

Institution:



University of St Andrews

1. Context and mission

The University of St Andrews, a Scottish university with a global presence, is a modern institution with an ancient history, combining traditional and contemporary values. Drawn from over 140 countries, our diverse community of staff and students enables us to take a global perspective, as we aim to achieve excellence and leadership in research, teaching, and the pursuit of knowledge for cultural and societal greater good. The University's academic staff comprise 672 on Research and Teaching contracts, 366 on Research-only contracts, and 190 staff on Education-focussed contracts. In 2019-2020, we taught and trained 9,227 students comprising 7,444 undergraduates and 1,783 postgraduates. Since 2014-2015, the student population has grown by 12.4%.

Academic subjects are organised across 19 schools within four faculties: Arts, Divinity, Science, and Medicine. We value curiosity-led research and scholarship, and our size and structure promote working across traditional disciplines. We make significant contributions to national and global priorities including the blue economy, advanced materials, health, the digital economy, sustainable development and (inter)governmental policy. Our scholarship is at the forefront of poetry and playwriting, global cinema, theology, social and cultures studies, and philosophy and ethics.

In 2019-20 the University had a turnover of GBP261,700,000 with a current endowment fund of GBP95,000,000. Since 2014, the University has invested more than GBP100,000,000 in its estate, with an additional GBP300,000,000 committed through 2029, including GBP75,000,000 in a new combined site for social sciences and GBP38,000,000 to grow enterprise activity portfolios at our Eden Campus (5 miles West of St Andrews).

Our University Strategy 2018-2023 expresses our ambitions for teaching and research across four themes: *World-leading, Diverse, Global, and Entrepreneurial*; it explicitly places all the University's work within the context of *Social Responsibility*. Our balance of teaching and research commitments, available support and development opportunities, creates an attractive environment conducive to world-changing research undertaken by world-leading researchers.

University staff hold key leadership roles within the wider higher education and research communities, including the Vice-Convenor for Universities Scotland and the Chief Scientist (Health) for the Scottish Government. Staff members also sit on the boards of Universities UK and the Scottish Funding Council (SFC) Research and Knowledge Exchange Committee. Amongst our academics, we have the Executive Chair of the AHRC, members of the EPSRC Strategic Advisory Network, the former Chief Scientific Adviser for DEFRA, and members of both the Science Advisory Group for Emergencies (SAGE) and the Scottish Government COVID-19 Advisory Group.

We contribute to the Scottish and UK university sectors through Universities Scotland and Universities UK, and have helped raise the international profile of research across Scottish HEIs through the SFC strategy of research pooling. We participate in 9 of the 11 Scottish research pools, co-founded the Scottish Arts and Humanities Alliance, based at the Royal Society of Edinburgh, and host the Universal Short Title Catalogue (USTC). Our long-standing Chemistry research partnership with the University of Edinburgh, EaStChem, underpins our joint submission to UOA8.

2. Strategy

Institutional research and impact strategy is set by the Office of the Principal and Vice-Chancellor, within the remit of the Vice Principal (Research and Innovation). The Vice Principal (Collections, Music and Digital Content) provides complementary oversight for the University library, and physical and digital collections, while the Assistant Vice-Principal (Provost) has responsibility for the postgraduate community. ED&I policy and implementation is overseen by the Assistant Vice-Principal (Diversity).

The main University bodies influencing our research culture, policy and practice are:

- University Court (overall governing body);
- Senate (providing academic governance and oversight);
- Research Excellence Board (support to schools and wider University);
- Research, Impact and Innovation Committee (including School Directors of Research and Directors of Impact, support services and faculty EDI leads);
- Research Staff Forum (representation for postdoctoral researchers);
- Technician Engagement Group;
- Postgraduate Research Committee.

The research environment of academic schools is sustained and supported by 27 Professional Service units. For research, impact and innovation strategy, support has a coherent core within the remit of Research and Innovation Services (RIS), including: research integrity, ethics and governance; research information systems and policy; research impact; innovation, technology transfer and commercialisation; and open research.

2.1 Achievement of strategic research and impact goals during the assessment period.

During this REF period, our main strategic goals have been to:

1. Invest in new and existing centres of excellence that cross traditional academic disciplines;
2. Establish new facilities that enable ground-breaking research and impact of national and international significance;
3. Extend an active impact culture across the University;
4. Embed the values of ED&I throughout the institution.

Interdisciplinarity at St Andrews seeks to enable challenge-led research and is distinguished by cross-faculty engagement. To realise our goals, we have invested in facilities and a new campus, appointed staff whose research can span traditional disciplines, and funded interdisciplinary PhD studentships.

Our investments in world-class facilities include: the establishment of the state-of-the-art Richardson Research Library for our Special Collections texts (accumulated since the University's foundation in the 15th century), the revitalisation of the Wardlaw Museum, the new GBP12,000,000 Laidlaw Music Centre, a GBP16,500,000 expansion of the Scottish Oceans Institute, and a GBP10,000,000 Centre for Designer Quantum Materials.

