Senior Researcher for the PRISM Platform Grant

Researcher: Chris Cantwell

Duration: Underpinning 3yrs (at 50%)

Funding requested

From June 2015, I will be 50% funded for three years by the Department of Aeronautics as a Research Fellow, which will include teaching duties on the undergraduate and masters-level programmes.

This proposal seeks to underwrite the remaining 50% of my position. This portion may in part be funded from other grant applications, subject to their outcome. I am a co-investigator on two project grants already submitted to the British Heart Foundation which, if both are funded, would cover the underwritten component from November 2015. In addition, funding may also come from a recently awarded Horizon 2020 grant, which will start towards the end of 2015.

Furthermore, during this period I will be applying for a number of personal fellowship schemes, as well as applying for academic jobs as they are advertised.

Role

My primary role will be to take on a pro-active leadership role and act as a conduit between the partners involved in the PRISM project. I will continue to coordinate and advise the more junior post-doctoral researchers in the preparation of projects for funding under PRISM, and provide academic support in the organisation of research sandpits and workshops, support visitors and the preparation of publications, as envisaged in the original platform proposal.

I am also a lead developer of Nektar++ and I have extensive knowledge of the code and its architecture. I will therefore maintain a secondary role of advising and training other PDRAs and external collaborators in working with and developing the Nektar++ codebase and solvers, and supporting the overall management of the software project.

Besides these roles, I will pursue specific technical projects in line with the PRISM strategy. The first of these is outlined below, with further projects to be provided in supplementary documents.

Initial Short-term project

Internal Research Data Management (3 months)
Finite element methods are used across a broad range of application areas. Their use for large-scale industrial problems, as well as small-scale academic studies, frequently leads to the generation of large quantities of output data. This data is sometimes included directly in publications, or is more often indirectly used to generate key results. In other cases, such results do not form the basis of research outputs, due to errors or negative results, and may eventually be discarded at a future point.

Building on the recent PRISM RDM microworkshop and *PyRDM*, this project will explore how data generated at the research group level can be effectively curated and stored internally. This is an essential middle stage in order to decide which data to keep and for what duration, which is often only established later in a project. The workplan will be as follows:

- Identify existing software implementations for the physical management and curation (on network disk storage) of research data. For example, the DataFlow data management infrastructure developed at Oxford, or CKAN.

- Investigate their appropriateness for use and how data can be migrated to a longer-term data archive (e.g. institutional or on-line).

- Deploy the system within the Nektar++ group for managing and curating data from a number of on-going projects.

- Report the outcomes of the project to the wider PRISM community.

Alignment with PRISM strategy

- This fulfills the Senior Researcher role in the PRISM platform.

- The position will meet the staff development objective of PRISM by supporting the development of leadership, management and teaching skills.

- This post will also be providing bridging funds between other research grants and to enable me to prepare personal fellowship applications and apply for academic posts.