

<p>Institution: Aberystwyth University</p>		
<p>1. Context and mission</p> <p>Aberystwyth University (AU) is a research-led institution whose mission is to ‘deliver inspirational education and research in a supportive, creative and exceptional environment in Wales’. The oldest university in Wales, AU has a distinctive role in Welsh culture and society that is combined with an international outlook, a proud history of research and a commitment to innovation. Several of its academic units (e.g. Art, Geography, Law, International Politics, Maths and Physics) were established over 100 years ago; some reflect amalgamations undertaken 10-20 years ago and are now mature units (e.g. IBERS, Business); while current initiatives to develop nursing and veterinary sciences reflect renewed academic vitality.</p> <p>In the assessment period, AU has navigated systemic challenges from changing funding regimes and fluctuating student recruitment. Under new leadership from 2017, it implemented a process of restructuring to ensure institutional sustainability, which is now complete, followed by a programme to reinvigorate the research base. AU’s <i>Strategic Plan 2018-23</i> reaffirmed the centrality of research with impact as a core institutional objective, supported by the 2019 <i>Research and Innovation Strategy (R&IS)</i>. These policies were matched by investments in new staff and facilities (including the AberInnovation campus, Cat2 and Cat3 containment laboratories, and the National Spectrum Centre) (Section 4); strengthened support for research and researcher development (Section 3); and new initiatives to promote impact (Section 2).</p> <p>At 31 July 2020, AU had 434 research-active staff (289 Teaching & Research, 145 Research Only); with the gender balance shifting from 33% female researchers in REF 2014, to 39%. 9074 students (273 PGR) were registered for session 2019/20. Research at AU is organised through 17 academic departments, all of which are research active. Most are small, with 13 having <20FTEs and only two >30FTEs. Since 2018, these departments have been clustered into three Faculties (Table 1), which provide strategic oversight and support for research, impact and innovation. Each Faculty has a research committee with unit-level representation, chaired by an Associate Dean who sits on both the Faculty Executive and the AU Research Committee. Institutional-level strategic leadership for research is provided by the University Executive and the PVC (Research, Knowledge Exchange and Innovation). The AU Graduate School provides research training for Postgraduate Researchers (PGRs) across Faculties and has an expanding role in researcher development for Research Assistants and Associates, Research Fellows and Early Career Researchers (ECRs). A number of professional services and non-academic units support research and impact, notably the Research Business and Innovation (RB&I) office.</p>		
<p>Faculty of Arts and Social Sciences</p> <ul style="list-style-type: none"> • Art • Education • English & Creative Writing • History & Welsh History • International Politics • Law & Criminology • Modern Languages • Theatre, Film & TV • Welsh & Celtic Studies 	<p>Faculty of Business and Physical Sciences</p> <ul style="list-style-type: none"> • Business School • Computer Science • Information Studies • Mathematics • Physics 	<p>Faculty of Earth and Life Sciences</p> <ul style="list-style-type: none"> • Geography & Earth Sciences • Institute of Biological, Environmental and Rural Sciences (IBERS) • Psychology
<p>Table 1: Organisation of academic units</p> <p>Latest TRAC data reveals that 46% of research-active staff time was devoted to research. All independent researchers are returned to REF 2021, following on from REF 2014, when AU submitted 76% of eligible staff, placing it in the top third of all UK universities.</p>		

The Wider Context

Education is a devolved responsibility in Wales, and AU works within the strategic priorities for research identified by the Welsh Government (WG) and the Higher Education Funding Council for Wales (HEFCW) as well as wider UK agendas. AU research responds to and seeks to influence WG policy in devolved sectors including health, environment, agriculture, social care, culture and economic development, and is actively engaged in analysis of developing Welsh law and the evolving political system. Additionally, Wales has its own national institutions and agencies with which AU works, including for example the Learned Society of Wales (LSW), National Library of Wales, and Natural Resources Wales, as well as its own national media. HE policy in Wales has increasingly diverged from that in other parts of the UK, including a WG emphasis on the 'civic mission' of universities and the alignment of research and innovation with WG 'smart specialisation' priorities. Recently, WG has moved to address the historic underfunding of research in Wales, identified in the Diamond (2016) and Reid (2018) reviews, through the Strengthening the Research Base initiative (2019) and the Research Wales Innovation Fund (2020-3), though the timing of these investments has limited their impact in the REF 2021 period. AU has also actively engaged with the WG's Sêr Cymru initiative to attract world-class talent to Wales, securing investment in Chairs in Bovine Tb and Earth Observation, and in 15 Research Fellows.

