Laidlaw Undergraduate Leadership and Research Scholarships Academic-led Project Proposals 2026

This is a directory of all the academic-led, pre-defined research projects that are available for the Laidlaw Programme in 2026. For Academic Led projects you do not need to identify an academic supervisor as the academic listed on the project will be your supervisor. To be considered for these projects, you will need to meet with the faculty member listed about the project before submitting your application.

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Business School

Department of Management and Marketing

Project title	Uncovering leaders' identity processes through the use of natural language processing.
Academic Lead(s)	Matt Sjoberg
Faculty of Project	Business School
Department of Project	Department of Management and Marketing
Project description	It is well known that leaders face a potent mix of elevated expectations, high visibility, and high levels of responsibility (Kark et al., 2022). This could make the transition from a regular employee role to a leadership role particularly challenging. Furthermore, transitioning into a leadership role may instigate the development of a leader identity (Epitropaki et al., 2017), with feelings of impostorism likely to occur in the early stages of the leadership tenure (Kark et al., 2022). The traditional way to study transitions to a leadership role within management research has been through interviews or surveys (Conger, 1998). While useful, these methods rely on people's self-reports and, hence, may be prone to desirability biases (Phillips, 1973). To mitigate these limitations, recent advances in AI and natural language processing have enabled researchers to study people's language use in various naturalistic situations. Specific research questions: Can we observe changes in a person's language as they transition into a leadership role? Is it possible to predict leadership transitions by looking at language left behind on social media, specifically the r/managers subreddit forum?
Suggested output	It is expected that the outputs from the current research programme would be an academic article that can be submitted to a suitable academic journal (with the scholar as a co-author). In

	addition, it would be an opportunity for the scholar to present the work at internal and external research conferences (e.g., undergraduate research conferences, British Psychological Society student conference etc.).
Essential Skills needed for Applicants	Statistical skills (particularly related to natural language processing), academic writing, project management skills
Further details	N/A
Open to multiple scholars?	One scholar.

Arts & Humanities

Classics and Ancient History (2 projects)

Project title	Greek without limits: modern experiences of Ancient Greek and Ancient Greece in Education
Academic Lead(s)	Arlene Holmes-Henderson
Faculty of Project	Arts & Humanities
Department of Project	Classics and Ancient History
Project description	1. What is it like to learn about the ancient Greek world today? 2. Why does it matter? 3. What can classicists do better to raise the profile (and value) of Greek language and culture education to improve a) public perception and b) uptake?
Suggested output	Full draft manuscript of a published academic book. Report/poster on lessons learned from the project.
Essential Skills needed for Applicants	Excellent communication skills (especially when writing formal emails), attention to detail and an interest in Classics.
Further details	Laidlaw Scholar Erin Young collaborated with me on a book project in summer 2025. Please approach her to find out more about the skills she learned, and the type of work involved.
Open to multiple scholars?	One scholar.

Classics and Ancient History continued

Project title	Studying the ancient world in modern classrooms
Academic Lead(s)	Arlene Holmes-Henderson
Faculty of Project	Arts & Humanities
Department of Project	Classics and Ancient History
Project description	How can CERES raise the profile of Classics Education research locally, regionally, nationally and internationally? What models of good practice exist for the effective functioning of research centres? How might the centre scale up its fundraising activities, and what activities should it provide for the teaching, policy and academic communities?
Suggested output	A report for internal Research Centre Directors, a press release/media publication, a marketing/social media plan, event (perhaps a conference), and a strategic plan for the next 12-24 months.
Essential Skills needed for Applicants	Organisation, creativity, vision.
Further details	It would be ideal for someone who studied a classical subject at school in the UK, although it is open to everyone. It will be particularly useful for anyone considering a career in branding/PR/advertising/events management.
Open to multiple scholars?	2.

English Studies

Project title	*Game Studies North East: Scoping the Field of Play*
Academic Lead(s)	Alistair Brown
Faculty of Project	Arts & Humanities
Department of Project	English Studies
Project description	Research may combine desk studies, remote meetings, or focus groups with key participants; the successful researcher may indeed have their own strategies for fulfilling the project aims, and we would welcome hearing these. The key research questions are: - Who are the current academics working on game studies across the 5 North East universities and other academic institutions (e.g. FE Colleges, Northern College of Art), and what areas of specialisation exist as strengths across the region? - What and where are game studios across the North East? - What third sector organisations (e.g. innovation catalysts, charities) are key to supporting North East game development infrastructure? - How does the North East compare to other regions in the range and profiles of the above? - How do industry-academic partnerships work successfully in comparator regions or academic institutions? - What would be the best strategies and impactful ways to devise and promote a North East game studies network to maximise the opportunities?
Suggested output	One natural output from research questions 1-3 would be a map featuring the locations and profiles of the different people/organisations relevant to this space; this might be used on a website. The second obvious output would be a report especially focused on research questions 4-6, which could be used as the foundation for further funding proposals and to shape the development of the network.

Essential Skills needed for Applicants	1. Interest in the ways academic and industry partnerships work successfully 2. The ability to quickly form effective and professional relationships with individuals working in academic, industrial, and third sector contexts 3. Excellent oral and written communication skills
Further details	N/A
Open to multiple scholars?	One scholar.

Research & Innovation Services (RIS)

Project title	*Community Voice in Place-Based Cultural Interventions: A Critical Narrative Inquiry into the Into the Light Programme*
Academic Lead(s)	Alison Whelan
Faculty of Project	Arts & Humanities
Department of Project	Research and Innovation Services (RIS)
Project description	You will join an innovative evaluation of a place-based cultural programme during its final year. Using Critical Narrative Inquiry, you'll work directly with community participants to capture their stories of change and transformation through the Into the Light programme. Your role will involve facilitating storytelling sessions, conducting individual interviews, and working with participants to analyse and validate emerging themes. You'll gain hands-on experience in participatory research methods while contributing to real-time programme adaptation based on community voice.
Suggested output	Primary Outputs (to be agreed with the scholar and the Into the Light team, including Neil Heckels, Senior Policy Manager, and Professor Janet Stewart, Executive Dean, Faculty of Arts and Humanities): - Community Story Collection & Analysis Report (15-20 pages): Thematic analysis of participant narratives with recommendations for programme adaptation - Digital Story Portfolio: Collection of participant-created multimedia narratives with analytical commentary - Practitioner Toolkit Component: "Facilitating Community Storytelling in Evaluation" - practical guide based on field experience Potential Secondary Outputs: - Blog Series: 3-4 accessible posts on participatory evaluation methods for practitioner audiences

