

Project Proposal Application

To be completed by the lead proposed supervisor,
with input from the non-HE Partner Organisation(s).



**Arts and
Humanities
Research Council**

SECTION 1: PROJECT SUMMARY AND APPLICANT DETAILS			
Proposed Project Title:	Co-Designing Digital Tools for Physical Activity: Enhancing Engagement in Disadvantaged Communities Through Inclusive Design		
Project Summary: <i>(Maximum 100 words)</i>	This project, in collaboration with Rise North East, aims to increase physical activity among underrepresented groups in disadvantaged communities in the North East by applying inclusive design principles to sports technologies. Current technologies emphasise performance over inclusivity, failing to meet diverse needs. Our focus will be on inclusivity, broadened participation, and sustained engagement in sports. We will conduct ethnographic research to understand community dynamics and current technology use, then co-design and test digital tools within these communities. Outcomes will include design recommendations and a toolkit to promote equitable access to physical activity and address the digital divide, ensuring long-term impact.		
Host University:	Northumbria University		
Name of Non-HE Partner Organisation(s): <i>(Add more lines if needed)</i>			
1. Rise North East (Rise) (www.wearerise.co.uk)			
2.			
Contact(s) at Non-HE Partner Organisation(s): <i>(Add more lines if needed)</i>			
Name:	Clare Morley, Chief Executive Officer. Rise North East.	Email:	_____
Name:	Paul Biddle, Strategic Lead for Research & Insight. Rise North East.	Email:	_____
Name:	Jade Scott, Strategic Lead for Place. Rise North East.	Email:	_____
Primary AHRC Subject Area: <i>Select one subject area from the list here. Please do <u>not</u> add or amend subjects, as there will not be a corresponding Subject Area Review Panel to assess your nomination.</i>	Design		
Does the project include a Creative Practice component?	YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>	
Do you consider the project to be interdisciplinary?	YES <input checked="" type="checkbox"/>	NO <input type="checkbox"/>	

If you consider the project to be interdisciplinary, please state why:

*(Maximum 100 words. Please note that your application will be assessed by the relevant **primary AHRC subject area review panel**. However, in this space you should indicate which other subject areas your proposal covers and how your methodology is genuinely interdisciplinary.)*

The research aims to develop, evaluate, and disseminate a design toolkit, fitting squarely within the AHRC subject area of design. However, while design is the core focus of this project, it also integrates perspectives from human-computer interaction (HCI), social sciences, sports science, and public health. HCI, particularly SportsHCI, is inherently interdisciplinary, drawing from multiple fields to inform design practices, including Information Communication Technologies (ICT). This multidisciplinary approach enriches the design process, providing a comprehensive understanding of the problem space and ensuring robust, inclusive solutions. The interdisciplinary aspects enhance the project's design focus, making it more impactful and innovative.

SECTION 2: PROJECT PROPOSAL AND CASE FOR SUPPORT

Please provide full details of the proposal and make your case for support below:

(Maximum 750 words)

Background

Regular exercise offers substantial health benefits, improving both physical and mental wellbeing. Yet, inactivity is a significant public health challenge, with about one-third of adults in England being inactive. This issue is particularly prevalent among older adults, women, ethnic minorities, and those from lower socioeconomic backgrounds, especially in the North East, with barriers including lack of social support, motivation, and access to facilities [1].

Digital technologies, such as activity trackers, apps, and social media platforms, have potential to support activity among underrepresented groups. However, their effectiveness is limited by design challenges, including complex data representations, unrealistic performance expectations, and digital exclusion [3]. Many existing designs cater to athletic audiences and emphasise performance over inclusivity, which fails to meet diverse users' needs [2].

Despite the potential, there is limited understanding of how digital technologies can be inclusively designed to enhance engagement in sports. This gap in knowledge underscores the need for research into inclusive digital design to support greater diversity and sustained engagement in physical activity.

