



EFI Research Strategy

Preamble

The aim of this document is to set out the embryonic Edinburgh Futures Institute (EFI) Research Strategy, dovetailing with the overall EFI Ethos Statement and the EFI Outline Plan (2020-23). It provides an overview of our aims and themes, details how we will support the research community by removing existing barriers and developing new ways of working, reports on activities to support grant income, and covers next steps, and the governance of these activities.

EFI Research Themes

EFI Research will focus on challenges and opportunities posed by Data Driven innovation in four main sectors and two cross-cutting themes:

Main Sectors:

- 1) **Financial services (including Fintech):** we aim to develop innovations in FinTech and financial services to help address industrial and societal challenges such as problem debt, inequality, and climate change, and to explore the new and important ethical, legal and security challenges they present.
- 2) **Creative:** we aim to bring together Edinburgh's world-class creative industries and tech sector, to explore how data can be used to drive ground-breaking new products, businesses and experiences. We will also strengthen our collaborations with a range of partners in the gallery, library, archive and museum sector, by researching tangible and intangible cultural heritage in innovative ways.
- 3) **Tourism and Festivals:** we aim to generate impactful research and actionable, data-driven insights to support businesses operating in the tourism sector, by using our interdisciplinary research experience spanning multiple areas, such as digital marketing, statistics, big data analytics, artificial intelligence and machine learning.
- 4) **Data Civics:** we aim to explore how civic government can use data-driven innovations to respond to the transformation of communities, cities and societies brought by the digitalisation of social life. Data Civics addresses these infrastructural challenges in the context of place making, public service design and delivery and democratic governance and innovation.

Cross Cutting Themes:

- 5) **Future Infrastructures:** we aim to re-boot our ageing infrastructure and make it smarter, more sustainable, more resilient and better focussed on improving the quality of life. We will do so by bringing together our world-class expertise in engineering, informatics, architecture, geosciences, social and political studies, business, the arts and humanities and collaborate external organisations, government departments and agencies facing infrastructure challenges.
- 6) **Ethics of data and AI:** we aim to understand the ethical implications of present and future advances in AI, machine learning and other data-driven technologies and address the growing moral, political and technical challenges of designing and sustaining equitable and thriving futures in the Edinburgh City Region, Scotland and beyond.



EFI Research Strategic Priorities

We have identified the following priorities that will inform and shape our future plans, and help us build stakeholder engagement in an agile, innovative, and responsive manner:

- **Consolidate the University of Edinburgh's leadership in Data Driven Innovation Research**, and support the University in achieving its 2030 Strategy, more specifically by:
 - a) *Delivering inclusive growth* in our City Region, and beyond;
 - b) *Providing data skills* to our research community as well as our external stakeholders; more specifically, we will offer a training and upskilling program of data-led research methods, in collaboration with the Centre of Data, Culture and Society, to allow existing staff and research students at the University of Edinburgh to grow and develop their own approaches to digital data-led research;
 - c) *Co-designing solutions* for global challenges by developing a culture of challenge-led research and innovation;
 - d) *Being a world recognised leader* in Artificial Intelligence and the use of data with integrity.

- **Develop research capacity by retaining local talent and attracting global talent.** We will do so by:
 - a) *Engaging and on-boarding* UoE academics in research activities and projects related to our themes, through an internal affiliation programme;
 - b) *Expanding research capacity* through strategic recruitment, by pump priming experimental initiatives, fostering unexpected collisions of thinking and, more generally, by providing support to academics working on grant applications related to our strategic themes to allow them to respond to a fast-moving research environment in an agile manner;
 - c) *Fostering external collaborations* by providing a research ecosystem that supports academics in co-designing and co-creating innovative projects with partners outside academia (business and third sector).

- **Enhance the significance and reach of the impact of our research**, by encouraging the widest use of our expertise and nurturing entrepreneurial thinking in our staff and students. We aim to do so by:
 - a) *Creating a physical and digital working environment* that facilitates the establishment of new connections and networks – where students and academics can maintain dynamic communication flows with external partners and make sure that the objectives and outcomes of their research constantly align with the needs of the public and stakeholders;
 - b) *Offering additional support* that complements services already available, by enhancing the collaboration with EFI Adoption Delivery, boost applications to calls involving or led by non-academic partners (such as ISFC or KTPs) and support academics and our partners in confidently using new digital technologies;
 - c) Collaborating with our partners in *disseminating and promoting the outcomes* of our research and *evaluating the interim and final results*, so that we can reflect not only on EFI's successes and failures but also on whether the experience of our partners meets their original expectations.