	- Presentation: Findings presentation to programme stakeholders and community participants
Essential Skills needed for Applicants	Qualitative Research Understanding and Awareness: Understanding of qualitative analysis approaches and ethical considerations in community-based research. Communication and Facilitation Skills: Ability to build rapport with diverse community participants, facilitate group discussions effectively, and adapt communication style for different audiences. Experience in public speaking or group facilitation preferred. Critical Analysis and Writing: Strong analytical thinking skills with ability to identify patterns and themes across complex data. Excellent written communication skills for producing clear, accessible reports and materials for both academic and practitioner audiences.
Further details	This is a County-wide place-based programme and may include travel to the different project partners, based in different areas of the County.
Open to multiple scholars?	The project could accommodate two or three if needed, as there are multiple project strands within the Into the Light Programme.

Theology and Religion

Project title	*Diversity & Belonging: Christian art in Church Today*
Academic Lead(s)	Jane Heath
Faculty of Project	Arts & Humanities
Department of Project	Theology and Religion
Project description	Contemporary culture has become acutely aware of challenges of diversity and belonging within modern Western societies. The church is embedded in such society, and within the church, Christian art has a complex role in constructing a sense of belonging or exclusion. Its purpose is to mediate people's relation to God and, when it is in a sacred space, this can happen in conjunction with shared participation in liturgy. In its way of handling its subject-matter, it integrates attention to Christian history, theology, and scripture. It has well developed iconographic traditions, but their treatment of ethnicity, class, gender, sexuality, disability, or religion both reflect and co-construct the parts of cultural heritage that have become contentious today. Challenges for modern church communities arise both in reception of artistic cultural heritage within older church buildings, and in the creation of new art. In response, older art within churches has variously been supplemented, explained, removed, discussed, or ignored; new artworks have been created portraying Christ as female, Black, or disabled, and a discourse of 'everyman' and 'everywoman' has been used in discussing particular depictions of Christ or Mary. I would like to invite a student to develop a research project in this area, focusing on a particular artwork in a particular liturgical context, and identifying and discussing the theological and pastoral issues that arise.
Suggested output	1. An annotated bibliography, reflecting on how particular thinkers, ecclesial documents, or other sources shape your thinking in this area. 2. An essay responding to the research questions in relation to a particular artwork / church setting of your choice.

	3. Possibly a presentation and/or a short publication, to be considered and discussed in light of the project that emerges.
Essential Skills needed for Applicants	1. Theological interest and sensitivity 2. Artistic interest and sensitivity 3. Empathy to consider a variety of different perspectives, including those that are different from your own
Further details	I would like to offer this project also through the DU 're-imagine research' initiative, if it is running this year, which offers places for ug research interns from less privileged backgrounds.
Open to multiple scholars?	Happy to supervise more than one.

Science

Biosciences (2 projects)

Project title	*Influence of dopamine transport on learning and memory*
Academic Lead(s)	Vincent Croset
Faculty of Project	Science
Department of Project	Biosciences
Project description	The dopamine transporter (DAT) plays a central role in regulating dopamine signalling, and it is the main target of psychostimulants such as cocaine and amphetamines. DAT is considered a specific feature of dopamine-releasing neurons - however, we have recently discovered its expression in a subset of non-dopaminergic, memory-relevant neurons in the Drosophila brain. This opens up new opportunities to understand how neurotransmitter clearance outside of canonical pathways contributes to learning and memory. Research questions: - Does loss of DAT in non-dopaminergic neurons impair the ability of flies to form or retain associative memories? - Does the absence of DAT in these non-dopaminergic neurons change the activity patterns of downstream neurons during learning? - Are specific phases of memory (e.g. acquisition, consolidation, retrieval) differentially affected when DAT is removed from these neurons? - How does suppression of DAT in these neurons influence memory performance and circuit function during ageing?
Suggested output	Presentation to the research group at the end of the internship. Possible presentation of research results in a poster at the Neurofly conference in Cologne, Germany (early September 2026) if funding is available.

Essential Skills needed for Applicants	Curiosity, Patience, Accuracy.
Further details	N/A
Open to multiple scholars?	One but I can accommodate a 2nd student if needed.

Biosciences continued

Project title	*Using technology and big data to assess the impacts of rewilding in the UK*
Academic Lead(s)	Rebecca Senior
Faculty of Project	Science
Department of Project	Biosciences
Project description	The specific research activities of this internship are flexible depending on the skills, experience, and interest of the student. One of the key envisaged activities is assisting a PhD student, Cameron Goodhead, in conducting vegetation surveys of sample plots in several rewilding sites, including Dundreggan and Mar Lodge, both in Scotland. These data will be used to ground-truth drone surveys conducted by Cameron and collaborators at QMUL (Queen Mary University of London). Subsequently, the student will assist in quantifying how rewilding changes 3D vegetation structure, and whether this trajectory of change is deemed desirable or not in different contexts. This could be used to answer critical questions, such as whether rewilding increases biodiversity, carbon storage and aesthetic/cultural value, or whether these outcomes are in conflict? We have also deployed acoustic sensors in another Scottish rewilding site, Carrifran, where we already have microclimate data and LiDAR data capturing ground vegetation structure. The student could therefore assist in analysing these data to determine whether rewilding in Carrifran has increased the complexity of vegetation structure, and therefore boosted avian biodiversity?
Suggested output	Suggested outputs include at least one research article on the outcomes of rewilding in Scotland, aiming for a journal like the Journal of Applied Ecology. We would also prepare a presentation or poster to share with partner organisations, such as Borders Forest Trust, Trees for Life or Rewilding Britain.

Essential Skills needed for Applicants	- Data analysis - some experience with sorting and analysing data, preferably in R or a willingness to learn basic R - Writing skills - it is expected that the student will assist with preparing a research article for publication in a peer reviewed journal - Enthusiasm and tenacity - shortfalls in skills or experienced can often be overcome if a person is motivated enough!
Further details	N/A
Open to multiple scholars?	Two scholars.