Research, innovation and engagement activity at AU is further informed by its geographical location. First, AU is located in an economically lagging region that until 2020 qualified for the highest level of support from EU Structural Funds. The local economy is dominated by SMEs (79% of employment and 62% of turnover) and in the absence of large firms AU is itself a key anchor institution in the region.

Second, the Mid Wales region is predominantly rural, reflected in the strong profile of agricultural, environmental and rural studies research across several units in AU and its estate. Recent investments in veterinary research and rural health, and initiatives in rural innovation networks, respond to the needs of the rural economy and society, and complement existing research and enterprise vehicles in areas such as biorefining and plant phenomics.

Third, AU is situated in a majority Welsh-speaking area and is committed to a bilingual research environment. This is reflected in AU research on minority languages and culture not only in Wales but internationally, and in contributions to language policy. AU is at the forefront of the emerging multi-disciplinary field of Wales Studies, as exemplified by the range of its research cited in the LSW's *Wales Studies* report (2020). Equally, AU research is internationally engaged. Fields such as international politics and global environmental change are long-established strengths, and staff are encouraged to participate in international fieldwork, meetings, networks and projects.

2. Strategy

The 2012 AU Strategic Plan set out ambitious targets for research, including postgraduate numbers and grant capture, a new focus on interdisciplinarity, and initiatives to strengthen knowledge exchange. Key developments to support research and impact introduced as part of this strategy included:

- two 'Professors of Public Engagement' to create a more focused approach;
- a bespoke postgraduate study centre;
- twice-yearly central monitoring of research under a new Professorial-level post reporting to the PVC(R);
- support for international research collaboration by establishing a Brussels office with other Welsh HEIs, managed by AU;
- core funding for Inter-Disciplinary Research Centres (IRCs), leading by 2020 to support for 10 IRCs, engaging staff from 11 departments and all 3 Faculties

Full implementation of the strategy, however, was impaired by reduced student numbers affecting institutional income, and changes to HEFCW funding including the withdrawal of

Innovation and Enterprise funding in 2014. Institutional sustainability necessitated a temporary retrenchment of some research activity, namely reduced institution-level support for research and research activities primarily encouraged and enabled at unit level. Pressures impacted on research capacity, especially in smaller units, although the maintenance of research activities demonstrated the resilience of the research environment.

In 2017, AU began to re-prioritize research at institutional level, articulated in AU's *Strategic Plan 2018-23*. A Sustainability Implementation Plan (SIP) consolidated staff numbers to ensure financial stability, whilst maintaining the breadth of research activity. The 2019 *Research and Innovation Strategy (R&IS)* outlines a common vision and an explicit and integrated approach to research and innovation across the institution for the first time, and articulates five principles which will underpin its research environment:

1. The active encouragement of ambitious, entrepreneurial research that challenges existing approaches and knowledge;
2. The centrality of research, impact and innovation to the University's mission;
3. A coherent research-led academic environment, where research informs teaching and is integrated into the work of support departments;
4. To be more inclusive in research;
5. And to collaborate with external partners, in Wales, the rest of the UK and globally, both in generating research and in passing on the benefits of our research through impact and innovation.

The accompanying Action Plan has 35 targets to be met by 2024, guiding AU into the next REF assessment period. However, the R&IS has already had an impact in strengthening the research environment in the final part of the REF 2021 period, including the reintroduction of centrally funded competitive cash schemes to support research (worth over £500k p.a.) and initiatives to enhance ED&I (e.g. the Women in Research Network).

