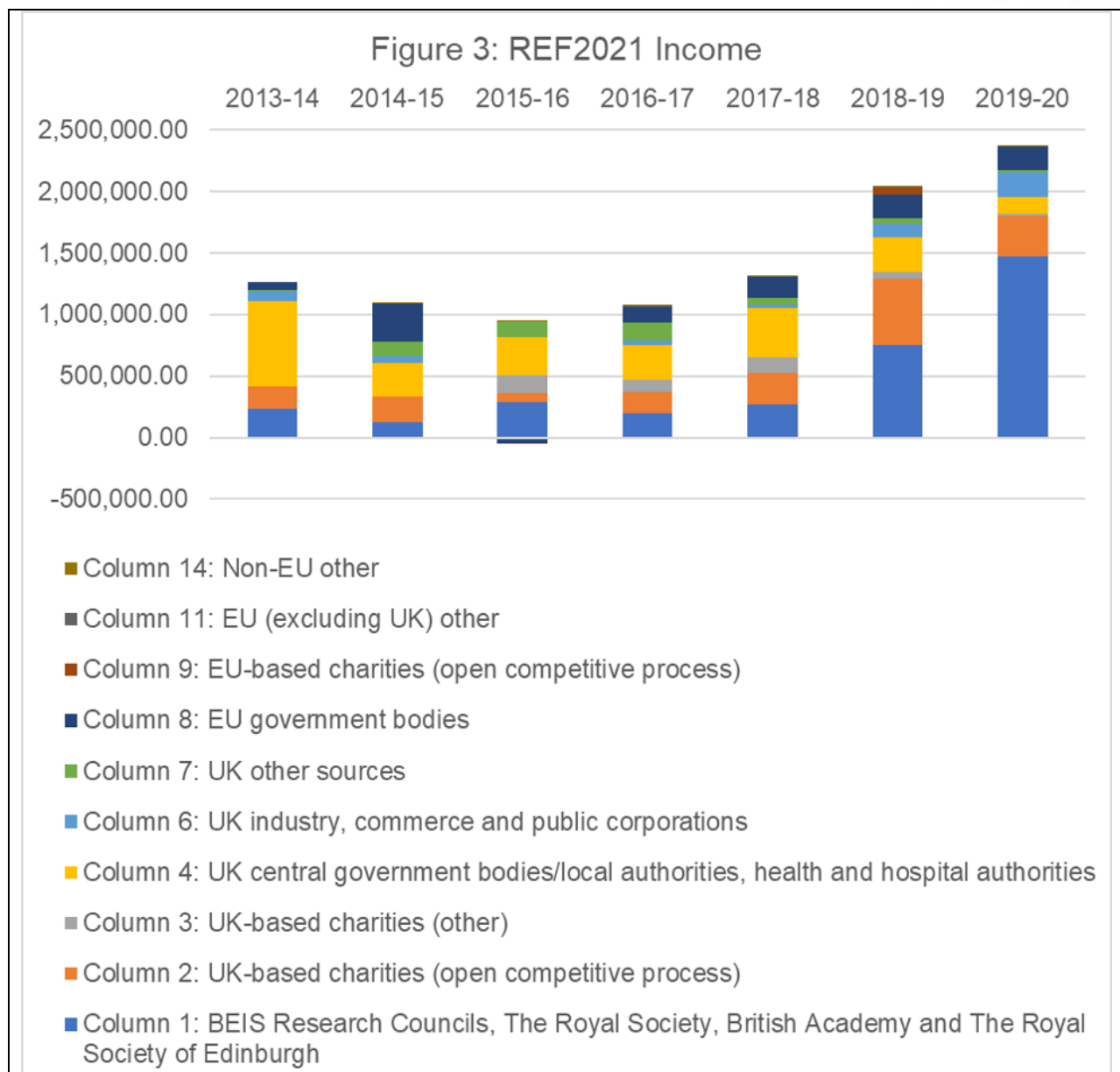
Reflecting our ambitions to grow research and expand into new areas, we have taken an inclusive approach to REF2021, submitting more staff (REF2014:72; REF2021:117) and to more subject areas (REF2014:7; REF2021:8) than REF2014. Our category A eligible staff total is 154. We have made excellent progress in promoting research responsibilities and opportunities across all staff during the current assessment period, particularly in terms of gender equality. The proportion of female academics submitted has improved (REF2014 F:28% and REF2021 F:38.9%), together with an almost 63% increase in submitted FTEs. All submitted staff are on permanent contracts and 5.8% of submitted staff FTE relates to part-time staff. The Disability profile of staff is: 93.1% of submitted staff FTE returned with No known disability, 2.4% disability declared; and 4.5% unknown. The ethnicity profile of staff is 87.4% of submitted staff FTE recorded as white; 0.9% black; 4.5% Asian; 1.8% other/mixed; 5.4% Unknown.

4. Income, infrastructure and facilities

4.1. Income

We received £10,060,790 during REF2021 period (REF4b) (annual mean of £1,437,255); this mean increased from £1,131,942 p.a. (2013-18) to £2,200,540 p.a. (2018-20).

The distribution of income sources reflects important developments in research vitality (Figure 3). We have achieved notable improvement in Column 1 awards, including UKRI funding for research led by Abertay academics as PI. Around a third of our income is Column 1 funding (£3,314,778), which has shown an improved trajectory from £214,184 in 2013-14 to £1,471,525 in 2019-20.