Computer Science (4 projects)

Project title	*Adapting Classical Scientific Computing Methods to be Energy-Aware*
Academic Lead(s)	Christopher Marcotte
Faculty of Project	Science
Department of Project	Computer Science
Project description	Classical scientific computing focused almost exclusively on the scaling of workloads across computational resources i.e. high-performance computing (HPC). In the modern era, we are more concerned regarding the energetic impact of our computational workloads and the efficiency of our codes. Driven somewhat by this awareness, multi-precision methods and asynchronous computing have driven us to engage with low-power computing (LPC). This motivation is sometimes put blithely: "your phone is more powerful than the computer which took [humanity] to the moon". Adapting our existing scientific computing methods for the modern age requires a reconsideration of priorities; we will identify promising algorithms from scientific computing and adapt them for modern low-power hardware, and monitor and characterise their performance in terms of relevant quantities (e.g. energy, power, runtime). This may include asynchronous methods, modern concurrency models, low-level reimplementations, or investigating the utility of modern programming languages to exploit their features. Scholars will work to identify and understand a relevant algorithm and attempt to answer research questions like: 1. What features of classical scientific computing algorithms makes them amenable to reconsideration in terms of their energy use? 2. What features of modern hardware affect the performance and energetics of the computation? 3. To what degree can energy usage be forecasted, and can that be used to guide execution in constrained environments?

	4. What gaps in existing tool hinder the adoption of low-energetic forms of computation?
Suggested output	The scholar is expected to maintain a repository of their code for the duration of the project. The scholar will also produce a short scientific report on their main findings, and a small academic poster of similar focus.
Essential Skills needed for Applicants	The scholar must have an interest in scientific computing, a solid understanding of numerical programming, and some facility with standard complexity analysis.
Further details	As this project focuses on the development of software, many of the skills scholars will develop through the project relating to project management, software development, and testing will serve them well throughout their careers. Additionally, taking part in a research project early in your academic career can have huge impacts on your long term success!
Open to multiple scholars?	This project can support up to three, provided they have chosen sufficiently different algorithmic foci.

Computer Science continued

Project title	*Detecting and Refining Topological Features in Mesh-based Simulations of Cardiac Electrophysiology Models*
Academic Lead(s)	Christopher Marcotte
Faculty of Project	Science
Department of Project	Computer Science
Project description	Cardiac electrophysiology concerns itself with the propagation of electrical waves through cardiac tissue, which ultimately controls the contraction of the muscle tissue, and the movement of blood through the circulatory system. There are innumerable models of the details of these systems, specialised to species, disease, and even region within the heart, corresponding to parabolic, elliptic, or other types of partial differential equation. A commonality of these models is the kinds of solutions they admit on the scale of tissues, namely waves, and the formation of stable topological features arising from those wave interactions. These topological features are important for understanding the types of arrhythmias the heart can develop and sustain. In simulations of these models, the topological features of the solutions are difficult to identify on-the-fly -- so typically under-resolved -- and slow to identify after the fact (as the solution must be re-loaded). The central goal of this project is to develop an efficient pipeline for the identification of topological features in on-line numerical simulations of cardiac models. Scholars will work to understand the finite element method for this class of problems and to address some of the following research questions: 1. How can information of topological features be used to influence refinement patterns in simulations of cardiac electrophysiology models? 2. What effects does including the identification and refinement of topological features have on simulation performance? 3. Can the identification of topological features be made robust in scenarios where the solution collapses (when the heart stops beating)?

	4. How should one adapt the methodology for different finite element bases or discretisations?
Suggested output	Scholars would be expected to maintain a repository of their code during their project, and share this with the supervisor. The functioning of their code base would form the basis of a summary scientific-style report on their findings, and a small poster with similar focus (i.e. scientific).
Essential Skills needed for Applicants	Scholars will have some familiarity with numerical approximation (i.e. polynomial interpolation typical of finite element methods), have some facility with C++ programming, and should have an interest in scientific computing, generally.
Further details	The project pulls from disparate (and advanced!) topics in scientific computing, but the actual focus of the scholar is tractable for a student with curiosity and dedication. A successful research project early in their academic career can lead to significant advancement in later years, and the skills scholars will develop would serve them well regardless of their career trajectory.
Open to multiple scholars?	This project could support up to 2 scholars.

Computer Science continued

Project title	*Tunable Fidelity Probabilistic Root-Finding of Noisy, Expensive, Functions*
Academic Lead(s)	Christopher Marcotte
Faculty of Project	Science
Department of Project	Computer Science
Project description	In classical scientific computing, we begin with an interval containing a sign-change of an objective function with importance for our application area. We bisect the interval by sampling, and discard the half-interval which no longer contains a sign change. This process repeats until the sign change location is determined to a user-specified tolerance, or our computational resources are exhausted. This is the bisection method, and it provable converges to the sign-change in exact or finite arithmetic, and performs reliably (if slowly!) in practical problems. When our objective function is not perfectly deterministic -- that is, when we can only evaluate it probabilistically due to error, noise, or cost -- we rely to the probabilistic bisection method. This treats the location of the sign change as a distribution over the interval, and samples of the noisy objective function sequentially changes our likelihood of the location of the sign change. In classical analyses of the method, the cost of the function is constant and so is the variance of the noise of the output. In this project we will consider functions which have tunable fidelity -- like solvers for ordinary differential equations -- and investigate methods for tuning root-finding to exploit this parameter. Scholars will work to understand the probabilistic bisection method and investigate several research questions relating to it: 1. Can tunable fidelity be useful for determining the root of the highest-fidelity form of the function? 2. Can heuristic strategies be developed to exploit this tunable fidelity to accelerate the determination of the root? 3. Can we determine appropriate bounds for the convergence of these methods? 4. Can we prove that the method remains guaranteed to converge when the fidelity is variable?

Suggested output	Scholars would be expected to maintain a repository of their code for the duration of their project. The scholar will write a brief scientific report summarising their findings, and produce a small academic poster with a similar focus.
Essential Skills needed for Applicants	A successful scholar will have some curiosity regarding scientific computing, a willingness to learn numerical and probabilistic programming techniques, and some basic facility with Bayesian statistics and probability theory.
Further details	The project focuses on an apparently esoteric problem within the domain of scientific computing; however, the impact of a successful project in this regard would be significant, and may dramatically affect technical approaches in applied sciences. Furthermore, the research skills learned in the project would serve the student well into the future, and potentially significantly affect their long-term prospects, especially academically.
Open to multiple scholars?	One scholar.

