Royal Academy
of Engineering

Request for Proposal: Feasibility study into longitudinal EDI research

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Summary of invitation

The Royal Academy of Engineering is pleased to invite proposals for a feasibility study to evaluate the potential, risks, opportunities, and optimal methodologies for conducting a longitudinal research study into the barriers that underrepresented engineers encounter throughout their careers. This initiative stems from a literature review conducted by Nottingham Trent University, which assessed the state of Equality, Diversity and Inclusion (EDI) research in the engineering sector over the past decade.

The literature review, titled "Equality, Diversity & Inclusion in Engineering: A Decade in Focus," published in December 2023, analysed 506 documents from various sources. The findings underscored several critical needs for future research, particularly the adoption of a longitudinal approach to better understand the systemic issues and barriers faced by underrepresented groups in engineering.

In response, The Royal Academy of Engineering is planning to embark on a pioneering research project to address this gap. We are seeking researchers to help evaluate the feasibility of conducting a longitudinal study that explores the lived experiences of underrepresented groups in engineering compared to their overrepresented counterparts. By examining these experiences, we aim to identify potential barriers to career progression and solutions that will address those barriers.

As a national Academy, we are well-placed to take a long-term perspective and invest in a multi-year research project. Meanwhile our organisational strategy has a key focus on diversity within the engineering profession, and the importance of drawing on all parts of society to fill the skills gaps in engineering. As a result, the Academy is keen to take forward a longitudinal approach to the questions around underrepresentation of a range of groups in engineering. In order to achieve this, our first step is a feasibility study to build our capability and help us to become an 'intelligent buyer' of longitudinal research.

This feasibility study will play a crucial role in shaping future research initiatives aimed at fostering a more inclusive and equitable engineering sector. We invite proposals from experienced researchers and organisations with a proven track record in EDI research and longitudinal study design.

We strongly encourage research agencies and researchers from underrepresented backgrounds to pitch for this research project. This includes Black-owned, disabled-owned, minority-owned, LGBTQ+ owned, and women-owned agencies. We believe in fostering diversity and inclusivity within the research community, and your unique perspectives and expertise are invaluable assets. Join us in addressing this critical research gap and paving the way for a more diverse and inclusive engineering workforce.

Objectives

The feasibility study should address the following:

- What are the considerations, risks and opportunities involved in conducting a longitudinal study to examine the barriers affecting underrepresented engineers throughout their careers, and what methodologies would be most effective in conducting such a study?
    o By underrepresented engineers, we include women engineers, certain minority ethnic engineers and disabled engineers, all of whom are underrepresented in the engineering profession in comparison to the national working-age population, and/or who experience differential barriers to progression in engineering careers.

- What are the risks of a longitudinal study?
    o What methods of risk management can be used?
    o To what extent can risks be mitigated, and what risks would have to be accepted?
    o What strategies could be used to co-construct the study with participants as a method for participant attrition management?
    o What other areas of risk merit particular attention?

- How can a longitudinal study effectively track and document the career trajectories, experiences, and outcomes of underrepresented engineers over a period of up to 20 years?
    o By underrepresented engineers, we include women engineers, certain minority ethnic engineers, disabled engineers, and engineers from LGBTQ backgrounds, all of whom are underrepresented in the engineering profession in comparison to the national working-age population.
    o We would like the feasibility study to investigate the practicality and usefulness of tracking a sample of engineers at various career levels, whether it would be most useful to focus on entry-level engineers and track their careers, or whether any possible longitudinal research should track engineers across various career levels.
    o What methodology would need to be employed?
    o How long should the study be planned for?

- How should the study reporting cycle be constructed? How might interim reports document progress as well as offer insights, adapt the study to participants' evolving needs, and provide early recommendations that can be acted upon?

- What recruitment strategies could be deployed in order to secure and retain research participants over an extended period? How might we mitigate and address participant attrition?

