

## **A PARTNERSHIP APPROACH TO RESEARCH FUNDING THE NEED FOR A NATIONAL SCIENCE AND ENGINEERING BOARD**

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### **Functions of the Irish Council for Science, Technology and Innovation (ICSTI)**

- To advise on science and technology policy-related issues in response to specific requests from the Government (through the Minister responsible for Science and Technology) or from the Board of Forfás.
- To advise the Minister responsible for Science and Technology, the Office of Science and Technology and the Board of Forfás, on the Council's own initiative, on policy for science and technology and on related matters.
- To advise the Minister on the strategy for the preparation and implementation of national programmes in science and technology.
- To advise the Minister on the strategic direction for State investment in science, technology and innovation.
- To undertake from time to time such other functions as the Minister may decide. In this case the information sought is to be submitted to the Minister.

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## 1. Introduction

Over the past five years Ireland has developed a mechanism for the public funding of research which is now widely recognised as progressive. The Department of Enterprise, Trade and Employment (DETE) undertakes funding of research in the third-level colleges through the National Research Support Fund Board (the 'Research Board'), set up by the Minister for Science and Technology and operated by Forbairt. The Research Board supports projects in fundamental, strategic and applied research. By this means the DETE ensures that fundamental research of importance to underpin strategic industrial sectors is undertaken and, further, that the findings of such research are made available to organisations capable of exploiting them. Researchers in both the third-level and industrial sectors have come to see this as the preferred approach and this, in itself, represents a major achievement of the enterprise ministry and the members of the Research Board.

Equally, however, it is recognised that the fact that the Department of Education has not, up to now, provided resources specifically targeted at the support of basic research has been a limitation on the funding of public research in Ireland. Allied with the absence of a realistic funding level for research equipment in the colleges this has resulted in a third-level research system that lags far behind that of our competitors; in particular, it has not been possible to build up research groups of any reasonable size staffed by trained research scientists and the system has relied to far too great an extent on post-graduate doctoral students. In this respect it is noted that an adequate infrastructure and a satisfactory level of professionalism within research groups are two of the critical requirements for the effective training of graduates in research and for successful interaction between the third-level colleges and industrial organisations. With the new designation of a Department of Education and Science there is clearly a desire to address the wider remit in the new title. The infrastructure deficiency has been recognised and effectively addressed with the establishment of the Scientific and Technological Education (Investment) Fund. The allocation of £5 million for basic research in 1998 is a very welcome development towards strengthening the research groups.

The Council believes that the time is now ripe to develop a new approach to the funding of all publicly funded research in science and engineering in third-level colleges. This would enable both the education and the enterprise ministries, working together, to take a strategic overview of the nature and quality of such research. The need for this approach, the rationale for the involvement of both departments and the need for urgent action are discussed below.

## **2. A Single Mechanism for Funding Scientific Research**

The Council is convinced that by concentrating scientific research funding through a single well-established mechanism there will be much closer focus on, and better awareness of, the benefits of publicly funded research. A single mechanism would provide greater co-ordination and less likelihood of duplication of funding from different sources, and thus better value for money for the public expenditure involved.

The Council advises that it would not be in the national interest to create duplicate structures for the allocation of research funds related to science and engineering. The existing approach to funding of research in both the third-level colleges and in industry by a single body under the direction of the Department of Enterprise, Trade and Employment is a model being increasingly replicated throughout Europe. It is also a model which, due largely to the excellent work of the members of the Research Board, is seen as transparent, fair and effective. At the same time, with the Department of Education and Science having made resources available for direct funding of basic research, a mechanism is needed for disbursing these new funds.

With this in mind, it is proposed that a National Science and Engineering Research Board be developed as a partnership initiative of the Department of Education and Science and the Department of Enterprise, Trade and Employment.

### **3. The Rationale for a Partnership Approach for Fundamental Research**

The Council also considers that there are compelling but different reasons why both the Department of Enterprise, Trade and Employment and the Department of Education and Science should provide financial support for fundamental science. Such a joint effort would be appropriate at a time when fundamental research, and the highly qualified researchers which it produces, are becoming more and more relevant to technology-based industries.

#### **Department of Education and Science**

The Council considers that the Department of Education and Science should fund fundamental research in third-level colleges for the following reasons:

- To ensure that the staff in third-level institutions, through active, high quality research, can become internationally recognised in their particular areas of specialisation and, thereby, remain capable of offering advanced courses to their under-graduate students which take into account developments at the leading edge of science;
- To encourage graduates to pursue post-graduate research degrees. There is growing evidence that graduates, who in the past would have pursued a higher degree in Ireland, are now entering the job market directly or pursuing their higher level degree abroad. This has already led industrial leaders in the chemical and pharmaceutical sectors to express their concerns to the Government;
- To ensure that the research groups, within which graduates undergo their formation, are fully professional, with high quality staff and appropriate modern equipment.

In short, the Department of Education and Science would fund fundamental research principally to ensure that the necessary environment exists within the third-level sector to ensure that graduates of the highest quality are prepared, through research, for key roles in the laboratory and the boardroom.

#### **Department of Enterprise, Trade and Employment**

The Council considers that the Department of Enterprise, Trade and Employment should fund fundamental research in third-level colleges and industry for the following reasons:

- To support research to underpin industries of strategic national importance, particularly in a number of key, high technology sectors when the gap between fundamental research and industrial application is narrowing rapidly;
- To help to build up clusters of high quality research in key scientific fields;
- To guarantee a continued output of highly trained researchers in key technologies.

#### **4. Immediate Action Required**

A number of recent developments, including the establishment of the £250 million Scientific and Technological Education Fund and the imminent restructuring of Forbairt and other development agencies, are leading to changes in the existing structures and mechanisms for research support. This has led to some, hopefully short-lived, uncertainty and concern in the academic research community. It is critical that this uncertain situation be clarified as soon as possible, preferably by the introduction of the partnership approach outlined above.

It is vitally important that the mechanisms and funding are in place so that those taking their primary degrees this summer can be offered post-graduate positions for the next academic year. Otherwise our best graduates will elect to do their post-graduate training abroad, with serious consequences for our future skills requirements and for the international reputation of Ireland in the field of science and research.

## **5. Conclusions**

The Council is recommending the following actions:

- A new National Science and Engineering Research Board be developed as a partnership initiative of the Department of Education and Science and the Department of Enterprise, Trade and Employment;
- Both the Department of Education and Science and the Department of Enterprise, Trade and Employment should provide financial support for fundamental research. The former Department should do so, via its new allocation for basic research, to build up the critical mass of research groups in the third-level colleges. DETE should do so to underpin industries of strategic national importance;
- Immediate action should be taken because of the existing uncertainty and concern in the academic research community.