Research Aims

This project aims to explore how inclusive design of digital devices, platforms, and services can support greater diversity and sustained engagement in physical activity and sport. Supported by Rise North East, the candidate will work with 2-3 specific place-based communities, integrating with Rise's initiatives with disadvantaged groups. Rise facilitates inclusive community groups that use sport for social change and development, focusing on accommodating diverse needs. Fieldwork will follow Rise's best practice guidance, and ethical approval will be obtained from Northumbria University's Ethics Committee. The overall goal of this research is to broaden participation and encourage lasting engagement in sports and physical activity, by addressing the unique needs of these community members through inclusive design.

Research Objectives and Approach

- **Objective 1, Ethnographic Research in Existing Place-Based Communities:** The student will integrate into selected communities, supported by Rise, to understand their dynamics, challenges, and opportunities. This involves investigating how these communities currently use technologies. The aim is to understand dynamics and identify opportunities for digital technologies to enhance engagement.
- **Objective 2, Co-Creating Digital Technologies with Community Members:** Building on insights and relationships developed during Objective One, the student will co-create digital technologies tailored to the communities. These will serve as "research probes," helping both researchers and communities explore potential benefits and challenges. The solutions may include novel devices, platforms, and prototyped interactive experiences.
- **Objective 3: Engagement and Impact Evaluation:** The candidate will assess the impact of these technologies on sustained engagement beyond an initial "novelty" period. This will involve qualitative methods such as interviews and focus groups to understand long-term user experiences and identify factors contributing to sustained participation. Community engagement and fieldwork will be completed by the end of this objective. *Objectives 2 and 3 will be conducted iteratively to allow for continuous refinement based on community feedback.*
- **Objective 4: Co-Creation of Toolkits and Design Recommendations:** Based on insights from previous phases, we will develop and share design recommendations and a community-facing digital toolkit. This toolkit, aimed at local councils, community leaders, and physical activity charities, will be co-created with Rise and stakeholders to ensure it is useful, usable, and capable of driving real change. The toolkit will demonstrate how digital technologies can transform engagement with sport in communities.

Project Timeline (42 months)

- **Months 0-6:** Orientation, literature review, methods planning, and project approval.
- **Months 6-12:** Ethnographic fieldwork within communities (RO1).
- **Months 12-27:** Co-design workshops and prototype development (RO2); and evaluation (RO3).
- **Months 27-30:** Co-creation of toolkit with Rise and target stakeholders (RO4).
- **Months 30-42:** Finalising the PhD thesis; dissemination of toolkit publications and resources.

Expected Outcomes

This project will culminate in design recommendations and a digital toolkit aimed at enhancing engagement in physical activity within disadvantaged communities. By focusing on inclusivity and long-term engagement, rather than athletic performance, this research seeks to transform how technology is used in community sports settings across the North East. The outcomes will demonstrate the potential of inclusive design to promote equitable access to physical activity and address the digital divide. This project will advance the field of SportsHCI by furthering the inclusive agenda and contributing to the growing body of literature on broadening participation through innovative design approaches.

References

1. Public Health England. (2019). *Physical activity: applying All our Health*.
2. Harrison, D. (2024). Cycling for Fun, Not Fitness: Sports Tracking Is Not All About Performance. In *CyclingHCI, A CHI'24 workshop*.
3. Elvitigala, S., Karahanoglu, A., Matviienko, A., Turmo Vidal, L., Postma, D., Jones, M., ... & Mueller, F. (2024). Grand Challenges in SportsHCI. In *CHI '24*.

Provide details of any resources and facilities, including equipment, fieldwork, training, etc., that will be required to complete the project successfully. NBC has limited Research Training Support Grant funding, which may affect the feasibility of high-cost projects. Please note where you might also secure additional funding, (e.g. partner organisations; department or school). Include estimated costs:

(Maximum 200 words)

The candidate will receive extensive research training and support from Northumbria University, the School of Design, Arts and Creative Industries (DACI), and Rise. DACI provides comprehensive training for doctoral candidates, providing a solid foundation in design research methodologies, including user-centred and participatory design. Northumbria also offers training on ethics, Equality, Diversity, and Inclusion (EDI), and research methods tailored to HCI and community engagement. Depending on the candidate's background, modules from MA Design programs will be available to enhance their subject-specific skills. Rise will provide context-specific training and facilitate access to specific communities in the North East, offering practical insights into community-based research.