The Faculty structure has foregrounded research, through their roles in promotion and oversight of research and impact, of equality of opportunity in research, and of interdisciplinarity. The latter complements the IRCs, initiated earlier in the REF 2021 period, and targeted initiatives such as the ESRC-funded Transformative Social Science programme (2014-18) that supported capacity building in four interdisciplinary networks. The R&IS will further promote interdisciplinarity through two new programmes on 'Rural Futures' and 'The Lives We Want', consolidating AU research excellence in these areas.

Externally, formal collaborations with other Welsh HEIs in the early part of the REF 2021 period through AU's Strategic Alliance with Bangor and consortiums (e.g. Climate Change Consortium for Wales), ceased with the end of direct HEFCW funding and retrenchment. Individual collaborations have continued (e.g. through National Research Networks), such that AU is well-placed to respond to the Universities Wales 2020 *Strength in Diversity* report recommending greater research collaboration within Wales. AU additionally collaborates with institutions in Wales and England in UKRI DTPs, and is committed in the R&IS to developing long-term international sustainable strategic research partnerships with Universities in both OECD and DAC-list countries. Core funding from GCRF has already allowed AU to develop strategic international research collaboration with partners in LMICs (e.g. University of Namibia), while success in Horizon 2020 enabled projects with 279 Collaborating Institutions and 37 Collaborating Countries. Scopus data suggests that 54.6% of AU research outputs included international collaborations.

Sustaining and Developing Impact, Innovation and Knowledge Exchange

During the assessment period, AU has introduced mechanisms to facilitate and build capacity for effective knowledge exchange and achieving research impact, including: competitive schemes for planned semester-long impact leave, short-term responsive impact leave, and travel and subsistence to support impact; training and peer-to-peer sharing to enhance impact, including engagement cafés; and two annual awards to recognise outstanding achievements in research

impact. Professional support for impact has been increased from one to three Research Impact Officers and a new Impact Support and Data Assistant post. In response to the Diamond and Reid reviews, AU received an additional £687k from HEFCW for pump priming impact and innovation activities in 2019, followed by further funding for innovation and impact worth over £870k p.a., and in 2020 AU agreed to the principles of the Knowledge Exchange Concordat.

These initiatives have been further supported by actions focused on three specific target audiences. In accordance with our strategic mission, these focus on Wales, but extend beyond to the UK and internationally, with a recent GCRF-inspired focus on LMICs.

First, the impact of AU research on public policy has been assisted by a Framework Agreement with the Welsh Senedd Research Services and, in the early REF 2021 period, as a partner in the Public Policy Institute for Wales. AU representation on bodies such as the Ceredigion Public Services Board and Environmental Platform Wales facilitates knowledge exchange and identifies opportunities for impact; and developments such as the Centre of Excellence in Bovine Tb and Centre for Excellence in Rural Health Research have responded to public policy needs.

Second, knowledge exchange with industry and business has been facilitated by a team within RB&I. Support for start-ups includes training, workshops and competitively-awarded funding. New facilities include the £40.5M investment in AberInnovation which connects AU research with companies in the biotechnology, agritech and food and drink sectors; VetHub1, which engages with industry to provide new diagnostics and vaccines for animal health; and AU's partnership with Qinetiq in the National Spectrum Centre that will develop commercial applications in radio spectrum technology. Between 2014 and 2020, AU leveraged >£50M in EU Structural Funds for SME engagement, and >60 postgraduate research awards joint with businesses and organizations in the West Wales and the Valleys region.

Third, AU's civic mission is reflected in its commitment to public engagement. AU routinely organises events programmes at major national festivals including the National Eisteddfod, Urdd Eisteddfod, and Royal Welsh Show, for the ESRC Festival of Social Science, and National Science Week, as well as public lectures, panels and exhibitions. Developments underway include: collaboration with the Hay Festival; a week-long annual Festival of Research; a series of public lectures designed to align with our Strategic Equality Plan by emphasising race and gender; investment in digital technologies to enable greater community access. AU hosts a local BBC studio. It's Arts Centre and galleries provide opportunities for showcasing AU research to the public, and the c.£30M redevelopment of its iconic Old College building will significantly add to civic mission capacity.