- What approach could be taken to procuring the study and constructing a long-term delivery partnership? What structures and systems are used within existing longitudinal research programmes?

- As well as advising on the feasibility of longitudinal research, we also wish this study to produce substantive novel insights into the career trajectories and experiences of underrepresented engineers. The successful candidate will include a proposal for new research which may be qualitative or quantitative in nature, with the aim of increasing the body of knowledge about engineers from underrepresented groups.

About our organisation

The Royal Academy of Engineering (the Academy) harnesses the power of engineering to build a sustainable society and an inclusive economy that works for everyone.

In collaboration with our Fellows and partners, we're growing talent and developing skills for the future, driving innovation and building global partnerships, and influencing policy and engaging the public.

- As a charity, we deliver public benefit from engineering excellence and technology innovation.
- As a national academy, we provide progressive leadership for engineering and technology, and independent expert advice to government in the UK and beyond.
- As a Fellowship, we bring together an unrivalled community of leading businesspeople, entrepreneurs, innovators and academics from every part of engineering and technology.

In everything we do, we are guided by our five values: progressive leadership, diversity and inclusion, excellence everywhere, collaboration first and creativity and innovation.

The Academy's strategy can be [viewed here](#).

As an Academy we proactively seek to procure services from diverse teams and diverse suppliers. We expect the project to be delivered in line with our values of inclusion and diversity and to the highest ethical standards. Diverse perspectives should be considered in the development of proposals and outputs should be inclusive.

Statement of requirements

1. Summary:

The Royal Academy of Engineering is seeking to commission research to evaluate the feasibility of conducting longitudinal research to deepen understanding of the lived experiences of underrepresented groups within the engineering profession. By examining the career trajectories of underrepresented engineers and comparing them with their more overrepresented counterparts, the study aims to uncover disparities, identify potential barriers hindering career progression and evaluate the effectiveness of interventions.

The commissioned researchers should evaluate the feasibility of completing the steps needed to realise this research project. This includes accessibility of data sources, the process of engaging and retaining participants, methodological frameworks with a specific focus on risks and the approach to stakeholder engagement.

Areas to consider

Assess Viability:
- Evaluate the feasibility of conducting a longitudinal study on underrepresented engineers over a period of up to 20 years.
- Identify the resources, timelines, and infrastructure required to support such a study.

Risk Identification and Mitigation:
- Identify potential risks and challenges associated with conducting a longitudinal study, including participant dropout, data privacy concerns, and funding constraints.
- Propose strategies to mitigate these risks and ensure the study's success.

Methodological Design:
- Develop robust methodologies for tracking and collecting data on the career trajectories and lived experiences of underrepresented engineers.
- Determine the best practices for longitudinal data collection, including frequency of data collection, types of data to be collected, and data management strategies.

Participant Recruitment and Retention:
- Design strategies for recruiting a diverse cohort of underrepresented engineers, including participants from the Academy's Graduate Engineering Engagement Programme (GEEP) and other groups.
- Establish methods for ensuring participant retention and engagement throughout the study period.

Comparative Analysis:
- Assess the comparative advantages and potential limitations of utilising GEEP participants as a cohort for longitudinal research, compared to other possible recruitment strategies.

- Develop a framework for comparing the career trajectories of GEEP participants with other recruited groups, only after determining the most suitable sample for the study.
- Ensure that the selected sample is representative of underrepresented groups to allow for meaningful generalisation of findings. Investigate the impact of various characteristics (e.g. age, nationality, socioeconomic status) on career outcomes.

Opportunities for Impact:
- Identify opportunities to leverage the study's findings to inform EDI policies and practices within engineering organisations.
- Explore potential partnerships with industry stakeholders, professional bodies, and advocacy groups to enhance the study's impact and reach.
- Consider what type of research method/output will bring the most impactful results, by engaging stakeholders in a meaningful way and ensuring findings are relevant and actionable

Community and Stakeholder Engagement:
- Propose strategies for engaging with community partners and stakeholders to gain insights and support for the study.
- Develop plans for disseminating findings to a broad audience, including researchers, policymakers, and industry leaders.