Essential items, such as audio recorders and design materials, will be sourced from internal university resources. DACI provides ideation spaces, prototyping tools, and computing resources. For fieldwork, regional transportation costs are estimated at a maximum of £500 per annum during the fieldwork phase. Additionally, a budget of a maximum of £1,000 is estimated for community-specific sports technologies, which will be determined following research objective one. Existing departmental resources will be prioritised, and additional funding will be sought through our research group and school. The student can also apply for internal funding to cover publishing and conference attendance costs.

Outline the arrangements for communication between the non-HE partner organisation and the academic host institution in regard to project management and monitoring academic progress:

(Maximum 200 words)

The candidate will be based in CoCreate, within the Department of Arts, Creative Industries, and Design (DACI) at Northumbria University, with community fieldwork facilitated by Rise. At the outset, there will be close collaboration between Rise and Northumbria supervisors (Dr Harrison and Dr Rooksby) to align expectations and help the student acclimate to the project. Dr Harrison will conduct biweekly progress meetings, while Dr Rooksby will attend meetings every 12 weeks. Rise collaborators will join key progress meetings every six months, either virtually or in-person.

Rise has offered the student access to their offices and will facilitate access to community organisations, networks, and gatekeepers, providing mentoring support if required. Mrs Scott from Rise will manage the student's engagement with communities, aligning with Rise's wider community engagement work around "place."

Regular updates from the student to Mr Biddle at Rise will ensure alignment with Rise's evolving needs. Visits to Rise will be scheduled according to the project's phase—more frequent during intensive community engagement and less so during toolkit development. These meetings will also serve to monitor and evaluate the candidate's skills development, ensuring the student is well-prepared for key milestones such as Project Approval and Annual Progressions.

What benefits will there be for the candidate and the non-HE partner organisation as a result of your collaboration?

(Maximum 200 words)

The collaboration offers mutual benefits through knowledge exchange and capacity building. The digital toolkit, led by the academics and PhD student, will be co-created with Rise to ensure it is suitable for them and similar organisations.

Benefits for the Candidate:

- Access to diverse exercise communities in the North East, facilitating impactful research with real-world change potential.
- Opportunities for immediate real-world impact as findings are shared with Rise and their communities.
- Professional experience and community connections through direct collaboration with Rise.
- Integration into Northumbria's design research community, enhancing career development.

Benefits for Rise:

- High-quality research aligned with their focus on "Harnessing Data, Digital and Tech," supporting work with local communities.
- Actionable insights to improve programs, services, and community engagement.
- Evidence to support health equity campaigns and policy work.
- Strengthened partnership with Northumbria University for future collaborations.

This partnership aligns with Rise's place-based work in Gateshead and South Tyneside, managed by Mrs. Scott, set to complete by March 2028. The PhD's timeline ensures community engagement and fieldwork are completed before this date, providing timely insights and benefits.

This collaboration will advance Rise's mission of improving wellbeing for underserved groups through physical activity while providing the candidate with invaluable professional development opportunities.

State what financial (if any) or in-kind contribution the non-HE partner organisation will be making over the duration of the award:

*(Maximum 200 words. A financial contribution is **not** a requirement. However, the AHRC expect that **non-HE partners based overseas** will make a financial contribution to the costs of the student's return travel and accommodation when visiting.)*

Rise North East will provide in-kind contributions throughout the award, enhancing the project's impact and ensuring its alignment with community needs. There will be no direct financial contribution expected from Rise. In-kind contributions include:

- **Access to Communities:** Rise will facilitate access to communities in Gateshead and/or South Tyneside, allowing the PhD student to conduct ethnographic research and engage directly with underrepresented groups.
- **Training and Guidance:** Rise will offer context-specific training for the student, focusing on effective engagement with their populations. This includes insights into community dynamics, cultural considerations, and best practices for fostering inclusion and participation.
- **Networking Opportunities:** Through Rise's connections with local councils, Sport England, and other partners, the student will have opportunities to disseminate research findings and increase the project's reach and impact.
- **Co-Creation Support:** Rise staff will actively participate in the co-creation process of the toolkit, ensuring it meets the practical needs of their organisation and similar groups.
- **Office Space:** The student can work in Rise's offices if needed, providing a professional environment for specific project activities.