A coherent support structure for research and impact now sustains an active impact culture across all faculties. A key component of our strategy is the creation of the Eden Campus, partly funded by GBP29,500,000 from the Tay Cities Deal, and our hub for innovation and sustainability, supporting a strategic commitment to become carbon net-zero by 2035.

The University achieved the institutional Athena SWAN Bronze award in 2018, and 18 of our 19 schools hold Bronze or Silver awards. 'Diverse St Andrews' as a pillar of our University strategy ensures inclusivity is central to all policy and practice developments (see section 3.1).

2.2 Strategic goals for research and impact over the next five years

Our goals for research and impact over the next five years are integral to our Institutional Strategy. Whilst maintaining achievement in our core subjects, we will:

1. Develop six interdisciplinary research priority areas in which we are unequivocally recognised as world-leading and through which we can influence a changing world (see 2.5);
2. Enhance the scale and quality of our international networks and research collaborations, with flexibility to respond to global trends and needs;
3. Nurture diverse and emergent leadership in research and impact, spanning all levels of experience and background, including students, academic, research, and technical staff;
4. Drive an institutional culture shift to increase our capacity for innovation and value creation, and strengthen our engagement with industry and business.

2.3 Enabling and facilitating impact

We support knowledge exchange and impact (KE&I) through a central Research Impact Team and Technology Transfer Centre, who administer funding streams, protect and support translation of intellectual property, and facilitate knowledge exchange. We are signatories of the KE Concordat.

- Our internal KE&I fund has awarded over GBP653,000 for 165 impact projects; this extends and complements GBP1,800,000 allocated to 103 projects through EPSRC and STFC Impact Accelerator Accounts (IAAs).
- Our sabbatical leave policy and promotion process now explicitly includes impact. Since 2016 we have granted 317 research and impact leave requests.
- The Global Challenges Forum has supported a portfolio of 72 Global Challenges Research Fund projects in 49 countries including three PhD scholarships per year, addressing all 17 UN Sustainable Development Goals.
- The University is the main sponsor of StAnza, Scotland's annual international poetry festival.
- St Andrews Applied Research Ltd provides focused oversight and support for our entrepreneurial, spin-out and commercial activities, including innovation at the Eden Campus. The University has a large IP portfolio which generated revenues of GBP5,700,000 for the period 1 Aug 2014 – 31 July 2019.
- Successful spin-outs with significant external backing include Xelect Ltd (genetic selection of high-yield fish broodstock), and Pneumagen which has recently attracted a GBP4,000,000 investment for clinical development of novel COVID-19 treatments.
- In the social sciences, St Andrews have led nine competitively awarded Scottish Universities Insight Institute projects, delivering impact in the public sector, business and the third sector.
- The University annually awards the St Andrews Prize for the Environment to outstanding global environmental projects (USD150,000 annual prize fund).

2.4 Creating an open research environment

The Open Research Working Group sets the strategy for our Open Access (OA) policies and Research Data Management (RDM). The Open Research team in RIS provides technical support, user training (reaching 1500 researchers since 2016) and manages OA publishing funds (GBP200,000/year from UKRI and charities, and GBP30,000/year internal fund).

St Andrews is a sector leader for OA, placed 5th in the 2020 Leiden World Ranking for proportion of OA publications (89.1% in 2015-18). 95% of all our publications in scope of REF2021 OA Policy have achieved compliance. Currently 74% of datasets supported by major funders are publicly available, including 660 in our institutional repository. We expect that all research data will over time be made publicly available wherever possible.

We co-organise Open Research Scotland, are signatories of DORA, and participate in the Forum for the Responsible Use of Research Metrics and several JISC and other OA and RDM programmes.

2.5 Supporting interdisciplinary research

Our University Strategy 2018-2023 identifies six priority areas for interdisciplinary research: *Peace, Conflict and Security; Cultural Understanding; Evolution, Behaviour, and Environment; Materials for the Modern World; Health, Infectious Disease, and Wellbeing; and Sustainability*. Additionally, our Environmental Sustainability Board provides a strategic drive for interdisciplinary challenge-led research.

Strategic seed funding, cross-school appointments, and interdisciplinary research centres and institutes support a broad ecosystem of research at the interfaces of traditional disciplines. An expectation that new research centres should address multidisciplinary research has built exciting new initiatives such as the Centre for Energy Ethics and the Centre for Exoplanet Science (combining Astronomy, Earth Sciences and Philosophy). The Sir James Mackenzie Institute for Early Diagnosis (2019-) will develop new medical technologies, leveraging existing expertise in health informatics and biophotonics.

The cross-faculty St Leonard's Postgraduate College creates an interdisciplinary postgraduate community; initiatives include:

- Introducing Interdisciplinary PhD scholarships (23 funded since 2017); a core objective being to forge new interdisciplinary collaborations, e.g. examining the relationship between dance and imitation, co-supervised in Biology and the Royal Conservatoire of Scotland.
- Formation of partnerships with the Scottish Graduate School of Social Science and the Scottish Graduate School for Arts and Humanities.

2.6 Supporting a culture of research integrity

Since 2014, we have revised and expanded our guidance and policies on good research practice, conflicts of interest and research misconduct. Broad dissemination, coherent web resources and training are building an integrity-aware culture across the institution. New staff and PGR induction includes guidance on research integrity.