Ethical Considerations:
- Identify and address ethical considerations related to the study, including informed consent, data confidentiality, and participant welfare.
- Ensure that the study adheres to ethical standards and guidelines for research involving human participants.

Long-term Sustainability:
- Explore avenues for securing long-term funding and support to sustain the longitudinal study beyond the initial feasibility phase.
- Propose a governance structure to oversee the study's implementation and ongoing management.

Substantive data and findings:
- As well as assessing the feasibility of future longitudinal research, the investigators should propose options for deriving substantive findings from this initial study. For example, new data or analysis that sheds a fresh light on the experiences of underrepresented engineers. This will complement the feasibility study and add value to existing understanding of how underrepresented groups experience engineering.

2. Scope
The scope of this project encompasses evaluating the logistical and ethical considerations involved in conducting a longitudinal study of this nature in a UK context. Researchers will assess the feasibility of tracking career outcomes and experiences longitudinally, employing robust methodologies to ensure data integrity and participant engagement over a timeframe of 5+ years. Furthermore, the study will explore potential collaborations with industry partners, community stakeholders, and professional bodies to enrich the

research insights and foster broader engagement in addressing diversity and inclusion challenges within engineering.

It is important to note that while the feasibility study will outline the logistical framework and methodological approach for a longitudinal study, it will not include the actual implementation or execution of the full longitudinal research project. Additionally, specific policy recommendations or interventions arising directly from the study's findings may fall outside the immediate scope of this feasibility assessment. The study's focus remains on assessing the initial viability and strategic planning required to undertake such a significant longitudinal endeavour within the engineering profession.

Utilising the Graduate Engineering Engagement Programme (GEEP)

Proposals should consider the comparative advantages and potential limitations of utilising the Graduate Engineering Engagement Programme (GEEP)[1] participants as a cohort for longitudinal research, compared to other recruitment strategies. The Academy's GEEP is aimed at enhancing the career pathways of engineering graduates from diverse backgrounds. GEEP offers participants a structured curriculum, immersive workshops, and mentorship opportunities designed to cultivate skills and foster inclusive practices within engineering sectors.

As part of this feasibility study on longitudinal research into underrepresented groups on engineering, we invite proposals on how researchers can effectively leverage GEEP participants as a potential research cohort.

Proposals should outline strategies for integrating GEEP participants into the study, detailing methodologies for tracking and analysing their career trajectories and experiences. Researchers are encouraged to explore how GEEP's unique framework influences participants' professional journeys and contributes to broader diversity and inclusion goals within the engineering profession. Additionally, proposals should consider comparative analysis between GEEP participants and other recruited cohorts to elucidate key insights into systemic barriers and opportunities for advancement.

We welcome innovative approaches that capitalise on GEEP's strengths to advance our understanding of underrepresented engineers career paths and enhance industry practices accordingly.

3. Methodology
Applicants are expected to detail a comprehensive methodology that addresses the following key aspects:
- Study Design: Clearly define the proposed study design, emphasising the longitudinal approach to tracking underrepresented engineers' career trajectories over a 5-year period.
- Secondary Data Sources: Applicants must outline how they will utilise secondary data to complement qualitative findings. This includes

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[1]The Graduate Engineering Engagement Programme (GEEP) is a programme to support UK engineering students and recent graduates from under-represented backgrounds into engineering employment.

identifying relevant datasets, such as industry reports or workforce diversity statistics, and detailing their relevance, accessibility, and integration into the analysis. Applicants should demonstrate how these sources will triangulate with qualitative findings to enhance insights and provide broader context on the career trajectories of underrepresented engineers.