These in-kind contributions from Rise will be crucial in achieving the project's objectives, providing real-world insights and facilitating a collaborative approach that benefits both the research and the communities involved.

Describe the nature of the collaborative arrangement and the activities the candidate will be undertaking with the non-HE partner organisation:

(Maximum 200 words)

The partnership with Rise is essential for conducting impactful, community-focused research. The candidate will work closely with Rise to ensure the research aligns with community needs and fosters real-world impact through a co-created digital toolkit and academic publications.

Collaborative Activities:

- **Regular Meetings:** The candidate will engage in regular meetings with Rise for guidance on community access, engagement strategies, and ensuring project relevance.
- **Community Engagement:** The PhD will focus on communities, with Mrs. Scott managing the student’s engagement to align with Rise’s wider community engagement work around 'place'.
- **Toolkit Development:** The candidate will develop practical toolkits based on research findings, initially provided to Rise and later made publicly available to empower communities.
- **Research Presentation:** Opportunities will be available for the candidate to present emerging research to Rise and policymakers.
- **Dissemination Support:** Rise will assist in disseminating findings through their website, resources, events, and networks, facilitating access to community organisations and gatekeepers.

This collaboration fosters ethical, participatory research grounded in community priorities and provides valuable professional development for the candidate. It advances Rise's goals through research partnerships and lays the foundation for an ongoing relationship between Northumbria University and Rise to promote equity, inclusion, and wellbeing.

SECTION 3: SUPERVISION AND EXTERNAL ADVISORS

Primary (or Co-) Supervisor:	Daniel Harrison
School or Department:	School of Design, Northumbria University
Email Address:	_____
Secondary (or Co-) Supervisor:	John Rooksby
School or Department:	Department of Computer and Information Sciences, Northumbria University
Email Address:	_____
Advisor based at the Non-HE Partner Organisation:	Paul Biddle, Strategic Lead for Research & Insight.
Organisation/Institution:	Rise North East (Rise)
Email Address:	_____
Advisor based at the Non-HE Partner Organisation:	Jade Scott, Strategic Lead for Place.
Organisation/Institution:	Rise North East (Rise)
Email Address:	_____
Additional Internal or External Advisors or Academic Supervisors, if any:	
Name:	
Organisation/Institution:	
Email Address:	

Explain how the expertise of the supervisory team and external advisor(s) will allow them to support the proposed project and the selected candidate:

(Maximum 500 words)

The candidate will be supported by an experienced interdisciplinary supervision team with significant expertise in Design, HCI, Health, and Wellbeing research. The supervisors are well-versed in Northumbria's PhD programme policies and procedures and have a strong track record of guiding PhD candidates through all research stages. The team has conducted high-quality research on applying technology to support physical and mental health outcomes, while considering potential unintended consequences. Relevant projects include designing systems to promote physical activity and community engagement for isolated groups, developing personal informatics tools for behaviour change, and evaluating technologies for digital phenotyping and patient care.

The supervisory team is committed to fostering an inclusive environment for the candidate. Their combined expertise covers a broad spectrum of methodologies, including qualitative research, system prototyping, co-design, and ethnography, which are essential for the proposed project. The team's focus on design as a primary discipline aligns with the AHRC's emphasis on creative and innovative research.

Dr Daniel Harrison - Primary Supervisor: An Assistant Professor in the School of Design, Arts and Creative Industries (DACI) at Northumbria University, Dr Harrison has a background in HCI and completed his PhD at UCL, focusing on personal informatics for physical activity. His research emphasises digital health technologies that promote wellbeing, physical activity, and social connectedness. Dr Harrison is a member of the growing SportsHCI community, co-authoring the "Grand Challenges in SportsHCI" paper in 2024, and playing an active organisational role in the first SportsHCI academic conference in 2025. He is passionate about inclusivity issues and leads the DACI Athena Swan D-SAT. Dr Harrison is currently the first supervisor to three PhD students, including one working on AI and design in sports activity representations, and second supervisor to two others. His expertise in qualitative research, system prototyping, and evaluation will support this project.