The Research Integrity Committee co-ordinates operational activity, with oversight from the Ethics and Research Integrity Assurance Group (including members of Court and Principal's Office). The University Teaching and Research Ethics Committee is responsible for ethical review and approval of funders and research involving human participants, tissues and samples, overseeing the work of School Ethics Committees. The Animal Welfare and Ethics Committee is responsible for ensuring research involving animals is undertaken with the highest standards of animal welfare and legal compliance.

2.7 Supporting research collaborations, networks and partnerships

Global St Andrews sets out plans for UK and international research partnerships, student experience, and academic reputation, supported by a dedicated Global Office. Our collaborative outlook is evidenced by 70% of our science publications in 2019 and 2020 being co-authored by two or more countries (Leiden rankings 2019: 2nd in UK and 21st in the world). Collaborative research, networks and partnerships are supported through strategic initiatives and investments at regional, national and international levels, including:

- University investment of GBP17,857,588 since August 2013, across nine Scottish research pools: a unique Scottish model for building capacity, research excellence and international profile.
- Our partnership with the China Scholarship Council (2015-) currently provides over 120 fully-funded PhD studentships and 10 visiting scholarships.

- St Andrews has been a member of Europaeum (2017-), an association of 17 leading European universities, promoting research collaboration in the Humanities and Social Sciences.
- Strategic partnerships, such as those with key partners Bonn University and Emory University, are developing new research collaborations through seed funding and staff exchanges.
- Our Global Fellowships Scheme provides prestigious awards to enable scholars from around the globe to spend a month collaborating at St Andrews (24 Fellowships awarded since 2019).
- Our new Global PhD scheme funds collaborative PhDs between St Andrews and strategic partners.

2.8 Supporting research engagement with the wider community

Our Public Engagement with Research (PER) team is co-funded by UKRI Strategic Support to Expedite Embedding Public Engagement with Research (SEE-PER), and provides training and support for researchers. We are signatories of the Concordat for Engaging the Public with Research. Highlights of engagement with the wider community include:

- GBP15,000,000 invested since 2014 in venues used extensively for public engagement: the Wardlaw Museum, Laidlaw Music Centre, Byre Theatre, St Andrews Botanic Garden.
- Our PER Team leads the major outreach initiative Cell-Block Science, engaging prison learners with our research (one of ten Falling Walls global winners in Science Engagement, 2020 Berlin Science Week), now a nationwide programme.
- Citizen Science projects, including in Social Anthropology (Woven Communities), History (Scotland's Coastal Archaeology and the Problem of Erosion), Psychology (Dementia), Biology (Bioblitz) and Geography & Sustainable Development (Coastal Rowing).
- We established the Budongo Research Unit (BRU) at Edinburgh Zoo's chimpanzee Budongo Trail enclosure, allowing approximately 800,000 visitors to engage with our active research projects annually.
- The University's MacTutor History of Mathematics Archive website has received 1.5 million pageviews *every week* since 2014.
- The University's podcast project *Promoting Mental Health Through the Lessons of History*, has received 35,000 listens on iTunes alone.

3. People

Our staff are our greatest asset. We aspire to foster an environment that enables all staff and students to engage with intellectual challenges while realising their own potential. For over a decade, we have been signatories of and have met all key principles of the *Concordat to Support the Career Development of Researchers*. In 2020 we became signatories to the *2019 Concordat*. We hold the *European Commission HR Excellence in Research Award* (2014-). Our most recent staff satisfaction survey (2017) indicates that over 90% of staff derive satisfaction from their work at the University.

Within five years, our staff strategy aims to:

- Enhance areas of research excellence and support the development of further interdisciplinary research;
- Develop a pipeline of diverse leadership in priority areas;
- Increase the underrepresented BAME staffing complement through recruitment initiatives;
- Maintain our excellent staff to student ratio;
- Incentivise an entrepreneurial culture through opportunities to reinvest additional income into staff appointments.

3.1 Supporting equality, diversity and inclusion

The '*Diverse St Andrews*' pillar of our strategy underpins our research ambitions. Diverse St Andrews is led by the Principal and the Assistant Vice-Principal (Diversity), a leading researcher in equalities, supported by a Human Resources/ED&I Team. Our structures include a Central EDI Committee, a Race, Ethnicity, Religion & Belief Group, Student Representative Council Equal Opportunities group, and School ED&I Committees.

Inclusivity is central to developing policy and practice, with particular focus on more diverse and balanced leadership. The Principal's senior leadership team comprises 50% women and 50% men. We aim to develop a culture of emergent leadership, spanning a rich diversity of experience and background, including both students and staff. We have reduced our mean gender pay gap from 23.3% in 2017 to 20.7% in 2020. In 2017 we began publishing our annual gender pay gap report, electing from May 2020 to also disclose our ethnicity pay gap and staff and student EDI progress reports.

In 2019 we became a University of Sanctuary, committing to ensure St Andrews is a welcoming, safe and supportive environment for staff and students seeking refuge in the UK. We offer sustainably funded, flexible Sanctuary Scholarships of GBP15,000 each.

