The case for a National Academy for Mathematical Sciences

The importance of the Mathematical Sciences to global society continues to grow; nationally the voice of the UK Mathematical Sciences community does not sing clearly or loudly. The mission of the National Academy for the Mathematical Sciences is to **advocate for the whole of the mathematical sciences, in all regions of the UK**.

Although the UK has a number of specialist professional and learned societies, our community lacks a clearly-identified, authoritative and effective body to represent our discipline externally. This body must bring together the subject's diverse fields, from pure mathematics through industrial and applied mathematics to statistics and operational research.

Disembodied, our discipline has failed to be recognised nationally for its research excellence, its utility and its transformative power: mathematics underpins a vast array of the immense technological innovations that are shaping our daily lives. As a result, our discipline has not harnessed opportunities that would have a profound effect on research, the wider economy and society as a whole, as well as ensuring its long-term health in the UK.

To achieve its mission, the National Academy for the Mathematical Sciences would work to:

- enhance knowledge exchange between the mathematical sciences, other academic disciplines and all stakeholders outside academe, such as government, industry and commerce;
- coordinate discipline-wide and life-long mathematical sciences education;
- promote and support mathematicians at all career stages and in all areas of employment;
- act as, or broker, a single voice for the mathematical sciences in relationships with Government and funding bodies such as UKRI.

In doing so, the Academy must and will act as an enabler, not a competitor, to enhance the work of individual learned societies and other mathematical sciences organisations: each has its own history, strengths and constituency, all of which are critical to the fabric of UK mathematical sciences. The Academy would develop the mathematical sciences brand within the UK, demonstrating the power and ubiquity of mathematics in society.

Governance:

Every other STEM discipline in the UK has its own version of an academy and its effective voice: the British Computer Society, the Geological Society, the Institute of Physics, the Royal Academy of Engineering (RAEng), the Royal Society of Biology, and the Royal Society of Chemistry. Each has its own governance, specific to the needs and traditions of its discipline. A National Academy for the Mathematical Sciences might broadly follow the model of the RAEng, which works very effectively within a field of strong, successful and diverse engineering societies/institutions. It would have a fellowship fit for the 21st century, drawn from all branches of mathematical sciences, from across academia, industry, and other sectors. Fellows would be expected to make a significant commitment by offering their skills and experience to the activities of the Academy. There would be a strong but small governing Council and, in due course, a high-level professional secretariat.

Funding:

It is anticipated that funding support would be sought from both government and philanthropy. In a fully-fledged state it is envisaged that in the region of £5 million per year would be required to fund a suitable professional secretariat and headquarters, as well as the various activities of a National Academy all of which would be concentrated on the Academy's mission, which in turn would bring increased funding opportunities to the discipline as a whole. In its nascent state, the National Academy would require significantly less funding and could begin with the support of other Mathematical Sciences infrastructure in the UK.