- Participant Selection: Outline the criteria and methods for selecting participants, ensuring that the sample is representative of underrepresented groups to enhance the generalisability of the study's findings. Consider the inclusion of GEEP cohorts as a potential sample group but also assess the comparative advantages of additional recruited groups to ensure a diverse and representative sample. Carefully consider and address sample representativeness when defining the participant selection strategy, ensuring that the study reflects a wide range of identity characteristics and experiences.
- Data Collection: Specify methods for collecting qualitative and quantitative data on participants' experiences, barriers encountered, career progression, and relevant identity characteristics. Include strategies for ensuring data reliability and participant confidentiality.
- Qualitative Interviews: Conduct qualitative interviews with a subset of GEEP participants and other possible sample groups to explore their experiences, challenges, and perceptions of career progression in engineering. This should involve considering whether innovative research approaches, such as focus groups, documentaries, or participatory research, can produce more insightful findings and engaging outputs like blog posts and videos, that communicate findings to a wider audience
- Stakeholder Engagement: Engage key stakeholders, including programme participants, industry partners, and supporting organisations, to solicit feedback and assess support for longitudinal research.
    - Organise stakeholder workshops or focus groups to discuss the objectives, methodology, and potential impact of longitudinal research.
- Analysis plan: The analysis plan should detail the approaches and tools for examining longitudinal data, focusing on techniques to identify trends and intersections across demographic groups. Additionally, it should be agreed that the data will be passed on to the Academy and in the most accessible formats agreed upon by both parties. A methodological annex should also be included, documenting the steps taken in the analysis to ensure transparency, accountability, and replicability of the study's findings.
- Feasibility Assessment: Evaluate the feasibility of conducting longitudinal research, considering factors such as data availability, participant retention, methodological considerations and output formats.
- Ethical Considerations: Address ethical considerations in participant recruitment, data collection, and analysis, ensuring adherence to relevant legislation, ethical guidelines and standards.
- Risk assessment: Identify potential risks and challenges associated with conducting longitudinal research, such as data privacy concerns,

participant attrition, and resource limitations. Propose mitigation strategies that may minimize these risks.

- Wider Applicability: Applicants should consider how the engineering-specific study could yield insights applicable across STEM and other professional fields, addressing broader EDI challenges such as occupational segregation and pay gaps. This includes demonstrating how findings can bridge evidence gaps by providing both in-depth sector-specific analysis and transferable lessons to inform wider policy and practice.

4. Timing

Activity	Date
Request for Proposal opens (calling for proposals to carry out the research)	25 November 2024
Submission for clarification of questions	2 December
Academy to respond to and to publish our responses to clarification questions	16 December
Request for Proposal deadline to be returned to us	13 January 2025
Interviews for potential suppliers for RFP	W/C 20 January
Deadline to decide on preferred supplier	W/C 27 January
Meeting with the successful supplier	W/C 27 January
Contract signing (first payment)	W/C 3 February
Interim update 1	April (TBC)
Second payment	April (TBC)
Interim update 2	June (TBC)
Third payment	June (TBC)
Final report	September (TBC)
Final payment	November (TBC)

1. Structure of the bid
Applicants are requested to structure their bids in the following manner to facilitate a comprehensive evaluation:

a) Cover Page: Include a cover page with
   i) the project title,
   ii) Applicant organisation's name,
   iii) contact information,
   iv) date of submission.

b) Executive Summary: Please provide a concise summary of the proposal, highlighting key points such as the proposed methodology, objectives and anticipated outcomes of the feasibility study. The executive summary should serve as a snapshot of the entire proposal.

c) Introduction: Introduce the applicant organisation, its expertise in EDI/longitudinal studies, and its understanding of the objectives and scope of the feasibility study.

d) Methodology: Detail the proposed methodology for conducting the feasibility study, addressing study design, participant selection, representativeness of the sample, data collection methods, analysis plan, ethical considerations, attrition levels and risk management strategies.