Open Science, Research Ethics and Research Integrity

During the assessment period, AU has developed an open access policy with a mediated deposit process for all output types; strengthened procedures for research ethics; signed the Declaration on Research Assessment (DORA); and has approved increased resources for research integrity. Final author manuscripts are uploaded through the AU CRIS (PURE) for archiving and 'green' OA. UKRI funding and JISC agreements with publishers enable gold OA. As a result, 78% of AU's published UKRI articles are open access. AU's research data management service ensures the FAIRness of shared datasets. DOIs can be assigned for content published through the institutional repository. Researchers, including PGRs, are trained on the importance of open research, open access, and research data management, while best practice is shared and collaboration promoted. All staff are encouraged to register for ORCID, and in 2020 AU agreed a policy on the responsible use of metrics to ensure the open and transparent use of such indicators.

Research ethics review processes have been improved, with a mandatory requirement for ethics review of all research proposals prior to submission, using an online assessment form introduced in 2014. Governance has been strengthened with three specialist panels (for research with animals, field and desk-based research involving human participants, and NHS-related research), reporting to a University Research Ethics Committee chaired by the PVC(R),

which also develops guidelines informed by national and international standards. This Committee reports to Senate and provides an annual report to the University Council's Governance and Compliance Committee.

Research integrity is promoted through institutional-level policies, processes, training and support, including due diligence checks. These are managed by RB&I, which receives additional support through membership of the UK Research Integrity Office. AU is firmly committed to the principles found within the *Concordat to Support Research Integrity*, and our annual statement on meeting its principles is publicly available. Recognising the increased demands in this area, however, and the need to maintain the impartiality of monitoring, the 2019 R&IS commits AU to establishing a new Research and Integrity Office with additional staffing in 2021.

Training on good research practices is a requirement for all research staff, and project commencement meetings cover compliance, financial management, impact and engagement planning. All staff complete training in equalities, unconscious bias and GDPR; and Data Management Plans are required for all research proposals prior to submission, covering mechanisms for data protection and security, as well as measures to facilitate open data, interoperability and the reproducibility of research.

3. People

AU was one of the first universities to receive an HR Excellence in Research Award (2010), which was successfully retained in 2019. Our new (2020) People Strategy reflects the renewed emphasis on the centrality of research with four key dimensions.

1. *Supporting Staff and Career Development*

To ensure high quality research and impact, staff discuss appropriate targets and development needs annually with their research managers through the Personal Research Plan (PeRP). This forms part of the broader Effective Contribution Scheme, overseen by line managers. AU has also introduced a mechanism of mentoring and target setting so that staff on T&S contracts can move to T&R, complementing existing procedures for staff on T&R to move to T&S.

AU signed the revised Concordat to Support the Career Development of Researchers in January 2020, including a commitment to provide each researcher with at least 10 days p.a. for development. We have reviewed structures and processes to improve agility, supporting staff at all career stages. In particular, career development for ECRs is supported through mentoring, ECR 'champions', the inclusion of research in AU's PGCTHE programme, and targeted capacity-building activities, including an annual 'sandpit' for ECRs to access funding to develop new research projects. AU additionally revised its Academic Promotions Scheme in 2020 to adopt a more informed approach to research that can better motivate, recognise and reward research performance.

2. *Staff Time and Resource for Research*

In the REF 2021 period, AU has introduced a Workload Allocation and Management Model (WAMM) to achieve greater transparency and balance in staff capacity for research. Staff on T&R contracts have a standard allocation of 550 hours for research p.a., with flexibility built in (e.g. for research grant awards, or for when a member of staff is on research leave). The progressive introduction of WAMM, now complete, allowed periodic reviews to monitor and address unintended gender imbalances.

AU has introduced an institution-wide Research Leave scheme, enabling equality of opportunity in research by replacing previous unit-level arrangements with standard procedures and entitlements. The policy covers all T&R staff, on a contract 0.2 FTE or greater, and can be accelerated for ECRs.