EFI Research does not aim to undertake the activity described within this document on its own, but rather to provide a cross-cutting information flow and support network that liaises across different, existing structures at the University of Edinburgh including academic Schools and Departments, and professional support services, as well as other structures and resource areas within EFI itself.



EFI Research Objectives

EFI research is already working towards some high level, long-term objectives to be achieved by 2030. However, our operational budget has only been confirmed for the next three years (from 2020/2021 until 2022/2023). Achieving our long-term objectives depends on the resources we will be able to deploy. A more detailed *Implementation Plan* of the current strategy will be developed when resources have been confirmed.

- Over 15 years, EFI Research will deliver an uplift in DDI research income of £131.2M, (CAHSS £34.8M, CSE £96.4M). Recording and reporting on these deliverables will be done in conjunction with DDI: EFI Research will work closely with them to check and approve the information they need to provide to the ESES City Region Deal. These ambitious KPIs can be achieved by both increasing the capacity of research focused on DDI sectors through new hires, as well as identifying and supporting current researchers who wish to undertake research focused on DDI;
- EFI Research will share and celebrate our research achievements in a digitally-focussed way (including exemplary online and social media coverage), in collaboration with Communications and Marketing at the University of Edinburgh. We want to make sure our research is valued and valuable, and promote an inclusive culture where both students and academics are empowered and their achievements recognised;
- EFI Research will support the establishment and growth of EFI-related networks and communities with a view to developing Research Centres that align with our strategic research programmes. We will provide advice, guidance and resourcing to those involved to help them in pursuing their research ambitions;
- EFI Research will bring innovation practices into our research activities and culture, by actively encouraging academics to adopt a challenge led approach to research, for example by identifying challenges with our external, non-academic partners and framing these challenges as research projects;
- EFI Research will work with the EFI PMO to help them develop mechanisms for affiliation of external linked parties and research partners to EFI, where appropriate. This will require adequate governance, procedures, and policies, as well as technical support, to build a register of external parties and their activity which links to the EFI Research areas (as stated above). It is imperative that we abide by University of Edinburgh ethical guidelines on establishing, monitoring, and reviewing partnerships, and we acknowledge the complexity of this activity. This activity will be undertaken after the successful roll out of the internal affiliation process, as we build our systems and procedures;
- EFI Research will work with EFI Engagement to consider how best to embed visiting scholars into the EFI Research community, including using innovative digital and blended visiting schemes, and data-led opportunities, rather than relying on existing models of physical attendance for visiting scholars;
- EFI Research will liaise closely with EFI Education to embed our research community and their outputs into teaching and practice across developing EFI Programs, deploying leading researchers in courses and providing opportunities for students/partners to develop cutting-edge research skills, e.g. through participation in projects;



- EFI Research will support both internally and externally facing interdisciplinary research events to give staff, students, and external parties the chance to mix, meet, and cross-pollinate ideas. Working with EFI Engagement, we will plan how to expand our support for events, using innovative approaches (including online and offline engagement, competitions, hackathons, teach-outs, etc). Given our expanding activities, we will also provide resources for others to access funds and other support to run their own EFI events, in a coordinated, and communicated manner, working closely with EFI Communications in their advertisement, delivery, and reporting;
- EFI Research will establish closer working relationships with the other DDI Innovation Hubs linked to the City Region Deal (in particular the Bayes Centre and Usher Institute) in order to understand and respond to their own research strategies, and the opportunities that closer links will provide, to drive shared understandings of the capacities, opportunities and impacts of multi-disciplinary research involving the arts, humanities and social sciences, and their transformative potential;
- EFI Research will work closely with the CAHSS College Research Office (CRO) and School Research Offices (ROs), to make sure that the role of the staff in the EFI Research team is clear, distinct from CRO and ROs staff, and seen as adding value to existing support structures for both academics and professional services teams. The EFI Senior Research Manager will meet regularly with CRO to provide mutual updates, share priorities, and coordinate and promote research initiatives; the EFI Research Proposals Manager will work in close partnership with ROs when coordinating submissions or providing advice on research proposals linked to the EFI Research Themes. Research proposals supported by the EFI Research team will continue to be hosted by a lead School, and the EFI Research Proposals Manager will, for those proposals that they directly support, ensure that all costings, checks and approvals are routed through existing School mechanisms.