We were awarded an Athena SWAN Institutional Bronze Award in 2018; 18 of our 19 academic schools hold Bronze or Silver Awards. To date, over 2,780 staff have completed EDI online training, including modules on Recruitment & Selection, Unconscious Bias, Diversity in the Workplace. We have banned single-sex recruitment shortlists for academic posts, introduced a 'core hours' meetings policy, and opened an on-site children's nursery (2017-) offering preferential rates to staff and students.

We are a 'Carer Positive Employer', awarded 'Exemplary' status in 2020. The University has supported 84 applications to our Caring Fund since 2014, which offers up to GBP1,000 annually per colleague for caring responsibilities, enabling them to attend key events and conferences. An EDI Research Fund (2018-) has awarded GBP44,000 matched funding for small research projects.

We share knowledge, good practice and build diverse leadership capacity through: Aurora Women's Network (2014-); Early Career Women's Network (2017-); Staff BAME Network (2018-); Beyond Belief- discussing spirituality group (2018-); Staff Carers & Parents Network (2019-); Staff LGBTIQ+ Network (2016-); Women in Science St Andrews (2018-); Women in Computer Science society (2018-); Senior Women in St Andrews (2018-); Staff with Disabilities Network (2020-).

We are signatories of the LGBT Charter (2013-); Stonewall Diversity Champion (2015-); membership of the Advance HE Race Equality Charter (2015-); Business in the Community Race at Work Charter (the first university signatory in the UK, 2019-).

EDI has been central to all processes of our REF submission, in full compliance with our REF 2021 Code of Practice. An Institutional REF Equality and Diversity (IRED) Review Group, led by the Assistant Vice-Principal (Diversity), has considered and made recommendations on REF decisions or processes that may have equality and diversity implications for staff. These include determining research independence, staff circumstances, appeals, overseeing our Institutional Equality Impact Assessment and EDI training, particularly for staff involved in REF decision making. IRED has ensured REF appeals processes are clear and independent of our Research Excellence Board. A total of 665.0 FTE staff have been submitted across 21 UoAs (figure 3.1).

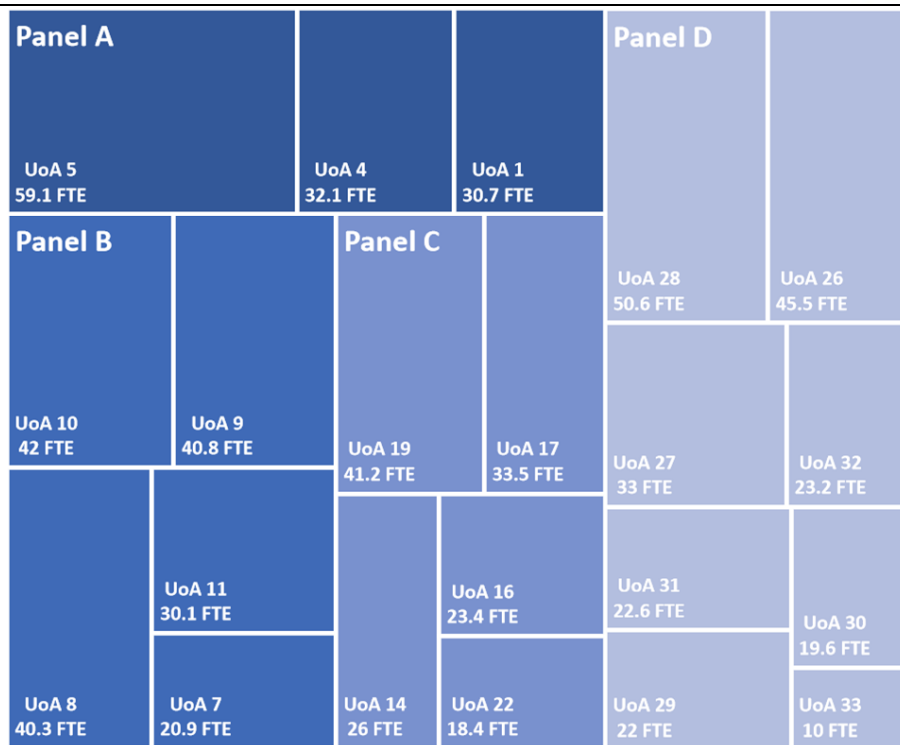


Figure 3.1: Submitted staff by UoA

3.2 Staff recruitment, development and progression

(i) Staff recruitment

Since 2014 we have recruited 876 new staff to research, and to research and teaching contracts, shown by age and gender in figure 3.2. Our recruitment processes are designed to secure the broadest possible pool of applicants and shortlisted candidates; for example, in May 2020 we became the first Scottish HEI to advertise posts in the Black Female Professors Forum. Interview panels are trained in recruitment procedures and unconscious bias to ensure a standardised application experience. The Master (Deputy Principal) and Faculty Dean are involved in all permanent faculty appointments (with senior externals also included on professorial appointments); the percentage of female faculty appointments has steadily increased since 2015.