e) Research Plan: Outline a timeline and milestones for executing the feasibility study, including tasks, responsibilities, and deliverables at each stage of the research process. Please be mindful to include plenty of time for feedback from the Academy and iteration.

f) Team Qualifications: Describe the qualifications and expertise of the proposed research team, highlighting relevant experience in EDI research, longitudinal studies, and collaboration with industry and community stakeholders.

g) Budget: Present a detailed budget proposal, including funding requirements for personnel, equipment, travel, and other necessary expenses related to the feasibility study.

h) Evaluation Criteria: Address how the proposal meets the evaluation criteria outlined in the RFP.

i) Appendices: Include any additional relevant documents such as organisational profiles, letters of support, CVs of key personnel, and examples of previous similar projects.

Applicants are encouraged to adhere to the specified structure to ensure clarity and completeness in their proposals. Proposals should be concise, well-organised, and responsive to the requirements outlined in this RFP.

2. Key outputs
Applicants are expected to delineate the following key outputs that will result from the feasibility study:

a. Feasibility Report: A comprehensive report detailing the findings of the feasibility study, including an assessment of the viability and methodologies for conducting longitudinal research on underrepresented engineers within the engineering profession.

b. Methodological Framework: A robust methodological framework outlining the proposed study design, participant selection criteria including how sample representativeness and attrition issues are being taken into account, data collection methods, analysis plan, and ethical considerations.

c. Data Collection Tools: Developed tools and protocols for data collection, including surveys, interview guides, and mechanisms for tracking participant outcomes over a 5 to 10-year period.

d. Analysis and Interpretation: Detailed analysis of data collected, identifying trends, patterns, and barriers faced by underrepresented engineers in their career trajectories. Interpretation of findings to inform policy and practice.

e. Comparative Analysis: Comparative analysis between GEEP participants and other recruited groups, providing insights into

differential experiences and career outcomes based on demographic and identity characteristics.

    f. Strategic Recommendations: Evidence-based recommendations for carrying out longitudinal research.

    g. Stakeholder Engagement Plan: A plan for engaging with industry partners, community stakeholders, and professional bodies to disseminate findings, gather feedback, and foster collaboration in implementing recommended strategies.

    h. Dissemination Products: Preparation of interim and final reports, presentations, and other dissemination products to share research outcomes with academic audiences, policymakers, and the broader engineering community.

Applicants should demonstrate a clear understanding of the expected outputs and their relevance to advancing diversity and inclusion efforts within the engineering profession. Proposals should outline methodologies for achieving these outputs, emphasising rigor, innovation, and potential for actionable insights.

3. Experience:
   Applicants should demonstrate substantial experience and expertise in the following areas relevant to conducting a feasibility study on longitudinal research into underrepresented groups in the engineering profession:

    a. EDI Research: Provide evidence of previous experience in conducting research related to Equality, Diversity, and Inclusion (EDI) within STEM fields, particularly in engineering or related disciplines. Highlight any publications, reports, or projects that showcase your organisation's contributions to EDI research.

    b. Longitudinal Studies: Demonstrate proficiency in designing and implementing longitudinal studies, including tracking participants over extended periods to analyse trends and outcomes. Describe methodologies used, key findings, and lessons learned from previous longitudinal research initiatives.

    c. Sector-specific Knowledge: Showcase knowledge and understanding of the engineering sector, including familiarity with industry dynamics, workforce demographics, and challenges faced by underrepresented groups in engineering careers.

    d. Collaboration and Stakeholder Engagement: Provide examples of successful collaborations with industry partners, community stakeholders, and professional bodies to address diversity and inclusion challenges. Describe your approach to engaging stakeholders in research design, implementation, and dissemination.

4. Inclusive and ethical working:
   We expect the project to be delivered in line with our values of inclusion and diversity and to the highest ethical standards. We expect to see diverse perspectives considered in the development of all proposals and that all outputs are considerate of a wide range of audiences. As an Academy we proactively seek to procure services from diverse teams and diverse suppliers.