Computer Science continued

Project title	*Recovering fine-scale seismic features from coarse models*
Academic Lead(s)	Anne Reianrz
Faculty of Project	Science
Department of Project	Computer Science
Project description	When modelling how seismic waves travel through the Earth, researchers often simplify the problem by using homogenised models. These replace complex, small-scale geological variations (like alternating thin layers of rock) with an averaged, coarse-scale version that is much easier to discretise and thus much cheaper to simulate. This process is called homogenisation. In many cases it is the only computationally tractable method for simulating a given problem. But this simplification comes at a cost: high frequency data and important fine-scale features are lost in the process. This project asks: Can we go in reverse? Can we recover meaningful fine-scale features from a homogenised (i.e. smoothed or averaged) seismic model? This is known as the inverse homogenisation problem, and it is an ill-posed problem, which means it has no unique solution. In this project you will consider: - What additional assumptions are needed to make this possible? For instance, can additional physical constraints yield a family of plausible solutions? - Under what circumstances does additional information allow for a unique solution? - Optionally: How do modern machine learning methods for superresolution relate to this problem? Can they offer useful intuition or tools? The goal is not to solve this problem in full generality, but to gain insight into when and how it might be solvable.

Suggested output	A short technical report detailing the approach taken, theoretical considerations, and reflections on what features are or are not recoverable. Depending on the outcome, this report has the potential to be extended into a journal or conference publication.
Essential Skills needed for Applicants	- Basic knowledge of differential equations and a strong interest in numerical methods - Interest in abstraction and generalisation from specific examples - Willingness to engage with unfamiliar mathematical or computational concepts
Further details	N/A
Open to multiple scholars?	Open to two scholars.

Engineering

Project title	*Microwave antennas design framework for quantum computing with ultracold molecules*
Academic Lead(s)	Roy B. V. B. Simorangkir
Faculty of Project	Science
Department of Project	Engineering
Project description	Quantum computing with ultracold molecules requires microwave antennas with precise polarization control, yet no framework exists to predict whether a design will work before expensive prototyping. Currently, researchers rely on costly trial-and-error optimization, unable to predict antenna performance from simulations. The applicant will bridge this gap by developing the first predictive design framework for quantum control antennas. Through electromagnetic simulation of successful published designs (including their operating environments), the applicant will identify near-field characteristics that correlate with quantum performance, establish metrics that predict success before fabrication, and create design guidelines for the quantum community. The proposed designs will be fabricated by Durham Physics collaborators, and in Summer 2 the applicant will participate in testing these prototypes with ultracold molecules, validating the developed theoretical framework in cutting-edge experiments. This project develops leadership through interdisciplinary communication, creating a common technical language between antenna engineers and quantum physicists who rarely interact effectively. By establishing validated design methodology, the applicant will accelerate quantum technology development beyond what either community could achieve independently. Strong background in electromagnetics or wave physics is essential; quantum physics knowledge is helpful but not required.
Suggested output	• Technical report documenting predictive design framework with identified near-field metrics (E-field vector distributions, polarization uniformity measures, phase coherence volumes, field component ratios)

	• Validation study comparing predictions against published quantum experiments from leading groups • Design portfolio of new antenna geometries optimized using the developed framework, with complete simulation files and fabrication specifications
Essential Skills needed for Applicants	• Wave physics/Applied electromagnetics - understanding (or at least willingness to learn) of antenna theory and electromagnetic field behaviours • Computational proficiency - ability to learn simulation software (ANSYS/CST/COMSOL) • Analytical thinking - capacity to identify patterns across complex multidimensional field data
Further details	N/A
Open to multiple scholars?	We can accommodate 2 scholars working on complementary analyses. Scholar A could focus on electromagnetic field decomposition and spatial characteristics while Scholar B investigates polarization evolution and temporal coherence. Both work simultaneously in Summer 1 analyzing the same antenna designs from different perspectives, synthesizing findings into a unified framework. This collaborative approach mirrors real research teams and provides peer support.

IPPP (Institute for Particle Physics Phenomenology)

Project title	*Agent-based simulation of the spread of pandemics, both past and future*
Academic Lead(s)	Gavin Woolman and Frank Krauss
Faculty of Project	Science
Department of Project	IPPP (Institute for Particle Physics Phenomenology)
Project description	Simulations are one of the best tools to help prepare and manage outbreaks of communicable diseases. JUNE is an agent-based model that can simulate the spread of pathogens, and provide forecasts or insight into the disease, to help inform policy makers. The model can output a huge amount of statistical data. However, for that data to be useful it needs to be easily visualised by stakeholders. They need to be able to see the graph they need on the axis they want easily. Many stakeholders will not be proficient programmers, or will not have time to familiarise themselves with a complex code. A tool is needed to take the outputs of JUNE and package them in a digestible way that can be easily interpreted by the user. The student would help create this tool, which could hopefully then be made available to users.
Suggested output	A visualising dashboard designed to help people who are not proficient programmers easily view outputs of interest from the model. Potentially, a review on how to communicate information about pandemics (lots of research on this since COVID).
Essential Skills needed for Applicants	- An interest in computer programming (python), and learning new programming skills. - An appreciation for statistics (fitting, uncertainties) and how it can be communicated. - Creativity, and an eye for design --- particularly around scientific communication.
Further details	N/A

Open to multiple scholars?	Open to two scholars.

Mathematical Science

Project title	*How can we perform a statistical analysis on problems in high dimensions, both with and without appropriate restrictions?*
Academic Lead(s)	Reza Drikvandi
Faculty of Project	Science
Department of Project	Mathematical Science
Project description	The question which we wish to investigate is: "How can we perform a statistical analysis on problems in high dimensions, both with and without appropriate restrictions?" The main aim with this project is to use the ideas of 'shrinkage' and 'linear regression' in order to develop a new method for solving the high-dimensional problems mentioned above. We aim to further the research being completed by other teams across the world in order to find a solution which is both mathematically correct, and applicable to real-world situations. Once this method has been developed, we believe that it will be important to develop common statistical constructs for these problems. These constructs include confidence intervals and standard deviations (which are general statistical values which help to describe data and test hypotheses). I fully support the project proposed. This project aims at understanding and developing "high dimensional statistical models" for analysis of high dimensional and big data, which are rapidly growing in numerous fields due to the data revolution and the technological advances producing such big data. Specifically, the main objective of the project is to understand and provide new research ideas for "valid post-selection inference in high dimensions" which is currently under-studied due to its mathematical complexity. During the project, I closely work with the applicant and provide continuous support to him/her throughout his/her project period. We will hold regular meetings in my office, twice every week or more depending on the project progress, to discuss the work and ideas and to ensure the project goes in the best possible direction. I help the applicant with reading resources and statistical programming as required. Since the topic of this project directly relates to my own research, I am hopeful that the applicant can produce new