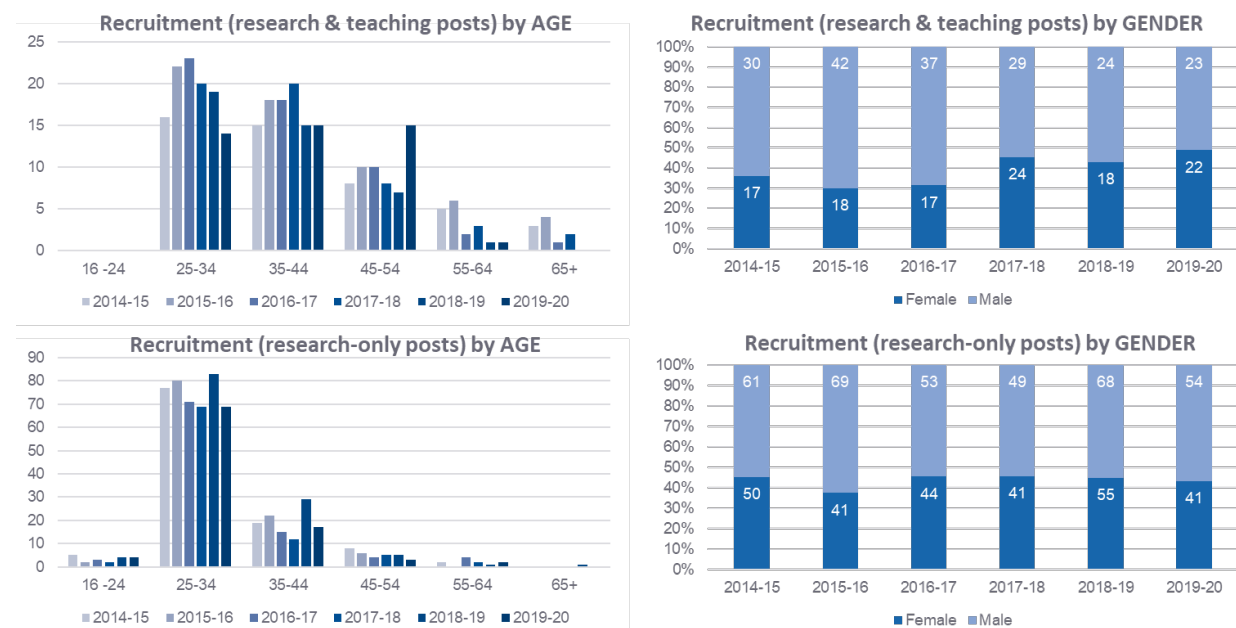


Figure 3.2: Age and gender profile of recruited staff

(ii) Staff development

Since 2011, the Organisational and Staff Development Services (OSDS) and Centre for Educational Enhancement and Development (CEED), have provided a comprehensive portfolio of professional support to staff and PGRs including:

- *Staff induction programmes* for all new colleagues
- *Contract Researcher Skills for Research Staff* informed by Vitae’s Researcher Development Framework.
- The *Passport to Research Futures* focuses on career development and employability.
- *Public Engagement Portfolio* training available for all staff and PGRs.

We pride ourselves on our extensive mentoring programmes:

- New colleagues are offered a school-based academic mentor.
- Our **Teaching, Research and Academic Mentoring Scheme**, cofounded with the University of Dundee, has expanded to include Glasgow School of Art, Abertay University, the James Hutton Institute and Trinity College Dublin.
- The **Elizabeth Garrett Mentoring Programme** is sponsored by the Principal and provides support for senior academic women, with over 60 successful mentoring partnerships to date.
- The **Coaching Service for Staff**, co-founded in 2014 with the University of Aberdeen, has provided coaching to 122 staff across institutions.
- Since 2014, we have supported 113 staff on Advance HE leadership development programmes including **Aurora** (female staff) and **Diversifying Leadership** (BAME staff).

(iii) Staff progression

All staff undergo annual reviews with their line manager. In 2016-17 our academic staff promotion process was revised to provide balanced recognition of teaching, impact, research, and service, with a new promotion pathway for fixed-term research staff. The criteria are published on the University website. The number of promotion applications, and percentage of successful applicants, have each increased since 2014; women applicants’ success rates exceeded men’s across all but one year since 2014 (figure 3.3.)

