DAVID A. ELLIS – Narrative CV[1]
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<u>Module 1. Contributions to the generation of new ideas, tools, methodologies or knowledge</u>

My work aims to understand how digital technologies and ubiquitous data are transforming both research and daily life. Working at the intersection of psychology and data science, I have developed novel theoretical frameworks and methodological approaches that have fundamentally changed how social scientists engage with new technologies in our increasingly digital world.

My research journey began with foundational questions about the psychological value of emerging digital data. This led to a pivotal discovery: just as people regulate biological behaviours like sleep and appetite to maintain homeostasis, individuals also unconsciously control their technological interactions, keeping them stable and close to desired levels. This theoretical notion of "digital homeostasis" provides new insights into social interactions, privacy behaviours, and digital well-being.

Building on these insights, I pioneered innovative methodologies for ethically studying human behaviour through digital traces from smartphones, medical records, and wearable devices. For example, several NHS data-linkage studies revealed that missed medical appointments predict mortality risk, leading to policy changes that allocated additional funding to practices serving socio-economically deprived populations. My smartphone sensing work has influenced how researchers measure technology use, moving the field away from inaccurate self-reports toward objective behavioural data. As the field matured, my focus evolved toward meta-scientific questions about computational reproducibility and ethical frameworks. I co-developed the DECIDE framework to support ethical decision making in digital-behavioural-data explorations and demonstrated widespread reproducibility issues even when data is shared openly.

This research has been published in world-leading psychology, medical, computer science, and communication outlets (>85 publications, >5,800 citations), earning recognition on the Stanford-Elsevier list of top 2% of researchers globally since 2021. Beyond traditional publications, key outputs include government reports, open-source software tools, datasets, media outputs, and interactive installations.

Collectively, this work has established new paradigms for understanding how new and emerging forms of data can reveal the dynamics of behaviour in the digital age while ensuring the field develops ethically and reproducibly - critical foundations as digital technologies become increasingly central to human experience.

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[1] A narrative CV is **defined by the Declaration on Research Assessment (DORA)** as a CV format that provides a structured written description of a person's contributions and achievements that reflects a broad range of relevant skills and experiences, more than can often be seen in a traditional academic CV.

<u>Module 2. The development of others and maintenance of effective working relationships</u>

My approach to leadership centres on creating environments where individuals can take intellectual risks while being fully supported to develop their potential. This philosophy has guided my work across multiple domains - from mentoring individual researchers to driving institutional change in research culture.

Developing the Next Generation of Researchers

Fostering early career researchers remains central to my practice. I have successfully supervised multiple research associates and PhD students, with all securing positions at world-leading universities or in industry. My mentoring extends beyond technical skills to career development: I regularly involve early career researchers in peer review processes, co-authorship opportunities, and grant writing to build comprehensive research capabilities. For example, former PhD student Dr. Heather Shaw now holds a lectureship at Lancaster University, while Dr. Kristoffer Geyer leads data science initiatives in a variety of industries. Other recent successes were recognized through the *University of Bath's Staff Doctoral Recognition Award* in 2023. For more experienced colleagues, I have helped many to develop promotion cases all the way to professor and provided references to support external candidates' promotion bids in and far beyond the UK.

Building Inclusive Research Cultures

Recognizing that transformative research often emerges bottom-up, I developed the *ROSE* framework for my research group—encompassing **R**espect, **O**penness, and **S**upport that strive for **E**quality. This isn't merely aspirational; it translates into concrete practices like transparent decision-making, equitable authorship policies, and creating safe spaces for intellectual risk-taking. This approach has enabled colleagues to expand their work into meta-scientific areas including open research practices and ethical frameworks. At the institutional level, I chair the *Social Sciences Research Ethics Committee* and co-developed the University of Bath's research culture action plan as part of the *Research Culture Steering Group*. This was informed by and responsive to the needs of all research community members. While we regularly review progress, early success includes a shift towards responsible research assessment with Bath now a signatory of DORA and the Concordat for the Environmental Sustainability of Research and Innovation Practice.

Leading Interdisciplinary Research with Integrity

My leadership philosophy emphasizes transformational rather than transactional approaches. I have successfully led multidisciplinary research teams, including key portions of major centre grants (REPHRAIN, CREST, LEAP). This includes leading a successful research sandpit where our diverse team developed a fundable project over several days—an experience that led me to mentor other participants at subsequent sandpits. This collaborative approach extends far beyond Bath: I serve on the advisory board for Lancaster University's Wellcome-funded project on reimagining research practices and have chaired research misconduct investigation panels, demonstrating my commitment to research integrity across the community.

Broader Professional Impact

My collaborative approach extends across career stages and professional boundaries. Specifically, recognition and research governance processes remain one of the biggest drivers of culture change because the behaviours that are recognised and rewarded are the behaviours that end up being more regularly demonstrated. Whether working with university senior management on policy development or supporting international colleagues with funding applications, I maintain a solutions-focused approach that embeds equality, diversity, and inclusion considerations throughout. This has involved piloting new systems to manage applications seeking favourable ethical opinions, contributing to national research integrity discussions, transforming promotion criteria as well as recruitment, and providing constructive challenge when needed to drive positive change.

Together, this demonstrates my sustained commitment to creating nurturing environments that foster both individual development and collective excellence, while maintaining the courage to challenge existing practices when they limit potential.

Module 3. Contributions to the wider research and innovation community

Throughout my career, I have been committed to advancing research practices and fostering innovation across disciplinary boundaries. This commitment began early - during my PhD, I led the first interdisciplinary conference for early career researchers at the University of Glasgow, establishing a pattern of building bridges across research communities that continues today.