	insights in this important research area and prepare ideas for research publication in the near future.
Suggested output	This project proposes to complete the proposed research in the form of a mathematical report or paper. This way, the proposed research is able to be cross-referenced and checked by experts in the field across the world, thus allowing us to tweak and make improvements to the methodologies and propositions as we complete this research. The overall upshot of this project is that it allows for the large swathes of data which currently exist in the world to be analysed correctly. Currently, such data (as held by healthcare providers, banks, pharmaceutical companies and utilities providers) is being incorrectly analysed and interpreted using the common statistical practices outlined above. It has been proven that these methods do not work for such large quantities of data, and hence these corporations are making decisions which are misinformed based on the results that they have. This is a large problem, as these decisions could have long-lasting and potentially harmful affects on both individuals and the world as a whole (depending on the appropriate sector).
Essential Skills needed for Applicants	Good knowledge in mathematics and statistics at the level of Year 2; some programming skills in R or Python;
Further details	N/A
Open to multiple scholars?	One scholar, but two should also work.

Psychology (8 projects)

Project title	*Is encouragement during a mental rotation task effective at improving women's self-confidence and STEM attitudes?*
Academic Lead(s)	Linda Arrighi
Faculty of Project	Science
Department of Project	Psychology
Project description	Although men and women are generally similar in their cognitive and psychological profiles, specific spatial abilities, such as mental rotation, have reliably shown sex/gender differences favouring men. Previous studies have investigated the role of sex hormones and/or sex/gender stereotypes, finding that both biological and social factors as well as their interactions affected the size of sex/gender differences in mental rotation (Hausmann et al., 2009). Self-perception of own spatial abilities, measured by constructs such as self-confidence, self-efficacy in spatial abilities, and spatial anxiety, have also been investigated in this context. A recent meta-analysis found significant sex/gender differences (i.e., men showed better self-perception of their spatial abilities, Matthews et al., 2023) and multiple studies found associations with mental rotation performance (e.g., Alvarez-Vargas et al., 2020; Arrighi & Hausmann, 2022; Cooke-Simpson and Voyer, 2007; Estes & Felker, 2012). Self-perception of spatial abilities and mental rotation performance are important beyond the lab, as both were associated with interest in STEM careers (e.g., Lennon-Maslin et al., 2024), a field in which persistent sex/gender gaps exist with under-representation of women (Women in Science & Engineering Campaign, 2023). Recent studies have shown that encouragement may be particularly effective in improving gender imbalances in technical fields and improving women's self-confidence (e.g., Lovász et al., 2022; Unkovic et al., 2016).
Suggested output	Depending on the scholar, either a report or an academic poster to bring to a conference. A research article may be also produced as part of the project - this is contingent on the relative success of participant recruitment.

Essential Skills needed for Applicants	Organised; Detailed; As the project will be hosted on Qualtrics, good IT skills are desirable.
Further details	N/A
Open to multiple scholars?	I am open to supervising up to 4 scholars if needed.

Psychology continued

Project title	*Curiosity in Context: Applying Cognitive Science to Learning in Higher Education*
Academic Lead(s)	Jacky Chan
Faculty of Project	Science
Department of Project	Psychology
Project description	Curiosity is a foundational mechanism that motivates humans to seek, explore, and construct new knowledge. Yet, its cognitive mechanisms - described as the pursuit of optimal uncertainty, information gain, and learning progress - have rarely been translated into higher education practice. Research in Cognitive Science has shown that learners seek out stimuli of intermediate complexity (the "Goldilocks effect"; Kidd, Piantadosi, & Aslin, 2012) and that curiosity enhances memory and learning by activating reward systems in the brain that are linked to information seeking (Gruber, Gelman, & Ranganath, 2014). Computational and neural accounts further highlight how curiosity guides exploration and attention (Gottlieb, Oudeyer, Lopes, & Baranes, 2013; Oudeyer & Kaplan, 2007). This project aims to bring insights from Cognitive Science into teaching and learning within higher education by testing how curiosity can be cultivated. Teaching methods informed by curiosity theories will be devised and evaluated for their effects on engagement, conceptual understanding, and equity in participation. Combining quantitative measures (e.g., the Epistemic Curiosity Scale; Litman, 2008) with qualitative reflections, this research will develop practical and inclusive teaching frameworks that nurture curiosity and foster learning within higher education. Potential projects include: 1. Do strategies informed by curiosity theories improve engagement, conceptual understanding, and retention of taught material? 2. How do curiosity-driven learning activities interact with students' diverse cultural, educational, and linguistic backgrounds? 3. How can curiosity be cultivated within diverse student populations to foster equitable engagement and belonging?

Suggested output	The project could potentially lead to a publication in an academic journal and presentations at academic conferences.
Essential Skills needed for Applicants	Effective communication skills; Excellent organisational skills; Good understanding of both quantitative and qualitative research methods
Further details	N/A
Open to multiple scholars?	Up to three scholars

Psychology continued

Project title	*The cross-cultural development of emotions and empathy in early childhood*
Academic Lead(s)	Zanna Clay
Faculty of Project	Science
Department of Project	Psychology
Project description	This proposed project would fit into the context of a larger longitudinal research study I am leading which explores the cross-cultural development of empathy and emotions in infancy and early childhood. We have been conducting longitudinal cross-cultural research with infants from rural and urban Uganda and the UK from 3- 36 months, about how they develop empathy, emotional expressions and prosocial behaviour. As we have now collected data on these populations from 0-3 years, I would be interested to supervise a project to explore how empathy develops in the next phase of childhood- specially how emotions are expressed and the role of culture in empathy expressions aged 3-5. Potential research questions: How do young children express their emotions and how is this shaped by their cultural background? Does empathy vary across different cultural settings, and how is children's empathy shaped by their culture and upbringing?Are children sensitive to cultural expectations about emotions and empathy? Do different cultures have different expectations of their children to behave empathically and express their emotions? How do children learn to express empathy and who do they learn from?

