Candidate Information

Position:	Research Fellow - VECTA EPSRC Prosperity Partnership
School/Department:	School of Mechanical and Aerospace Engineering
Reference:	25/112883
Closing Date:	Monday 6 October 2025
Salary:	£41,519 per annum
Anticipated Interview Date:	Thursday 23 October 2025
Duration:	60 months

JOB PURPOSE:

To be a highly productive and ambitious member of the Queen's University Belfast research team working on the five year, EPSRC funded, Vecta Prosperity Partnership (jointly led by the University of Edinburgh and Rolls-Royce). Vecta will research using leading computational design and simulation (FEA and CFD) on the new UK National Supercomputer. More information is available here: https://www.epcc.ed.ac.uk/whats-happening/articles/new-prosperity-partnership-transform-aviation-carbon-emissions; https://www.ukri.org/news/uk-businesses-and-academia-partner-up-in-cutting-edge-research/. Two posts are available to research novel methods for automatically creating extremely large simulation models, including mesh generation and boundary condition application.

The successful applicant will conduct independent research, developing and using geometric and data driven methods, collaborating within Queen's University and externally with the wider Vecta project team. Direct collaboration with industry and academic partners will be a key aspect of the role, including regular visits to research facilities across the UK.

MAJOR DUTIES:

1. Undertake research, under supervision, into state-of-the-art geometric methods to support setting up extremely large simulation models, including mesh generation and boundary condition application.
2. Carry out analyses, critical evaluations, and interpretations of design and simulation data and literature using methodologies and other techniques appropriate for engineering research.
3. Produce high quality research outputs consistent with project aims and commensurate with career stage. This will include collaborating and co-authoring with PI and project team (as appropriate) on outputs.
4. In consultation with the project team, promote research milestones and outputs at national and international conferences.
5. Assist grant holder in the preparation of funding proposals and applications to external bodies.
6. Carry out occasional educational supervision, demonstrating or lecturing duties within the post holder's area of expertise and under the direct guidance of a member of academic staff.
7. Undertake supplementary duties relevant to the success of the project including administrative duties and additional training and development activities as required.

ESSENTIAL CRITERIA:

1. Hold at least a 2:1 honours degree in Mechanical, Aerospace engineering, Mechatronics or closely related discipline.
2. Have, or be about to obtain, a relevant PhD in Mechanical, Aerospace Engineering, Mechatronics or closely related discipline. (Candidates about to receive their PhD should provide proof that their viva is scheduled within three months)
3. Recent relevant research experience to include:
   - Demonstrable experience in the advanced use of Computer-Aided-Design and mesh based Computer Aided Engineering (i.e. FEA or CFD) software tools.
   - A proven track record of using relevant techniques to carry out analyses, critical evaluations, and interpretations of data as relevant to the research project
   - Working effectively as part of a research team in the development and promotion of the research theme.
4. A track record of high quality publications appropriate to stage in career.

5. Ability to contribute to broader management and administrative processes.
6. A sufficient breadth of knowledge of general design methods, Commercial Off-The-Shelf software and manufacturing systems.
7. Ability to work in a team.
8. Willingness to undertake additional training in research methods and other related skills as required.
9. Practical problem solving skills, independence of thought and initiative.
10. Proven ability to communicate complex information effectively in oral and written format.
11. Proven ability to build relationships to develop internal and external networks.
12. Ability to assess and organise resources.
13. Willing to travel to partner facilities on a regular and frequent basis.

DESIRABLE CRITERIA:

1. Demonstrable experience in developing techniques to support mesh generation.
2. Demonstrable experience in automating the use of Computer-Aided-Design or Computer Aided Engineering software tools.
3. Working with industry (or in industry) on research programmes.

ADDITIONAL INFORMATION:

Informal Enquiries to Damian Quinn: d.quinn@qub.ac.uk