Figure 3: REF2021 Income

Legend:
- Column 14: Non-EU other
- Column 11: EU (excluding UK) other
- Column 9: EU-based charities (open competitive process)
- Column 8: EU government bodies
- Column 7: UK other sources
- Column 6: UK industry, commerce and public corporations
- Column 4: UK central government bodies/local authorities, health and hospital authorities
- Column 3: UK-based charities (other)
- Column 2: UK-based charities (open competitive process)
- Column 1: BEIS Research Councils, The Royal Society, British Academy and The Royal Society of Edinburgh

We have had consistent success in securing Column 4 (£2,361,387 total), Column 2 (£1,759,853 total) and Column 8 (£1,003,304 total) funding and achieved a notable shift in the proportion of Columns 1 and 8 income in particular (44% and 19% (2019-20), respectively, compared to 6% for each (2013-14)). Our achievements demonstrate an increase in ambition, reputation and experience, and reflects the strategic focus on supporting research funding submissions, internal peer-review, and research-time allocation. We have built critical mass through strategic investment (including £639,770 of in-kind staff time), leadership, discipline excellence, and high-quality researcher development.

Our collaborative, interdisciplinary approach with stakeholder engagement has afforded access to high-quality funding, and as part of large consortia, including UKRI (AHRC, EPSRC, ESRC, MRC), Innovate UK, EU MED-ERDF and Interreg Europe, together with KE funding from KTN, Scottish Government and SFC.

4.2. Infrastructure and facilities

Abertay's RKE resources are based on one site, encouraging regular contact among researchers from different disciplines. Our infrastructure and facilities have developed significantly.

Our **Research Enterprise and Innovation Support** assists on research-related matters, including IP, contracts, costings and managing grants. Our campus-based enterprise-hub, **Bell Street Ventures** (launched 2019), develops enterprise skills within our students, staff and graduates and supports start-up creation and success. The facility, supported through a bequest and the Santander Universities Network, enables awards of Enterprise Bursaries (£21k) to student/graduate businesses, and achievements including start-ups reaching ScottishEDGE, AccelerateHER, Scottish Institute for Enterprise and Converge Challenge finals/shortlists, Courier Business Awards (7 finalists in 2019, including Games Business of the Year winner: Hyper Luminal Games, and Enterprise in Education winner: Konglomerate Games), Verizon Unloc Enterprise Challenge (2020 winner), and joint winners of Santander Universities Entrepreneurship Awards (2020).

Investment in the **GS** (£766,181 total) has supported our research vitality. **GS staff** and **R-LINCS Theme Leaders** have coordinated development of collaborative ventures including stakeholder partnerships and cross-disciplinary RKE projects. These investments (£2,810,367 for 9.6FTE excluding Theme Leaders) ensure a consistent, efficient approach to management of research projects and provides excellent pooled expertise to support RKE success. More recently we have launched a **Business Development Unit** (September 2020) which aims to increase income from KE, business development and philanthropic sources (e.g., philanthropic donation (£1,817,000) has supported projects in health and social innovation).

Abertay's RE & RKEC continue to drive development of policies and processes in line with Concordat principles, including introduction of: a **Research Ethics Management System** (£48,468) linked to our GDPR and Research Data Management (Open Data) system; open **IP Policy** (section 2.2); **Peer Review** system to enhance research funding applications (increased success c.27%).

R-LINCS investment (£2,048,327), has provided consistent, competitively won support for RKE development through funded **Studentships, Futures Scholarships**, **Pump Priming**, **Open Access** funds (£10,000 p.a. plus UKRI Open Access Block Grant) and **specialist equipment,** particularly for **new staff** and **ECR**s.

We provide state-of-the-art facilities across Abertay as appropriate to researcher needs regardless of School. Our Estate Strategy ensures new spaces are built to promote RKE-Teaching links. New central investments (£11,398,247) during REF2021 include: **Science Laboratories**; **Sensory & Consumer Science**, **Food Innovation** and **Food Processing Plant**; **Sports Laboratories**, **Gym** and the **Academy of Sport/RKE facilities**; **Counselling Suite**; **Computing and Games Laboratories** including the **Emergent Technology Centre**. Laboratories are supported by technicians (£444,627 for RKE). Researchers have also accessed external specialist facilities, datasets and practitioner expertise through ongoing partnerships.

Our Digital Strategy has delivered improved integration of IT systems and data storage across Abertay. For example, our Library was completely refurbished including IT and AV upgrade between 2016-19 (£5,655,577). Centrally provided software licence subscriptions used for research including statistical packages (c.£32k p.a.) (e.g, Qualtrics; NVIVO), research information and management systems (e.g. DMPOnline, DataCite, PURE, Scopus, Research Professional; c.£50,588 p.a.). Together, these infrastructure and facilities developments represent significant and sustained investment for a University of our size.

Our focus in the forthcoming period will be to enhance and further develop our research infrastructure and facilities to support excellent research with impact. We will remain responsive to external opportunities and challenges and will seek to engage with productive partnerships for the region and internationally. Our capital plan for the next 5 years (£26.3M) includes laboratories and digital infrastructure, support for the cyberQuarter and 5G Innovation Hub in Dundee.