	How does maternal mental health shape children's emotional development and to what extent does this vary according to cultural setting?
Suggested output	The student would be expected to design a short study, with main data to be collected during summer 2026 . This could involve data collection only in the UK but also potentially in Uganda, at the supervisors field-site in collaboration with a local team. The output would be expected to be a report which may form the basis of an academic article/publication. The student would also be encouraged to present this work at a conference
Essential Skills needed for Applicants	Independence Experience or strong interest in working with children Interest in cross-cultural approaches If fieldwork is of interest : Experience living/working in basic conditions with limited access to amenities.
Further details	This research could be undertaken primarily in the UK and/or Europe; however for an ambitious student, fieldwork could take place in Uganda at my fieldsite which I have been actively running since 2021. I have supervised undegraduate placement students and postgraduate students at this site, and it would offer a fantastic opportunity for a student to conduct cross-cultural research. This would obviously require careful consideration of health and safety but would be an exciting opportunity.
Open to multiple scholars?	2-3

Psychology continued

Project title	*From Care to STEM; perception and engagement of STEM among children and young people in STEM*
Academic Lead(s)	Amanda Ellison, Alison Lane, Giammarco DiGregorio
Faculty of Project	Science
Department of Project	Psychology
Project description	Young people who are raised in care are eight times less likely to enrol in university and to choose STEM subjects. Part of the problem is the lack of access to informal STEM activities - experiences that are known to help children build a positive STEM identity early on. Research shows that young people's relationship with STEM is driven by identity, specifically whether they see themselves as 'science people' (also known as STEM identity): every one-point rise on the STEM-identity scale nearly doubles a student's likelihood of pursuing a STEM career. Yet, there is still no programme dedicated to sparking curiosity about STEM among children and young people in care. There is currently no data exploring their experiences and perceptions around STEM. This project will allow a Laidlaw Scholar to make a real difference in terms of our understanding of these gaps and apply their knowledge to the development of real and measurable change. Therefore, we have devised three initial research questions: 1. What does STEM identity look like amongst care-experienced young people? 2. Which factors - placement stability, school changes, access to STEM role models, or caregiver support - most strongly predict positive STEM identity development? 3. What kinds of support do care-experienced young people say would most help them sustain interest and success in STEM? This research will be carried out through an online survey, featuring questions designed to explore STEM identity and career awareness. Sample items include: "People like me can be successful in science", "I can imagine myself working in a science-related career" and "There

	are many different types of STEM careers, including creative and people-focused roles" (rated on a scale from Strongly Disagree to Strongly Agree). The student will have genuine ownership of the project and be encouraged to take leading role at every stage, while also receiving close support and guidance of the supervisory team.
Suggested output	Report,research article and a presentation to charities/local government policy makers
Essential Skills needed for Applicants	Curiosity Passion for social mobility and justice Communication skills
Further details	We have supervisory capacity to accommodate up to two scholars. Hosting a second scholar would enable the project to collect a richer body of data and to explore in greater depth the nuanced intersections and challenges faced by children in care. Each scholar could work on a slightly different angle of the research such as socio-economic demographic, before coming together to co-develop a proposal for their Leadership in Action project.
Open to multiple scholars?	We recognise the training and experiential scope of this project that will further scholar's intellectual, personal and emotional development. We are a passionate and diverse supervisory team with a range of expertise to provide a rich contextual experience for a scholar.

Psychology continued

Project title	*Characterising sleep and tiredness in infant learning*
Academic Lead(s)	Samuel Forbes
Faculty of Project	Science
Department of Project	Psychology
Project description	We currently have existing and ongoing collection for data examining how sleep and tiredness affect word learning in infants. The word learning takes the form of an eye-tracking task, while the sleep and tiredness are collected through a questionnaire. So far we have looked at how the outcomes of learning are affected, but we want to go a step further and look at how the live learning process is affected in more vs less tired infants. The scholar would be able to spend time understanding, visualising and analysing this novel dataset with support, and be able to answer how tiredness is affecting infant learning as an ongoing, dynamic process. The scholar will additionally be given training in infant research methods and trained in novel techniques.
Suggested output	We would support the scholar presenting the poster at the Wolfson Early Career Conference or equivalent early career conference such as the Psychology Early Career Conference. Where results are publishable they will be included on a research article as an author as well.
Essential Skills needed for Applicants	Conscientious, enthusiastic, good with children.
Further details	We are a recognised training lab by the International Congress on Infant Studies and can guarantee high-quality training and mentorship through the period of the internship and thereafter as well.
Open to multiple scholars?	Could be 2 if needed.

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Psychology continued

Project title	*Building Blocks of School Success: Cognitive, Neural, and Environmental Foundations of Early Math Skills*
Academic Lead(s)	Anna Matejko
Faculty of Project	Science
Department of Project	Psychology
Project description	How does the home math environment contribute to the development of children's math skills in the preschool years? What neural biomarkers are associated with emerging mathematical abilities in children ages 2–5? Do home math experiences and neural markers interact to predict school readiness in math? Are the home math environment and the home language environment unique or overlapping predictors of early math skills? How do these relationships (environmental and neural) change across early childhood (ages 2–5)? Do individual or family factors (e.g., socioeconomic background, language development) moderate the effects of the home environment on early math outcomes?
Suggested output	Literature review or poster presentation
Essential Skills needed for Applicants	Experience working with children Some basic statistical knowledge (e.g. what is a correlation, what is a t-test?)

	Interest in working with families
Further details	Would require work with young children (ages 2-5) and a DBS check.
Open to multiple scholars?	One scholar

Psychology continued

Project title	*NewSense: Perception with new sensory signals*
Academic Lead(s)	Marko Nardini
Faculty of Project	Science
Department of Project	Psychology
Project description	As a starting point, applicants could look at these recent studies we have carried out as part of this project: Short review: Nardini et al (2025) https://link.springer.com/article/10.1007/s41133-024-00075-7 Other recent publications: see https://www.durham.ac.uk/staff/marko-nardini/ Experimental tasks/setups (some described in these papers) include - sensing the distance or left-right location of an object via sound - sensing object weight via sound or new visual cues - in progress: using tactile signals on the arm to localise objects in VR Current research questions include: - how can we best understand individual differences in abilities to learn and use new sensory signals? - how can we best exploit existing multisensory and spatial associations to improve learning? e.g. for most people higher pitch goes with "up", but for some signals these mappings are not known, and they also vary across individuals. There are also potentially many other ideas / research Qs to explore.
Suggested output	The student could choose to write a report or to put together an oral or poster presentation. I would encourage them to make the major output an academic poster presented at a friendly/ small-scale academic conference (e.g. Experimental Psychology Society). This provides good experience and is a good ahievement to be able to list on a student's academic CV.