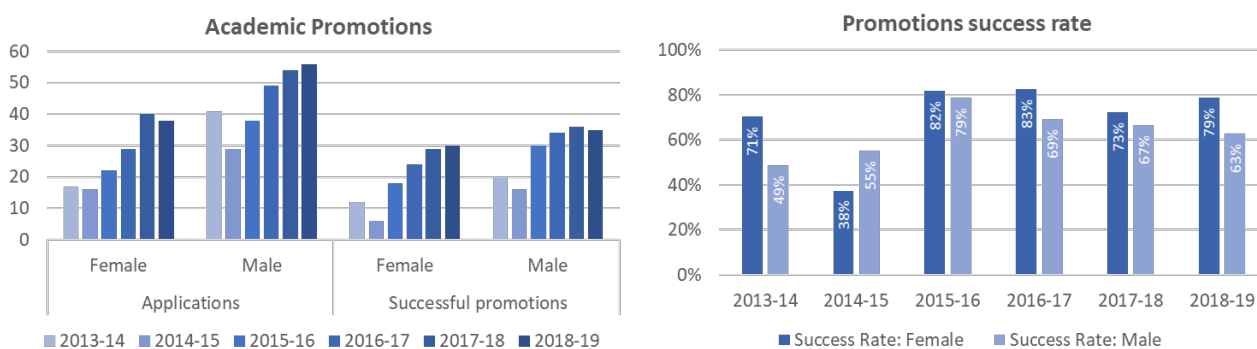


Figure 3.3: Academic promotions

Fixed-term research staff and technicians play a crucial part in our research culture. A bridge funding scheme between externally-funded contracts is available. We are signatories of the Technician Commitment Action Plan, which tracks the career progress of the technical workforce. Regular high-level dialogue with technician staff is maintained through our Technician Engagement Group, chaired by the Vice-Principal (Research and Innovation).

Since 2014 the number of professors and senior academic management (P+ASM in the figures) has grown from 207 to 251 FPE. Figure 3.4 shows the current make-up of professors and senior staff by protected characteristic, with comparisons to the equivalent cohort in 2014-15 and to all

staff submitted to REF 2021. Female staff in these senior posts have notably increased from 17.9% to 24.7%.

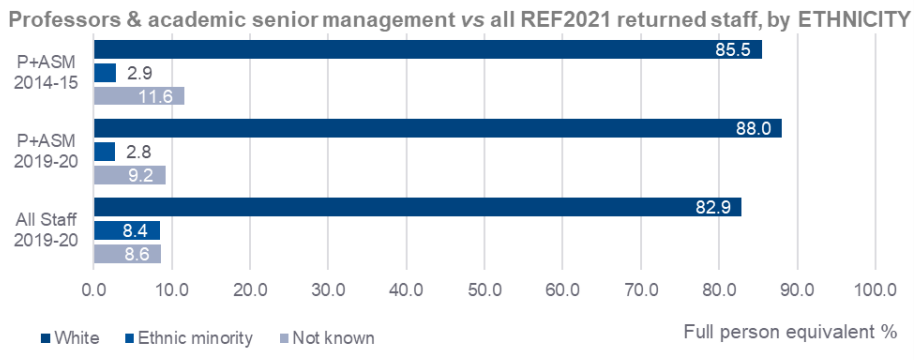
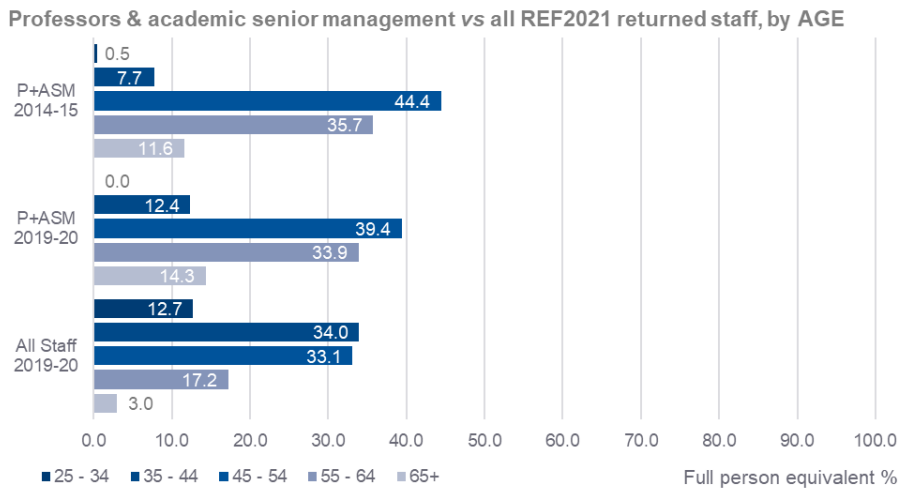
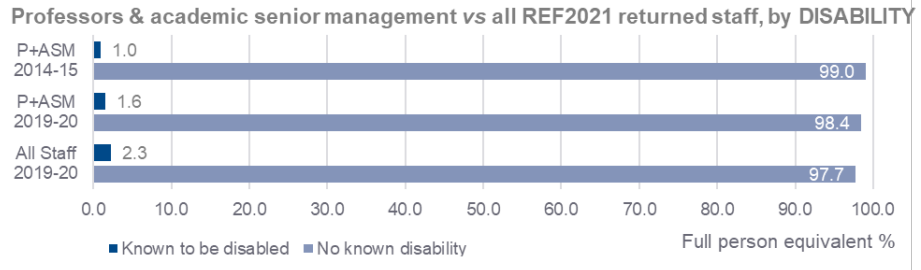
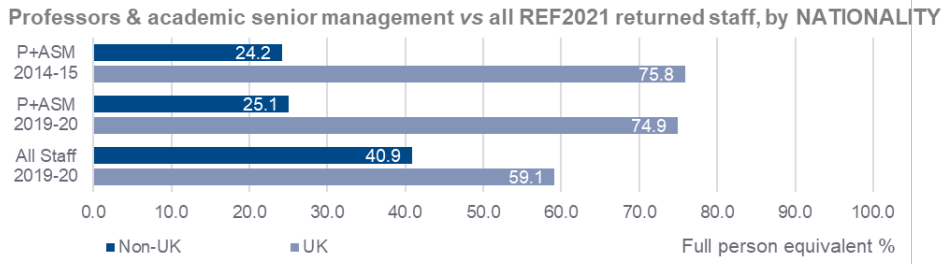
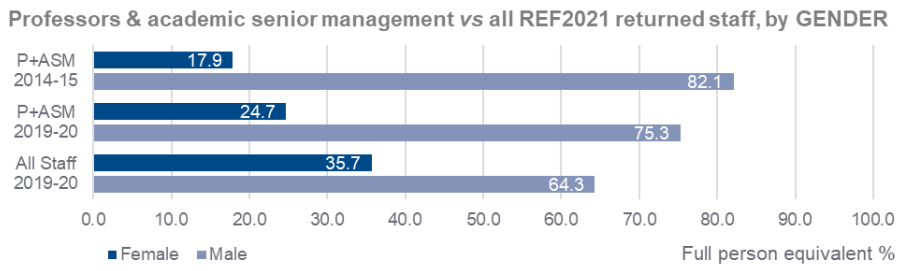