3. Research Students

AU has a vibrant Graduate School supporting the development of PGR students across all Faculties. The quality of PGR training is reflected in AU membership of AHRC, BBSRC and ESRC DTPs and the EPSRC CDTs for Diamond Science and Technology and for AI, Machine Learning and Advanced Computing. AU has directly invested in PGR studentships through its ABERDOC competition, open to all subject areas and including President's Award's for international students. Additional funding for PGR students has come in the REF 2021 period from the Knowledge Economy Skills Scholarships (KESS) programme, the Coleg Cenedlaethol Cymraeg, and industry.

PhD students are required to complete central training provided by the Graduate School, including a compulsory module on ethics and data management. This is complemented by discipline-specific training in units. The Graduate School additionally organises transferable skills development and careers workshops throughout the year, and an annual Postgraduate Conference. Quality assurance for training is provided by an External Examiner and by Research Council validation.

PGR progress is monitored by units through biannual reports and interviews at key stages, reporting to an institution-level process for independent scrutiny and analysis. All PGR students have a supervisory team with at least two supervisors, with an increasing number of interdisciplinary projects drawing supervisors from multiple units. Supervisors must complete regular training provided by the Graduate School, and training is also required for viva chairs.

4. ED&I

AU's Strategic Equality Plan (SEP) sets out its continued commitment to diversity, equality and inclusiveness by:

- raising awareness and senior-level 'buy in';
- diversification of the staff and student body;
- ensuring equality in processes;
- training and mentoring;
- closing staff pay and student attainment gaps.

To facilitate the application of these principles to research, ED&I has been added as a standing item for University Research Committee meetings, all units have an equality champion, and the Women in Research Network reports to the University Research Committee. Since 2019, the PVC(R) has instituted regular meetings with equalities groups, has taken Executive lead for BAME issues given the widespread sectoral concerns on BAME in research, and meets on a scheduled basis with the University's Diversity and Inclusion Manager.

AU was in the Top 100 of the Stonewall Workplace Equality Index 2018 and 2019, and as a Stonewall Diversity Champion, is preparing for resubmission in 2021. From 2014 to 2019 the University held an institutional Athena Swan bronze award and is working on the next submission. AU is accredited as a Disability Confident employer and has introduced networks for BAME, LGBTQ, and Disability and Wellbeing. We are committed to strengthening capacity for, and improving gender balance in, research leadership. We co-fund the innovative Welsh Crucible scheme to develop future research leaders, with 24 AU researchers (13 female) participating in the REF 2021 period, and in 2020 launched a mentoring programme for female academics (28 currently enrolled).

Linguistic equality is part of diversity in Wales, and the University actively promotes the learning of Welsh amongst staff, 23% of whom self-identify as Welsh-competent. AU's Welsh Language Standards require opportunities for research subjects and event attendees in Wales to participate in Welsh, and for bilingual communication with research participants and with the public, supported by the Centre for Welsh Language Services. Welsh medium research is supported by the WG-funded Coleg Cymraeg Cenedlaethol, with a number of AU staff contributing to the Coleg's activities, including editing its multi-disciplinary journal *Gwerddon*.

The Coleg's support to AU of c.£60k annually, enables AU to develop the Welsh language research capacity of staff and research students, including funding for 13 Welsh-medium PhD scholarships across 11 subject areas since 2014.

Consideration of E&DI in staff recruitment has been strengthened, including unconscious bias training for panel members and positive action statements on job adverts. Of particular note, the expansion of research-only staff numbers in the REF 2021 period has been accompanied by an increased proportion of female staff (39%, up from 33% in 2014), and an 88% increase in women in senior grades.

In developing the REF Code of Practice (COP), meetings were held by the AU Director of Research Excellence and Impact with each protected group, and an additional series of meetings were held with the Women in Research Network. These directly informed and influenced the development of AU's COP. The University's REF Submission Group, chaired by the Vice-Chancellor, receives data on equalities and diversity relevant to REF. The REF Submission Group has been proactive in ensuring diversity- for example, by requiring unit-level REF reading committee membership to reflect the underpinning unit's diversity representation.

