

## RESPECT 4 Neurodevelopment (R4N) - Call for Pump Prime Feasibility Projects to develop neurotechnologies for infants and children with neurodevelopmental conditions

### Guidance Notes

RESPECT 4 Neurodevelopment is inviting applications for innovative pump-prime feasibility studies focused on neurotechnologies for infants and children with neurodevelopmental conditions.

Our 2023 call will fund up to four multi-disciplinary projects (up to £50,000 per project). The goal of this seed-funding is to demonstrate feasibility or proof-of-concept of innovative ideas that may then underpin and strengthen subsequent larger grant applications. This includes projects that may be considered higher risk but with the potential for transformative results.

The remit of this Request for Applications also includes project proposals that address one or more the core themes of Respect 4 Neurodevelopment:

- **Responsibility** - We invite project proposals that address ethical issues, such as: Who should take decisions about early detection and early neurotechnology-based interventions; how can we define “good outcomes”?; And how can we predict the long-term benefits and risks of early interventions?
- **Reliability** - Before applying any monitoring and/or imaging technique you need to ensure that the measurement is reliable. We invite project proposals that can investigate and develop methods, protocols and analytics to quantify reliability in neurotechnologies (EEG, fNIRS, MRI, ultrasound, eye-tracking, wearables) as they are applied from conception to middle childhood. We are particularly interested in quantitative approaches that produce reliability markers that can serve as an instrument/method test.
- **Scalability** - Most currently used neuroimaging tools are restricted to the specialised lab/ hospital environment and are associated with high costs, making them financially and practically non-viable for repeated use with large populations. We would like to fund projects that will develop and/or test scalable neurotechnologies that can be applied and are meaningful in different settings such as the home or school, and are suitable for use with under-represented groups.
- **Personalisation** - We invite projects focused on methodologies, such as closed-loop approaches, that allow us to move away from one-size-fits-all neurotechnology and towards more adaptable technology that can be tailored to specific characteristics of an infant/ child or other relevant parameters.

### Multi-disciplinary collaborations

Successful applications require developing **multi-disciplinary collaborations** between

- Bioengineers or physicists (including partners from Industry or SMEs);
- Researchers or clinicians focused on child development (e.g., Psychologists, psychiatrists, paediatricians or neuroscientists and allied health or educational professionals);

- Parents, family members and people with lived experience of neurodevelopmental conditions;
- Additional collaborations with further “stakeholders”, including policy makers or health professionals, are strongly encouraged.

#### *How to develop multi-disciplinary collaborations?*

The R4N network was created to instigate and foster multi-disciplinary collaborations between professionals involved in the design and development of next-generation neurotechnologies, researchers and health professionals who are using these devices in hospitals or natural environments for research and clinical purposes, through to end-users – families of (potentially) neurodivergent infants and children. It was motivated by the recognition that in the past, these communities often had little direct access to one another. Hence, we appreciate that prospective applicants may not have access to relevant collaborators outside their own area of research.

To address this issue, we outline two mechanisms:

- (1) Lead applicant(s) are invited to directly contact R4N members who had given permission to share their contact details on the R4N internal website and explore potential collaborations during the preparation of proposals. Please email [R4N@kcl.ac.uk](mailto:R4N@kcl.ac.uk) if you like to be added to the list of network members that give permission to be contacted by others, or if you like to find out about network members that you could contact.
- (2) If the lead applicant(s) is/ are unable to name specific collaborators falling into all three categories in their application, an outline of their role, tasks, and allocated funding for the intended task are expected. The grant may then be *conditionally* awarded, such that R4N will advertise the role among network members to help the applicants finding a suitable collaborator.

Expected duration of each project is 3 months to 1 year. The project could be stand-alone or be part of a larger programme; in the latter case clear demonstration of added value of the feasibility project itself is essential.

Results from these feasibility projects are expected to support larger separate grant applications.

Indicated maximum budget per pilot project is £50,000 (in exceptional circumstances up to £70,000) at 100% fEC.

Costs will cover personnel, i.e., Research Assistant or postdoc time, MRI scanning time, ad hoc remuneration for PPI work, modest equipment, and consumables, including travel to enable lab-visits between Co-Is.

The award will not cover: Admin costs, Industrial partner costs, PhD studentships, continuation of normal research grants, costs related to the protection of IP, or staff exchange into a spin-out company.

## Eligibility and Remit

This call is open to Principal Investigators who are resident in the UK and meet at least one of the eligibility criteria below:

- Lecturers or above at a UK Higher Education institution or NHS bodies with research capacity;
- Postdocs holding a fixed-term contract that extends beyond the duration of the proposed project at a UK Higher Education institution or NHS bodies with research capacity, provided the host research organisation is prepared to give the applicant all the support normally provided for a permanent employee

Collaborations with Co-investigators (Co-Is) including industry partners, academic researchers outside the UK, neurodivergent people collaborating in their role as representing first- and/ or second person lived experience, and other stakeholders are highly encouraged. Funding must be distributed with UKRI rules.

## Timeline and Application Process

- 28 April 2023, Call opens
- 23rd June, Closing date
- Week of 3 July, Shortlisting completed
- 12-24 July, Interviews
- End of July, Decisions announced
- Start date from 1 September 2023

Applications should be submitted on the R4N application form to [R4N@kcl.ac.uk](mailto:R4N@kcl.ac.uk) by 5pm on 23rd June. Applications submitted after this date will not be considered.

The Application Review panel will include members of the Scientific Advisory Board and external Reviewers.