Essential Skills needed for Applicants	(1) An aptitude for using quantitative methods to study behaviour. Psychology students may have some idea of what this involves from their initial introduction to perception and psychophysics (we will expand on this). Non-psychology students should be happy to learn to use quantitative approaches to measuring and modelling perceptual abilities. (2) An aptitude for communicating with, organising, and scheduling participants for research studies - including e.g. keeping in touch with participants over the course of multiple follow-up sessions of training and testing.
Further details	N/A
Open to multiple scholars?	Up to two

Psychology continued

Project title	*How real-world scene knowledge shapes visual object perception and representation*
Academic Lead(s)	Sara Spotorno
Faculty of Project	Science
Department of Project	Psychology
Project description	During life experience with visual surroundings, we acquire knowledge (schemas) about the probability of object presence and placement within everyday environments (real-world scenes): e.g., toasters are likely to be found in kitchens, not in bathrooms, placed on countertops rather than on the floor. These scene schemas guide how we explore the visual world, often leading an advantage for expected, schema-consistent compared to unexpected, schema-inconsistent objects, as reported in tasks such as visual search. However, little is known about (Q1) whether scene schemas influence visual object awareness and (Q2) whether and how differences in visual inspection due to schema consistency results in differences in visual memory representation of objects within scenes.
Suggested output	Conference presentation and/or research article.
Essential Skills needed for Applicants	Critical analysis skills; ability to work independently and as part of a team; communication skills.
Further details	The findings will have theoretical impact and will also be relevant for situations requiring quick visual awareness, like reacting to risk, or where promoting visual strategies to improve memory is crucial, such as in education. Moreover, they may contribute to supporting individuals with visual attention or memory difficulties.

Open to multiple scholars?	Two

Faculty of Social Sciences & Health

Anthropology

Project title	*Social tolerance and social learning in humans and non-human primates*
Academic Lead(s)	Rachel Harrison
Faculty of Project	Faculty of Social Sciences & Health
Department of Project	Anthropology
Project description	The proposed project is to explore the role of social tolerance (the tendency to spend time in proximity to others around valuable resources) in facilitating social learning (learning from others) in humans and non-human primates. Social tolerance is hypothesised to facilitate social learning, and the project will explore potential between-species and between-group differences in both tolerance and learning. Multiple groups of children, chimpanzees, and vervet monkeys have been provided with an artifical foraging task, from which rewards can be retrieved by manipulating a puzzle box. This task was provided to entire social groups (e.g. nursery classes, groups of sanctuary-housed chimpanzees, and groups of wild vervet monkeys). You will be provided with video records of these experiments, from which you can extract key information regarding which individuals solved the task, the solution used, and who observed whom. To do this, you will be trained in using open-source video coding software and provided with an ethogram to apply to the videos. Using the resulting data and network-based diffusion analysis, you will be able to explore whether individuals socially learned solutions to the task, whether social information spread more rapidly in more socially tolerant groups, and whether social information spread more rapidly in more socially tolerant species.
Suggested output	Research article.

Essential Skills needed for Applicants	Basic knowledge of R for data analysis though training will be provided
Further details	N/A
Open to multiple scholars?	Two

Archaeology

Project title	*The St. Oswald's Churchyard Project: Cemeteries and Communities*
Academic Lead(s)	Catherine M. Draycott
Faculty of Project	Faculty of Social Sciences & Health
Department of Project	Archaeology
Project description	1) What is the extent of recording and information on St. Oswalds' burial grounds and what has not been done? 2) How can one co-design a project with multiple stakeholders that addresses that gap and other identified interests?
Suggested output	1) database or Excel sheet and digital archive that consolidates the data from tomb surveys and gravestone recording in department (involves transfer of older database on floppy disk into current software). 2) 2,000-word final report and 15-minute slide presentation with descriptive outline of the existing data assets gathered on the St. Oswald's burial grounds, indication of gaps in the data and ways forward. 3) organisation of a set of recorded presentations under the Community Conversations (Meaningful Monuments) series founded by the supervisor originally through CVAC: https://www.youtube.com/playlist?list=PL1zMD_kTXdjwdmmqfEXS8eixH_wfLDgwK which could incorporate the scholar's presentation.
Essential Skills needed for Applicants	1) there may be mobility challenges navigating the graveyards in person, although this it would not be essential to visit them (they are near the department) 2) computing skills: basic Excel; Powerpoint; Word 3) ability to intellectually process and describe clearly the kind of projects previously conducted and kind of data gathered, consolidate the data into one Excel sheet or database, and analyse the gaps in the data collected.

Further details	This project supports young scholars who will have the potential to become experts in mortuary archaeology and heritage, which is underrepresented in research at Durham currently. It is an important field of heritage and material culture studies with wide applications across the nation and world, making it an exciting opportunity to develop a career trajectory in this field, or to gain general experience in working with communities and developing critical awareness of the built environment and social history.
Open to multiple scholars?	One, but can accommodate two who work as a team.

Durham Law School & Collingwood College

Project title	*UK migration*
Academic Lead(s)	Thom Brooks
Faculty of Project	Faculty of Social Sciences & Health
Department of Project	Durham Law School & Collingwood College
Project description	I am happy to work with students interested in asylum, migration or citizenship issues. The kinds of questions they might explore includes: what to do about small boats? How should UK asylum policy be reformed? Should the UK change the immigration system to attract more wealth? How might the government better protect borders? Should the Life in the UK test be reformed? How might the points based migration system be improved?
Suggested output	Outputs can include a project with poster. I have supported students sharing findings with MPs.
Essential Skills needed for Applicants	High interest. Motivation. Ability to work independently. (It is not relevant if they have prior familiarity with immigration policy or legal knowledge.)
Further details	N/A
Open to multiple scholars?	I am happy to supervise up to 3

Education (2 projects)