Dr John Rooksby - Second Supervisor: A Senior Lecturer in Computer and Information Sciences at Northumbria University, Dr Rooksby has extensive experience in developing and evaluating digital health technologies using qualitative methods like co-design and ethnography. He has led projects applying technology for physical activity promotion and public health, publishing award-winning papers on personal tracking and digital phenotyping. His expertise in human-centred methods will be valuable in developing the digital toolkit for community physical activity programs.

Mr Paul Biddle - External Advisor: Formerly a Research Fellow at Northumbria University, Mr Biddle brings familiarity with academic research alongside his role at Rise. He provides insight into the project's context while maintaining academic integrity, advising on impactful research conduct and implementation from his dual perspectives.

Mrs Jade Scott – External Advisor: Jade Scott is the Strategic Lead for Place at Rise. She will enable the student to access communities across Northumberland and Tyne & Wear, aligning the PhD student's engagement with Rise's wider community work around 'place'. Her strategic oversight will facilitate meaningful community integration.

The supervisory team's expertise will ensure comprehensive support, advancing design-focused research with significant health and wellbeing impacts, aligning with AHRC's priorities.

SECTION 4: RESEARCH ENVIRONMENT

Please provide details about the research environment the selected candidate will be joining and its suitability:

(Maximum 500 words)

The candidate will join the vibrant research community at Northumbria University's Department of Arts, Creative Industries, and Design (DACI), renowned for its participatory and socially-engaged design research. As a member of CoCreate, a hub for design PhD students and researchers, the candidate will engage in cross-disciplinary research addressing societal issues. CoCreate offers an ideal environment to develop skills in community-based co-design, with expertise across communication, innovation, interaction, and product design. Current projects include co-designing technologies for mental health, tackling digital exclusion among older adults, and exploring values in AI system design and responsible innovation frameworks.

DACI provides exceptional facilities, including studios, labs, and maker spaces. The candidate will have access to desk space, presentation rooms, exhibition spaces, and a graduate student hub for interactions with peers. CoCreate hosts regular seminars, workshops, and informal events to facilitate idea exchange and peer learning. The candidate can join research groups including

Design Feminisms and HCI+Design, offering opportunities for interdisciplinary collaboration, peer support, and access to additional resources.

Northumbria University's broader HCI and design research community includes NorthLab, which connects HCI researchers from Design, Computer and Information Science (where the second supervisor is based), Psychology, and beyond. This network provides the candidate with opportunities to engage with diverse perspectives and methodologies. Additionally, the candidate can collaborate with the Sport, Exercise and Rehabilitation Department, which is renowned for optimizing performance and promoting wellbeing.

A significant addition to Northumbria's research environment is the newly formed "Women's Sport and Wellbeing" interdisciplinary research area. This initiative supports increased research in sports inclusivity and provides a new community of cross-discipline practice within the university. It aligns with Dr Daniel Harrison's growing work in inclusivity and SportsHCI, offering the candidate an enriched environment to explore these themes.

The partnership with Rise North East situates the research in a real-world context. Rise's mission to empower disadvantaged groups through physical activity aligns closely with the project's objectives. As part of a network of 42 active partnerships across England, Rise collaborates with local authorities, public health organizations, transport teams, education sectors, housing authorities, and the criminal justice sector to promote physical activity. Their extensive community ties will enable the candidate to access diverse exercise communities across Northumberland and Tyne & Wear.

Through this collaboration, the candidate will address regional health needs by engaging directly with underrepresented groups. The partnership facilitates real-world impact by allowing the candidate to apply participatory methods that improve health outcomes and reduce inequities. Northumbria's facilities and interdisciplinary opportunities provide an ideal environment for nurturing socially responsible design research.

Overall, this collaborative environment offers a unique opportunity for the candidate to tackle complex societal challenges through design. By combining academic expertise with Rise's practical insights and community connections, the project aims to create meaningful change in promoting physical activity among disadvantaged communities. The integration of diverse research areas within Northumbria University further enriches the candidate's experience, fostering innovation and impactful outcomes in the realm of sports inclusivity and digital engagement.