EFI Research Project Brief - Building a Research Infrastructure and Community Building (2020-2023)

Project Overview

EFI Research aims to provide the catalyst for interdisciplinary research across all areas of the University of Edinburgh, encouraging collaboration between the arts, humanities and the social sciences with data science, engineering, the natural sciences and medicine. EFI Research will focus on challenges and opportunities posed by Data Driven innovation in four main sectors: financial services (including Fintech); creative industries (Creative); tourism and festivals; and public-tech and data civics. In addition to this, we will support two cross cutting themes: Future Infrastructures and the Ethics of data and AI.

EFI Research will provide mechanisms and support for researchers to engage with external partners and to contribute to research environments both locally, nationally, and internationally, working with researchers, local communities, industry, and government. We will support initial research activity that could develop into ambitious projects. We aim to do so through several initiatives, including an annual program of EFI Small Research Grants, our EFI Student Research Projects, strategic support for particular grant calls and funding initiatives as well as support for networking and creating new partnerships.

Problem Statement/Strategic Context

Our aim is to encourage and facilitate the highest quality research linked to our thematic areas. Our ambition is to build a holistic research environment that supports, encourages, rewards, and promotes research and its impacts, constructing a culture of success, ambition, and engagement, producing outputs with meaningful, sustained and measurable impact in society. Developing meaningful connections with the other DDI Hubs and working across the three Colleges to create a new research community/ecosystem presents challenges, which we want to tackle by offering supportive institutional settings that promote cross-disciplinary communication and coordination.

What benefits and outcomes will be delivered?

Establishing EFI is a complex undertaking, and it's vital that colleagues across the University see us as an opportunity to generate positive change (through education, research and engagement activities) and drive the academic community and our students to become leaders in research that has a demonstrable ethical, social, cultural, economic and environmental impact.

In order to support EFI in its research ambitions, it is imperative to create the necessary support structures to build a lively new community and facilitate collaboration between academics. This can be achieved by enabling interaction and fostering partnerships across the EFI themes, supporting existing and new research centres, and working with the UoE support teams already in place in a strategic and coordinated way. The EFI Education portfolio is large, ambitious and research-led, therefore it also needs to be meaningfully linked to the research strategy for EFI. The main outcomes to be delivered are:

- Facilitating cross-disciplinary working in a currently disperse environment;
- Putting in place an agile and comprehensive method to capture and record KPIs ;
- Building strong and enduring relationships with the other innovation hubs linked to the Data Driven Innovation programme and the central DDI Project Management Office;
- Offering support for strategic funding applications, by providing teaching relief and facilitating the involvement of external partners in the proposals;
- Working closely with the Education leads to align resource as needed;



- Working closely with the Comms team to make sure EFI increases its visibility within our academics, to support community building;
- Developing not only expertise, but also capacity and motivation for staff to engage with EFI projects; this can be achieved through several initiatives including staff training, seed corn funding, and the provision of infrastructures that facilitate co-design and co-production.

EFI also has research targets as part of the City Region Deal KPIs. Although not responsible for their delivery or reporting, this project will aim to enable their delivery via community building and providing the environment and infrastructure which will facilitate an uplift in DDI related research. For reference purposes, the 15 year research target for EFI is to:

- Deliver an uplift in DDI Research Income of £131.2M, (CAHSS £34.8M, CSE £96.4M – which may be rebalanced in respect of government services/govtech related research). This can be achieved by both increasing the capacity of research focused on DDI sectors through new hires, as well as identifying and supporting current researchers who wish to undertake research focused on DDI. This will require the provision of resources that can remove barriers to innovation to Data Driven Research across CAHSS.