5. Deliverables:
   - o Feasibility Report written to a publishable standard, to include:
       - Risk matrix
       - Methodological Framework
       - Data Collection Tools
       - Strategic Recommendations
       - Stakeholder Engagement Plan
   - o Report of substantive findings on the career trajectories and experiences of engineers from underrepresented groups
   - o Presentation to the Academy's senior leadership

6. Budget:
   - The budget – a detailed budget breakdown. The Academy welcomes creative solutions and attention to detail.

We expect to spend £40000-£50000 on this commission (excluding VAT).

Please send your clarification questions and submissions to:
Yohanes Scarlett, Research and Policy Advisor, Diversity & Inclusion,
Yohanes.scarlett@raeng.org.uk copied to diversityteam@raeng.org.uk

Your response

Please include the following in your proposal:
   - Cover Page
   - Executive Summary
   - Introduction
   - Methodology
   - Research Plan
   - Team Qualifications
   - Budget
   - Evaluation Criteria
   - Appendices

Deadline for proposals: 13 January
Schedule

Date	Activity Number	Activity
25 November	1	Issue of RFP (this document) to potential suppliers
2 December	2	Deadline for submission of RFP clarification questions to RAE
16 December	3	Deadline for RAE to respond to all clarification questions
13 January	4	Deadline for return of RFP
W/C 20 January	5	Interview

W/C 27 January	6	Notification of preferred supplier
W/C 27 January	7	Meet with successful supplier

Scoring matrix

0	No Answer/Unacceptable Response
1	Very Poor Response
2	Poor Response
3	Acceptable Response
4	Good Response
5	Excellent Response

To score well (i.e. 3 and above) the evaluation panel will look for clear evidence. The scores will be weighted to give an overall score. The tables below indicate the weightings which will be applied to each section. The three highest scoring proposals will be invited to the Academy to present their proposal.

At interview, we will consider all criteria. The scores given before the interview may be amended following new information provided at interview.
Selection criteria

Your response will be evaluated using the following:

Section:	Programme Content			
Description of criteria		Score	Weighting	Max Points
Quality, appropriateness and novelty		0–5	5	25
All key research areas covered		Yes / No	Pass / Fail	
		Total	25	

Section:	Methodology			
Description of criteria		Score	Weighting	Max Points
Approach to methodology		0-5	3	15
Additional services and technical assistance		0–5	1	5

Experience of similar service provision - Details of work previously completed for other clients	0-5	1	5
		Total	25

Section:	Schedule		
Description of criteria	Score	Weighting	Max Points
The timescale to successfully deliver is realistic	0-5	1	5
Delivery process is clear and realistic	0-5	1	5
		Total	10

Section:	Cost:		
Description of criteria	Score	Weighting	Max Points
Is competitively priced	Yes / No	Pass / Fail	
Has accounted for all cost to deliver proposal	0-5	1	5
Expenditure broken down and pricing clear	0-5	1	5
Risk of budget overspend	0-5	1	5
		Total	15

Section:	Organisation		
Description of criteria	Score	Weighting	Max Points
Suitability of the organisation	0-5	1	5
Suitability of the investigators	0-5	2	10
Is a diverse supplier/promotes diversity and inclusion	Yes / No	Pass / Fail	
Client References - suitability of nominated references	Yes / No	Pass / Fail	
Client References - quality of reference received back	Yes / No	Pass / Fail	
		Total	15

If you wish to receive any additional or updated information, please ensure that you register interest prior to submitting the proposal. All proposals must remain valid for a period of 90 days from the date of submission by the vendor. This RFP and the information contained within it are deemed to be confidential information. Proposals must include information about costs and state whether these do or do not include VAT or any other levies. By submission of a proposal, the vendor warrants that the prices in the proposal have been arrived at independently, without consultation or agreement with any other potential vendor.