


## EPS position paper1

 University of Durham

Department of Physics

Science Laboratories  
South Road  
Durham DH1 3LE, UK.  
Main Switchboard: 0191 374 2000  
Direct Line: 0191 374 2160  
Fax: 0191 374 3749  
E-mail: A.W.Wolfendale@durham.ac.uk

*Still in draft form.*

From the President of the European Physical Society

Eminentus Professor of Physics and Professor of Experimental Physics, The Royal Institution

Sir Arnold Wolfendale FRS

### European Physical Society: Position Paper

#### Physics Research: the Division between University and National Research Institutes

The European Physical Society (EPS) is an independent body funded by contributions from National Physical Societies other bodies and individual members. It has over 80,000 members and can call on expertise in all areas where Physics is involved.

The declared aim of the EPS is to help Physics and Physicists in Europe.

#### 1. Aim of this Position Paper

The aim is to give a balanced view of the appropriateness of organizational arrangements for National Research Institutes (NRI), particularly those in the countries of Eastern Europe which, in the past, relied in part at least on supplying Defence needs.

#### 2. The Rôle of University Research

Universities have always been - and should continue to be - the source of most fundamental research. They are also the training ground for much of a nation's scientific 'manpower'. The interaction of research and teaching is vital.

#### 3. The Rôle of the International Laboratories

In some subjects, principally Particle Physics, Astronomy and Condensed Matter Physics, the needs of experimentation are so great as to be beyond the capacity of a single nation. Permanent scientific staff should be kept to a minimum; cross-fertilization with University Departments and NRI, is vital. The sophisticated techniques developed must be used in national environments.

National funding for the International laboratories must include not only the subscription but also sums for the national science base in order that the appropriate user-equipment can be provided.

#### 4. The Rôle of National Research Institutes

National Research Institutes are, by definition, largely funded by Government.

Ideally, an NRI should have 3-components.

- One with a specific national task, such as Nuclear Technology, Standards, Engineering techniques, Environment, etc.
- A modestly-sized division responsible for fundamental research, some of which is in the area covered by (i).
- Strong links with one or more local Universities (or other Higher Education Establishments) and the provision of training for research students.

It should also have a small section devoted to publicity, viz to make the public aware of its work and be 'citizen-friendly'.

#### 5. NRI in Transition

With the end of the 'Cold War' a number of developments have occurred, as follows.

- In Western Europe, funds for those areas which previously benefited from the Cold War (Space Research, Nuclear Physics....), have been reduced, in relative terms.
- In Eastern Europe, as mentioned at the start, there is an apparent excess of NRI - those which previously had Defence associations.

Here, we concentrate on (ii).

It is tempting to have wholesale closures or 'shot-gun marriages' with Universities. The latter should be resisted; funding shortages will inevitably lead to serious problems for both.

We recommend that serious attention be given to keeping the best NRI, as such. National needs are still manifold and often those associated with the environment have intensified, not least with the need to be 'good-neighbours'. The need for NRI will certainly grow.

Concerning funding, every effort should be made to help the NRI augment their income from private industries, both national and international. The presence of good people with, as-yet, modest salary requirements, makes such Institutes attractive to International companies with specific requirements.

#### 6. Comparisons with other Countries

No two countries are alike in their possession of, and need for, NRI and detailed descriptions are not very helpful. However, the Appendix gives details of one, rather average Western European Country, the U.K.