Project Success Criteria

- Recruiting a team that can enable academics affiliated to EFI to work on projects that contribute to the uplift in DDI research income;
- Recording an increased number of externally funded applications submitted as a result of initiatives supported by our internal funds;
- Contributing to set up a successful affiliation programme for academics as well as external partners who are inspired by our ethos and are keen to collaborate with EFI;
- Upskilling on digital methods across the research community;
- An increased number of word-leading quality research outputs in our research areas;
- Receiving positive feedback from people attending EFI Research related events;
- Supporting a successful research-led education portfolio within EFI;

Project Scope

The project has two distinct but interdependent foci: creating a supportive research environment and facilitating the submission of large-scale, ambitious and multidisciplinary research grant applications.

The project will:

- Define and plan the long-term operational team who will provide expert support and resources to help researchers develop their goals, recognising the value of research as well as the KE and public engagement activities needed to achieve impact outside academia;
- Manage the recruitment process of temporary and permanent staff (BG administrator; Research Proposals Manager; Digital Skills Training Fellow);
- Manage the operational budget, including all EFI Research internal awards;
- Support the establishment of the EFI affiliation programme for academics as well as external partners;
- Set up a research induction programme for new academic appointments;
- Plan and organise a research events programme;
- Support the development of the Education portfolio within EFI;
- Support EFI Engagement with by putting our excellence in research at the service of our communities, government and industry;



- Cultivate an innovation culture that encourages better quality and more effective partnerships for research projects;
- Establish a new programme for visiting scholars;
- Liaise with the Comms team to advertise news and events related to research;
- Organise internal communication channels (newsletter/noticeboard on Sharepoint) to reach out to our academic community as well as professional services colleagues working in research teams within Schools, Colleges and the Central University area;
- Monitor and report on research outcomes based on guidance and instructions to be received from DDI.

Scope Exclusions

The project will not deliver:

- Preparation of project budgets without involving colleagues in ERO/School Research offices;
- Approval of submissions without the involvement of the Schools where the PIs/Co-Is are based;
- Post-award administrative support (finance processing, recruitment, etc);
- Tagging research projects at application stage (establishing the process for tagging research awards has been included as one of the milestones);
- Retrospective tagging and analysis of material to be considered for KPIs.

References, Related Projects & Work (including previously completed)

Item/Project	Relevance
Edinburgh Future Institute: Estates projects	Coordination will be required to make sure the infrastructure provided to support specific projects is available, and the building offers the physical infrastructure needed to foster a collaborative research environment
Edinburgh Futures Institute: Education	Coordination will be required between the Education and Research initiatives for the support and delivery of postgraduate research activities.
Edinburgh Futures Institute: Business Engagement	Coordination will be required between the Research and Business Engagement team for the support and delivery of research activities in collaboration with external partners
Edinburgh Futures Institute: Community Engagement	Coordination will be required between the Research and Community Engagement team for the support and delivery of research activities in collaboration with external partners
Edinburgh Future Institute: Comms and Marketing	Coordination will be required to promote our internal schemes, celebrate external awards, publications and other achievements, support EFI Research Centres in advertising their research activities and achievements
ERO	Coordination will be required in relation to research plans and synergies for working together, mostly through the EFI Research Steering Group; support is also required with tagging/identifying DDI/EFI awards
Academic staff in Schools across CAHSS and CSE	Engagement with academics (pre- and post-award)



Key Professional Services teams in Schools across CAHSS and CSE	Engagement with local research offices, as they prepare financial costings associated with the bids as well as providing internal approvals before submission
College Research Office – CAHSS Research and KE Strategy https://www.ed.ac.uk/arts-humanities-soc-sci/research-ke/our-research/research-knowledge-exchange-strategy	Background information
UoE Strategy https://www.ed.ac.uk/research-office/research-strategy	Background information

Project Sign-off

This project brief shall be agreed via the EFI Research Steering Group (for frequency and governance, please refer to the Terms of Reference for that group). Where changes or revisions are needed, the project manager shall prepare changes in draft form and present them to the steering group for approval. Key members of the steering group needed for approval are:

- EFI Director of Research, (Project Sponsor),
- EFI Deputy Director of Research,
- EFI Head of Institute,
- EFI Senior Research Project Manager,
- EFI Head of Operations.