4. Income, infrastructure and facilities

Infrastructure support for income generation, research and impact

Increasing research income is an institutional KPI. Support for applications is provided centrally by a dedicated team within RB&I, who are also proactive in matching funding calls to academic staff, in organising briefing sessions, in providing training for applicants (especially ECRs), and providing post-award support. As part of AU's research renewal, a University Research Fund (annual budget £100k) was re-established in 2018 principally aimed at pump-priming grant applications. The new Faculty system has allowed more focused subject-level support within academic units and each Faculty appointed an Associate Dean for Research, Knowledge Exchange and Innovation charged with encouraging and supporting grant applications. As a result, the majority of units submitted increased their grant capture over REF 2014.

Research and impact is supported by robust monitoring designed to encourage individuals, advise managers, and ultimately to promote quality research and impact. It begins with individual PeRP discussions within units. The outcomes of these are combined with data on research outputs and impact activities, to form the basis for twice-yearly institutional monitoring of units. The PVC(R) presents these results to the University Executive, which authorizes action where necessary. Monitoring meetings are supported by a team in RB&I, which also provides ongoing support for research and impact activities throughout the year.

Facilities

AU's strategy is to:

- support *unit-level* facilities;
- provide *institutional-level* facilities for multi-unit use;
- *work with other HEIs and research institutions* across Wales, where AU's capacity is too limited to provide independent facilities.

At *unit-level*, AU has secured over £51M from the European Regional Development Fund (ERDF) for infrastructure and research, with a further £13M in ESF grants. We have proactively supported units both with major infrastructure investments, such as the National Plant Phenomics Centre, but also with smaller needs through the research capital grant from HEFCW, which funds 4-5 projects annually each averaging c.£200k.

At *institutional-level*, AU provides both physical and digital facilities and infrastructure to support research. Physical facilities include:

- A 700-acre upland research centre and extensive farmholdings (including a research farm with c.400 cows and 1000 sheep, and significant acreage for plant-based research).

- Computing and storage for bioinformatics (with close to 2PB for long term storage of datasets).
- The School of Art Museum, which has Accredited Museum status.
- Three fully equipped studio spaces for research-led performances.

The University library is a member of the UK Research Reserve, is a European Documentation Centre, has >560,000 physical items, >678,000 e-books, >30,000 serial titles, and a range of special collections. The redevelopment of the Old College will also provide AU with a major facility for civic mission and enterprise activities from 2023/4 on. Digital infrastructure includes subscriptions to PURE, Scopus, SciVal, DataCite, nVivo and ORCID, as well as data storage and access. Both physical and digital infrastructure is available to all staff and used by a wide range of disciplines – for example, the upland research centre has been used by staff in Agriculture, Biological and Environmental Sciences, Computer Science, Geography and Earth Sciences, and the School of Art.

Recognising its comparatively small size, AU *collaborates* both with other HEIs and with research institutions in Wales. An example of the former is Supercomputing Wales, a joint venture between Aberystwyth, Bangor, Cardiff and Swansea Universities which will be upgraded over the coming decade by Data Nation Wales. Examples of collaboration with other institutes include the National Library of Wales, Hywel Dda University Health Board, and the Centre for Alternative Technology in Powys.

Promoting Equality and Diversity

During the course of the REF 2021 assessment cycle, AU has progressively improved its support for equality and diversity in access to facilities in three ways. First, it has increased the training provision for under-represented groups to improve their ability to compete effectively for funding competitions (e.g. funding sandpits for ECRs). Secondly, AU is improving the diversity of its assessment panels beyond ensuring a gender balance. For example, the GCRF awards panel includes significant ECR representation. All AU staff are trained in equality and diversity issues, and unconscious bias training is a requirement for funding and assessment panels. Third, funding is available to identified groups to ensure diversity - for example, to support Welsh-medium publications, PhD scholarships for BAME students, and PhD students for ECRs.