Job Description

Job title	Research Associate
Department/School	Mechanical Engineering
Job family	Education and Research
Grade	7
Reporting to	Principal Investigator (PI) or Co-Investigator (CI)
Responsible for	There may be a requirement for: day to day supervision of other staff e.g. technical staff or, co-supervision of doctoral or undergraduate students
Location	University of Bath premises

Background and context
The role will involve analysis and simulation of acoustic metamaterials for noise control on aircraft. Analysis methods will include the Boundary Element Method and/or analytical modelling. The work is part of a Horizon 2020 project, AERIALIST, in collaboration with four other groups in Italy, Ireland, Sweden, and the UK, developing novel concepts for the use of metamaterials for noise control in systems with mean flow, similar to those in aeronautical applications. The University of Bath's contribution to the project is in the modelling and characterization of the materials themselves and of the systems in which they are installed, with a view to predicting the noise control effects which will be possible in applications. The holder of this role will work full time on modelling these materials and characterizing them for inclusion in models of larger systems using the Boundary Element Method and other computational techniques for the prediction of noise from aeronautical systems.

Job purpose
To develop and apply numerical and/or analytical methods to the problem of noise control by metamaterials operating in a mean flow.

Main duties and responsibilities	
	Responsible to the PI/CI for (as appropriate to discipline):
1	Develop and apply numerical methods (Boundary Element Method) and/or analytical models.
2	Writing up results of research and contributing to the publication of results in high-quality peer-reviewed academic literature.
3	Disseminating results of project by presentation at conferences (AIAA, Acoustical Society of America).
4	Attendance at project meetings and communication with project partners.
5	Assist with the supervision of postgraduate students and undergraduate project students and the assessment of student knowledge.
6	Continually update knowledge and understanding in field or specialism to inform research activity.
7	Identify sources of funding and provide assistance with preparing bids to funding bodies. Develop ability to secure own funding e.g. travel grants.
8	Contribute to the development of research objectives and proposals for own or joint research projects, with assistance of a mentor, if required.
9	Disseminate knowledge of research advances to inform departmental teaching.
	You will from time to time be required to undertake other duties of a similar nature as reasonably required by your line manager. You are required to follow all University policies and procedures at all times and take account of University guidance.

Person Specification

Criteria	Essential	Desirable
Qualifications		
PhD or equivalent qualification(s) and professional experience in acoustics, wave propagation, solid mechanics, or fluid dynamics.	√	
Experience/Knowledge		
Post-doctoral experience		√
Demonstrated significant depth and breadth of specialist knowledge of subject matter to contribute to research programmes and to the development of departmental research activities	√	
Demonstrated awareness of latest developments in the field of research and in research design	√	
Demonstrated potential to publish in high quality, peer reviewed journals	√	
Skills		
Ability to prepare research proposals, to conduct individual research work and to disseminate results		√
Ability to organise and prioritise own workload to meet required deadlines	√	
Ability to write research reports and to effectively disseminate outcomes	√	
Excellent oral, interpersonal and written communication skills	√	
Proficiency in High Performance Computing and programming in C in a Unix environment.	√	
Attributes		
Commitment to working within professional and ethical codes of conduct	√	
Innovation and developing creative solutions	√	
Commitment to excellence in research	√	

Enthusiasm and self-motivation	√	
Tenacity – working to achieve own and team objectives and to overcome obstacles	√	
Ability to be an effective team worker	√	
Commitment to safe working practices	√	