Advancing Research Integrity and Open Research

I was a founding member of Lancaster's Open PRomoting Open Science PRactices in Psychology (PROSPR). At Bath, I, along with several other colleagues, helped instigate institutional membership of UKRN. I then served as the Local Network Lead from 2022 to 2024, developing funding bids with UKRN directly. Previously, I developed resources for UKRN, which are now featured as part of UKRI's Good Research Resource Hub. This includes a case study with Jisc to illustrate the wide variety of contributions to different aspects of open research thus raising the profile of the many professional and technical staff whose work is essential to make research open and rigorous. In recent years, I have contributed to discussions on how Bath can best support transparency and reproducibility as part of *Academic Ethics and Integrity Committee* and the *Open Research Steering Group*. This is reflected in changes to our promotional criteria, and new authorship guidance.

I have spearheaded transformative changes in how the research community approaches the sharing of research assets to support computational reproducibility. A registered report assessing computational reproducibility in *Behavior Research Methods* alongside related work revealed widespread issues even when data is openly shared, directly influencing editorial policies at leading journals including *Psychological Science*. This line of work contributed to evidence that influenced a House of Commons Committee report on Reproducibility and Research Integrity, leading to government recommendations for improving research practices.

Similarly, I have pioneered methodological approaches that have fundamentally changed how researchers collect and analyse data. My work developing secure infrastructures for

smartphone data collection, coupled with ethical frameworks for digital behavioural research, has lowered barriers to entry for researchers worldwide. The open-source tools and analysis code I have developed are used by research teams internationally, democratizing access to sophisticated analytical approaches.

Broader Research Community Engagement

I regularly serve as external examiner for PhD programmes and taught courses, including Imperial College London's MSc in Security and Resilience, helping maintain standards across the research community. My commitment to advancing research standards also extends through extensive peer review for publishers across psychology, medicine, computer science, and communication, including high-impact general science publications such as *Nature* and *Nature Human Behavior*. These contributions extend through my editorial board membership at *Technology, Mind, and Behavior* (*American Psychological Association*), where I help shape an innovative open-access platform that empowers dynamic research presentation.

In addition to reviewing for various funders, my appointment to the *UKRI Interdisciplinary Assessment College* in 2023 reflects recognition of my ability to evaluate research across traditional boundaries. Promotion to the Chairs Pool in 2024 and my role as Rover in 2025 involves assessing proposal quality across multiple parallel panels and participating in tensioning meetings that shape funding decisions. This work directly influences how interdisciplinary research is evaluated and supported across the UK research landscape.

As chair of the *Social Sciences Research Ethics Committee* at Bath, I also play a leading role in shaping ethical standards for research practices. This involves developing new approval frameworks for emerging methodologies, particularly in new and emerging forms of research where traditional ethical frameworks require adaptation, ensuring that innovation proceeds responsibly across the research community.

Through these diverse activities, I have consistently worked to ensure that research communities can adapt to technological change while maintaining the highest standards of integrity, openness, and innovation.

<u>Module 4. Contributions to broader research or innovation-users and audiences and towards wider societal benefit</u>

Delivering positive social, economic, and industrial impacts, while ensuring technology serves humanity's best interests and reduces inequalities, my interdisciplinary work has directly influenced policy and practice, from informing NICE guidelines and NHS interventions that improved patient attendance to contributing to UK Government reports on the impacts of digital technology.

I have provided advice and research reports to private companies (e.g., *QinetiQ, Unilever*), charities (e.g., *Wavelength*), research infrastructure organisations (e.g., *DARE UK, Jisc, OSF, SDR UK, UKRN*), publishers (e.g., *PLOS, Springer*), funders (e.g., *UKRI*) as well as to the UK, Welsh, and Scottish governments. Some of these reports have explicated the relevance of current psychological theory and methodology for policy and practice. Others sit alongside specific strategic requirements. This includes contributions to various government reports and policy frameworks that consider the impacts of mass-adopted technologies. Examples include UK Government investigations into the Impact of social media and screen-use on young

people's health (*Fourteenth Report of Session*) and the *Video Games Research Framework*. Both reports rely on my research. Several patents also cite my work.

Other award-winning research pioneered data-linkage methodologies using health service data to explore the importance of patient behaviour across the lifespan, morbidity, and mortality outcomes. This research informed NICE guidelines and directly impacted NHS systems by identifying gaps in care and developing interventions to encourage engagement. The epidemiological work included a seminal paper that was the first to quantify patient 'missingness' from digital data, which appears in the *Chief Medical Officer for Scotland Annual Report 2023-2024*. This research has directly resulted in additional funding being provided to general practices serving Scotland's most socio-economically deprived populations to improve patient attendance. An independent qualitative evaluation has demonstrated impressive and encouraging outcomes. These activities underpin impact case studies developed during UK REF processes.

At the same time, various networks allow knowledge-exchange activities to occur at any point in the research cycle. Collaborations regularly involve civil servants, government analysts, NHS staff, patients, artists, technology entrepreneurs and members of the public. Several of these have led to numerous public engagement and knowledge exchange activities. In 2020 and 2023, I received the *Dean's Award for Research Communication and Translation* from The University of Bath. Working with colleagues, I have curated/presented podcasts, delivered public lectures, and developed interactive exhibits for local, national, and international events including the British Science Festival.

Finally, my own research has reached the eyes and ears of billions across the world, and I am regularly asked to provide expert opinion, thus contributing to public understanding of technology's role in society. In the UK alone, my work is regularly featured in mainstream media outlets including ITV (e.g., *Tonight*), BBC One (e.g., *The Victoria Derbyshire Show*), BBC Radio 4 (e.g., *Inside Science*), and the BBC World Service (e.g., *Click*). Results also frequently re-appear in newspapers (e.g., *The Daily Mail*) and general science publications (e.g., *New Scientist*).