Project title	*Digital Companions: How Young Adults Use AI for Emotional Support and Connection*
Academic Lead(s)	Dr Sarah A. Walker
Faculty of Project	Faculty of Social Sciences & Health
Department of Project	Education
Project description	Artificial intelligence (AI) tools such as ChatGPT, Replika and other conversational systems are increasingly used by young people not just for information, but for emotional support and companionship. This project explores how young adults (aged 18–25) use AI for emotional connection, why they turn to these systems, and how such use may influence their wellbeing and relationships with others. Working with your supervisor, you will investigate: 1. What motivates young adults to seek emotional or relational support from AI systems? 2. How do they experience and evaluate these interactions? 3. What impact might AI-based emotional support have on wellbeing and human connection? The project can take a mixed-methods approach (for example, a short online survey and follow-up interviews) or a qualitative approach (interview or text analysis), depending on your interests. This research will provide insight into how digital technologies shape emotional life and will help inform ethical and educational approaches to AI use among young people.
Suggested output	The project is expected to produce a co-authored publication reporting the study findings, targeting an academic journal focused on psychology. The scholar and supervisor will also deliver a joint presentation in the School of Education Research Seminar Series during the 2026/27 academic year to share results and implications for research and practice. In addition, the scholar will create a public-facing infographic and accompanying blog post to communicate key findings about young adults' use of AI for emotional support and its implications for wellbeing and relationships.

Essential Skills needed for Applicants	1. Strong written communication and critical thinking skills, particularly for synthesising academic literature and articulating ideas clearly. 2. Interest and sensitivity in discussing topics related to emotion, wellbeing, and technology use, with an ability to engage ethically and respectfully with participants. 3. Basic research and data-handling skills, such as familiarity with qualitative analysis (e.g., thematic coding) or willingness to learn these methods.
Further details	N/A
Open to multiple scholars?	We could accommodate up to three scholars as/if needed.

Education continued

Project title	*CALM: Collaborative and Active learning for Mental Health*
Academic Lead(s)	Dr. Michael Priestley
Faculty of Project	Faculty of Social Sciences & Health
Department of Project	Education
Project description	Current research consistently identifies increasing and unequal levels of loneliness across the UK university student population, leading to poorer mental health, academic performance, attendance, and retention. In response, existing policy and practice guidance has advocated collaborative pedagogies, defined as tasks and activities that promote working together in small groups. However, there remains a dearth of evidence regarding prospective first year undergraduate students' perspectives on collaborative pedagogical approaches, particularly among international students and in the context of higher rates of social anxiety following the Covid-19 pandemic. This discrepancy in pedagogical expectations between students and staff can negatively impact on learning and wellbeing.

Building on the findings of ongoing work and in partnership with a national mental health charity, the project will respond to the research question: 'what are accessible, acceptable, and effective collaborative pedagogical approaches in a contemporary UK higher education context for undergraduate students?' 'What pedagogical scaffolding is required to support all student demographics to understand and engage with collaborative pedagogical approaches?' What is the impact on student learning and wellbeing? How can this be evaluated so that changes are attributable to the approach? |
| **Suggested output** | A presentation. |

Essential Skills needed for Applicants	Knowledge and understanding of evaluation Problem solving skills
Further details	N/A
Open to multiple scholars?	One scholar.

Law

Project title	*Surrogacy and parental orders: an analysis of court judgments*
Academic Lead(s)	Dafni Lima
Faculty of Project	Faculty of Social Sciences & Health
Department of Project	Law
Project description	The student doing research on this project will be searching the BAILII case law database for Family Court judgments on surrogacy cases. They will be reading, summarising and categorising the judgments and orders to offer research assistance with a systematic content analysis. Their work will help determine what are they key questions that the courts focus on and how they approach them. They will be specifically looking into the following research questions: - What are the key issues and problems that courts encounter when dealing with surrogacy cases? - How do the courts approach cross-border surrogacy cases? - What role does the child's welfare play in court judgments?
Suggested output	The scholar would be expected to produce a systematic report on how courts approach surrogacy cases, helping in answering the questions above.
Essential Skills needed for Applicants	- A basic understanding of law and ability to read and understand court judgments (knowledge of surrogacy law is desirable but not necessary - this can be discussed during the project) - Strong communication skills and the ability to produce a report - Good independent research skills

Further details	N/A
Open to multiple scholars?	I am happy to supervise one or two scholars.

SGIA (School of Government and International Affairs)

Project title	*Building a Comprehensive Candidate-Level Election Dataset for the UK (1832–2024)*
Academic Lead(s)	Resul Umit
Faculty of Project	Faculty of Social Sciences & Health
Department of Project	SGIA (School of Government and International Affairs)
Project description	This project forms part of a wider initiative to build the most comprehensive candidate-level dataset of UK parliamentary elections, covering all general elections from 1832 to 2024. The dataset collates information such as candidate names, party affiliation, and votes received, and makes these data openly available for research, teaching, and public engagement. The six-week project has two main components: (1) digitising historical electoral records and integrating them into the existing dataset, and (2) producing a short blog post that communicates findings from the dataset to a wider audience through an accessible outlet such as the LSE blogs. Applicants will be encouraged to develop their own research question that can be explored using the dataset. To support this, an example list of possible questions will be provided, such as: - How has party competition evolved in a particular constituency over time? - What does candidate-level data reveal about the rise of smaller parties in UK elections? - How did voter turnout and candidate competition vary across different regions in the 19th and 20th centuries? The project therefore combines archival research and data management with the opportunity to design and carry out a focused piece of independent research, while also developing skills in communicating findings to non-specialist audiences.

Suggested output	- A contribution to the development of a quantitative dataset of candidate-level results from UK parliamentary elections (1832–2024), including digitised and validated historical records. - A blog post that addresses a focused research question using the dataset, written for an accessible academic communication outlet (e.g., LSE blogs).
Essential Skills needed for Applicants	- Attention to detail and accuracy – essential for digitising historical records and validating data. - Analytical and problem-solving skills – to identify inconsistencies in records and think critically about electoral data. - Clear written communication – to present findings effectively in a blog post aimed at a wider audience.
Further details	One practical consideration is that my department (SGIA) does not have any dedicated workspace for this role. Based on my experience supervising a summer student this year, alternative arrangements (such as access to library facilities or flexible use of shared spaces) will need to be made. I will work with the scholar to ensure they have appropriate access to the resources required to complete the project successfully.
Open to multiple scholars?	One or two scholars.