Figure 3.4: Staff by protected characteristic

3.3 Postgraduate Research Students (PGRs)

All PGR students are members of the St Leonard's Postgraduate College, led by the Assistant Vice Principal (Provost). The College enhances the postgraduate experience by fostering a community through social and academic events, whilst providing training, and supporting networking and interdisciplinarity. In the Postgraduate Research Experience Survey, St Andrews ranks in the top quartile of the sector for overall satisfaction (2017). Our latest PGR completion rates are 98% (2018-19 cohort).

Since 2014, we have introduced new PGR programmes including the Engineering Doctorate (EngD) in Computer Science and a Doctorate in Professional Practice (DProf). We have created 23 interdisciplinary scholarships, introduced a funded postgraduate pathway for Widening Participation students, invested in diversity with fully-funded scholarships for students from the OECD DAC list, and are fostering strategic international collaborations via our Global PhD scholarships. In 2019, we introduced excellence-based Handsel Postgraduate Research Scholarships for international students. Since 2014, PGR funding (combining internal, research councils and other funders) averaged GBP13,000,000 per year. The University's commitment to PGRs has led to a 20% increase in students starting doctoral studies since 2015.

PGRs have access to the Professional Skills Curriculum (endorsed by The Institute of Leadership & Management.) Schools provide internal programmes of discipline-specific workshops delivered by academic staff, and support PGRs to attend external programmes, including pan-Scottish collaborative graduate schools. All starting PGRs complete Training in Good Academic Practice and undertake relevant training in line with the Vitae's Researcher Development Framework. All PGRs have a comprehensive annual progress review within their school, including an opportunity to discuss supervisory arrangements with independent reviewers. PGR progress reviews are overseen by the PGR Pro Dean.

3.4 Staff and student well-being

The University supports work-life balance through a flexible working policy for all. We have strengthened our wellbeing commitment across the institution, as evidenced by our Bronze (2014), Silver (2016) and Gold Awards (2018, 2019) from the Scottish NHS 'Healthy Working Lives Award'. In 2020, our 'Exemplary' Carer Positive Award cited our Coronavirus Wellbeing webpages as demonstrating transparent support as a progressive employer for carers.

Since 2014 we have developed strategies for Mental Health and Suicide Prevention. We established a Mental Health Task Force to implement our Action Plan, a Mediation Service and have undertaken a Wellbeing Review. Our OSDS Wellbeing and Engagement Group, alongside the '*Passport to Health and Wellbeing Excellence*' programme, regularly engages St Andrews staff and students with information, activities and services across the spectrum of wellbeing, including a mental health counselling service. Staff can access any of these services through dedicated Human Resources and Occupational Health advisors, whilst students have access to an extensive Advice and Support Centre. Postgraduate students with disabilities are offered a peer mentor to support their transition to the University; we actively support such students to apply for the Disability Students' Allowances (2.7% of our PGR students were in receipt of DSA in 2018-19).

4. Income, infrastructure and facilities

4.1 Institutional strategies and supporting activities for generating research income.

Research income generation takes place in a collegial environment where punitive targets are avoided and researchers are informed, encouraged and assisted to secure external funding. The University promotes and facilitates engagement with a diverse range of funders (including UKRI, charities, industry, government, international sources and by philanthropic support). We aim to grow the proportion of industrial funding within the *Entrepreneurial* pillar of our strategy.

Applications and awards data are shared in monthly institutional updates. A proportion of overheads are returned to school operational budgets for flexible spend. Matched funding for capital equipment, and to leverage major external awards, is approved by the Vice Principal (Research and Innovation), supplementing annual School budgets.

Supporting activities include:

- A Research Business Development and Contracts team proactively identifies and disseminates targeted funding opportunities to schools and directly to relevant researchers, and guides ECRs through the funding process;
- Finance Advice and Support is structured into dedicated school teams, providing a coherent pre-application to post-award service;
- The Passport to Research Futures training programme includes a research funding module;
- Regular paid research and impact sabbaticals for academic staff create time to develop applications;
- Our Development Unit raises philanthropic support, with research priorities including scholarships and major facilities.

4.2 Infrastructure and facilities supporting research and enabling impact

Professional Services units support all aspects of our research operations and culture (see Section 2), including funding, safety, ethics, training, OA and open data which support good research practice and reproducibility of research. Notable facilities and infrastructure include:

- The University Library belongs to the Research Libraries UK group of research-intensive libraries, with the Richardson Research Library providing workspace exclusively for staff and postgraduates and a special collections reading room. Significant research material includes manuscript and archival holdings; a major photography collection including historic photography; extensive rare book holdings reflecting the Library's status as a copyright library in the 18th and early 19th centuries; and three recognised museum collections of nationally-significant material;
- We host the Universal Short Title Catalogue (USTC), a searchable catalogue of European books published until the end of the 16th century. Founded in 1997 at St Andrews, it now holds 4,000,000 early print items and is a major resource for literary scholars worldwide;
- World-class facilities for materials research, these include the GBP10,000,000 Centre for Designer Quantum Materials, housing Ultralow Vibration Laboratories for atomic-scale imaging of quantum materials; an advanced suite of Magnetic Resonance spectrometers; an Electron Microscope Facility and two Cleanrooms for optoelectronics and nanofabrication;
- The Scottish Oceans Institute houses a refurbished Marine Laboratory, and hosts the Sea Mammal Research Unit, and the executive office of the Marine Alliance for Science and Technology for Scotland (MASTS). This provides a unique facility within the UK for research on captive marine mammals and a state-of-the-art aquarium enabling reproduction of any oceanic conditions;
- Computational research across our science schools is supported through a GBP1,330,000 upgrade in our University High Performance Computing facility Kennedy, with 3520 cores, 18.7 Tb memory and 400 Tb of storage space;
- Since 2017, we have invested GBP1,750,000 in the University's Wardlaw Museum for new exhibition and research studio spaces. Together with the Bell Pettigrew Museum

and Museum Collections Centre, this provides researchers outstanding facilities to study collections material and actively engage wider audiences;

- The Laidlaw Music Centre is a new GBP12,000,000 state-of-the art music centre, offering practice, rehearsal, recording and performance spaces for impact events;
- The Biomedical Science Research Complex houses a suite of biophotonics laboratories, two high containment laboratories, mass spectrometry and proteomics facilities. One of its two main buildings suffered a devastating fire on 10 February 2019 displacing 100 researchers. Currently housed in custom-built modular laboratories, they will return to the restored and upgraded facility in 2022;
- During the next REF period, the University will invest GBP75,000,000 to develop the former Madras College School site in central St Andrews to create a Social Sciences hub.

4.3 Shared and external facilities

Our Eden Campus opened in 2020 to enable new research and industrial links in sustainable energy and to provide a nucleus for increased innovation and entrepreneurship. To achieve these goals, the UK and Scottish Governments, Fife Council and the University are jointly investing over GBP29,500,000 within the *Tay Cities Deal*. The Eden Campus will host the Scottish Government Hydrogen Accelerator, the GENESIS Facility for industrial research and development in energy storage and conversion, and a mix of science- and technology-based industry and commercial activity. This ecosystem will include an Enterprise Centre (joint venture with Fife Council) supporting local business and an Entrepreneurship Centre targeting spin-outs from staff, students and the local community. Business management and direction of University spin-outs and commercial enterprise is facilitated through our wholly-owned subsidiary, St Andrews Applied Research Ltd.

Other shared facilities that extend the reach of our research and impact include:

- The Byre Theatre - a collaboration with Fife Council– allowing a programme of creative, literary and academic events, and provides a venue for conferences and summer schools;
- The Living Links field station based at Edinburgh Zoo combines research of primate behaviour with public engagement;
- Three robotic telescopes, located in Chile, South Africa and Australia within the Las Cumbres Observatory Global Telescope Network, gives the University Observatory a global footprint, and provide competitively-awarded observing time to external astronomers.

4.4 Equality and diversity in research funding and access to scholarly or operational infrastructure.

St Andrews is a welcoming, safe and supportive environment for scholars (Section 3). Our 'Code of practice for the employment and management of research staff', ensures compliance with employment law, and comprehensive equality, diversity and family friendly policies including flexible working, workplace adjustments, training and support for Access to Work funding applications for staff with disabilities.

The Caring Fund provides support for researchers with caring responsibilities (Section 3.1). Our 'Core Hours' policy ensures activities supporting research, such as seminars, occur between 10am-4pm. Beyond nursery provision, we routinely provide Sports Centre-led activities and mobile creches during school holidays and closures.

Internal funding and demand management panels for external initiatives, such as Fellowships, are gender-mixed and review awards for protected characteristics. We undertake high level post-award monitoring of external awards by gender, and Planning offers dedicated EDI statistical analyses for Schools.