

# Protocol for the Evaluation of Leading Research Schools 2009- 2010



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Netherlands Organisation for Scientific Research

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# 1 Introduction

**In 1998, in response to recommendations by NWO, the Minister of Education, Culture and Science awarded six research schools funding under a special incentive bonus scheme. The key objective of the scheme is to raise the international profile of the research conducted in the existing system of research schools.**

The incentive bonus scheme has identified and fostered national focuses of excellence in scientific research at research schools. They were expected to compare favourably with leading institutes in other countries working in related fields at the outset (1999), as well as having the potential to develop further into world-class research centres. Further information on this aspect can be found in Appendix A.

The incentive bonus was intended to cover a period up to 2013, with an interim evaluation planned for the fifth year and a full evaluation in 2009-2010. The recommendation to emerge from the interim evaluation in 2003 was that funding for all the research schools should be continued.

The evaluation of the top research schools in 2009-2010 will be conducted on the basis of this protocol, which is essentially the same as that used for the interim evaluation in 2003. The following sections will set out the purpose of the evaluation, the assessment criteria and the procedure, including the timetable for the evaluation. Guidelines are also given for the self-evaluation document, including appendices, and the report of the peer review committee to be set up by the research schools.

## 2 Purpose of the evaluation

### 2.1 Objective of the incentive bonus scheme

The key objective of the incentive bonus scheme is to raise the international profile of the research conducted in the existing system of research schools. This is to be achieved by greater selectivity in the allocation of resources and greater concentration of research activity. Greater selectivity means focusing on research groups at research schools which individually and – more especially – collectively rank among the best in the world. Greater concentration is based on the idea that more pooling of resources by the participating groups in a research programme of a certain substance will enable them to raise their international profile and gain international recognition.

Based on the above, the objective of the incentive bonus scheme can be defined as follows:

*The purpose of the incentive bonus scheme is to identify and foster national focuses of excellence in scientific research at research schools. They must compare favourably with leading institutes in other countries working in related fields at the outset (1999), and have the potential to develop further into world-class research centres.*

### 2.2 Objective of the evaluation

The evaluation should show to what extent the research schools have managed to build their international reputation, drawing on the talents of their researchers and the strength of the research programme, and using the resources allocated to them in the period under review. It should summarise the results achieved over that period and forecast what we can expect to see in the next five years. To summarise, therefore, the objective of the evaluation is to establish to what extent the research schools have succeeded in achieving the objectives of the incentive bonus scheme.

### 3 Criteria

Given the purpose of the evaluation, the top research schools will be assessed on the basis of the following criteria:

- the quality of their research programme, as reflected among other things in their output, and the degree of coherence and focus achieved;
- their position in the national knowledge infrastructure;
- their international standing and any improvement since the incentive bonus was awarded;
- the researchers' international status in their field, and their scientific potential in the longer term;
- the organisational form adopted with a view to achieving the objective in an effective and efficient way, and the scope for adjustments to the programme;
- the use and availability of the funding awarded, the balance between staff and materials, and the management of the resources by the universities concerned;
- the degree to which the areas for improvement identified in the interim evaluation in 2002-2003 have been addressed.

The evaluation will also look at the future prospects of the top research schools, based on the following criteria:

- the research school's potential to maintain its leading position over the coming years;
- the degree to which the research school and the research it performs is associated with or integrated into the university/ies concerned, and their research, and its potential for operating on the basis of funding from regular sources in the future.

## 4 Procedure

### 4.1 Step-by-step plan

NWO will set up an overall evaluation committee to perform an independent external evaluation of the six top research schools. The committee will advise the NWO Governing Board about the top research schools. The Governing Board will then advise the Minister of Education, Culture and Science.

To prepare for the external evaluation, each research school must perform a self-evaluation. An international peer review organised by each of the top research schools will then be conducted. The members of the peer review committee should be selected by the research school, and their names submitted to NWO for its recommendations. The committee should consist of internationally renowned researchers in the research school's field who can be expected to form an independent critical judgment. The members of the peer review committee may not have any connection with the research school or the university/ies concerned. At least one member of the committee must be familiar with the situation in the Netherlands and its current research policy.

For the overall evaluation, NWO will commission a bibliometric analysis by Professor A.F.J. van Raan of the Centre for Science and Technology Studies (Leiden). The outcome of this analysis will be sent to the top research schools for their comments. The analysis is discussed further in section 8.

The self-evaluation document, the report of the peer review committee, the bibliometric analysis and the research school's response will be placed at the disposal of the overall evaluation committee. The evaluation will include interaction with the top research schools, possibly in the form of a site visit.

### 4.2 NWO contact

The evaluation will be coordinated at NWO by

Dr. Robert van der Drift  
Policy Development and Support Department  
Postbus 93138  
2509 AC Den Haag  
Netherlands  
Tel. +31 (0)70 344 07 89  
Fax +31 (0)70 344 06 20  
Email [r.vanderdrift@nwo.nl](mailto:r.vanderdrift@nwo.nl)

## 5 Timetable

October – November 2009	Membership of peer review committee finalised
October 2009 – March 2010	Self-evaluation document drafted and peer review conducted
<b>3 December 2009</b>	Deadline for submission of electronic list of publications for bibliometric analysis
January – March 2010	Bibliometric analysis of top research schools
Late March 2010	Report of bibliometric analysis sent to top research schools for their response
<b>19 April 2010</b>	Deadline for submission of self-evaluation document, peer review report and response to bibliometric analysis
13, 14, and 15 June 2010	Meeting of overall evaluation committee and interaction with top research schools
14 July 2010	Decision by NWO Governing Board, and recommendations to Minister

# 6 Guidelines for self-evaluation document

## 6.1 General requirements

All documents submitted for the evaluation must be in English so that they can be consulted by non-Dutch nationals on the committee. The self-evaluation document must have a maximum of 40 pages (excluding appendices) and a minimum font size of 11. The self-evaluation document must be submitted to NWO in electronic form.

## 6.2 Content

The self-evaluation document should contain the following information.

### 1. *Name (and possible acronym) of research school*

### 2. *Contact and address*

Please give the full name of the person acting as liaison for the school, as well as their title(s), address, telephone number(s), fax number and email address. NWO will send all correspondence concerning the evaluation to this person.

### 3. *Participants and participating institutions*

Please list names, titles and work addresses of the leading researchers of the research school's research groups. The leading researchers are research group leaders who perform the majority of their research activities at the research school, and make an essential contribution to the research school's research programme.

### 4. *Research strategy*

Describe the research school's research strategy since 1 January 2003, indicating any changes to the programme originally submitted, and giving reasons for those changes. You should describe the research strategy of the *entire* research school, not just the part funded under the incentive bonus scheme.

Please also summarise the research school's planned research strategy up to the end of 2013, indicating and citing arguments in support of any changes.

### 5. *Research programme*

Please describe the research programme as implemented since 1 January 2003, and the envisaged programme for the period up to the end of 2013. The description should include a summary of the lines of research embarked upon during the period under review and those planned for the future, how they are to be divided among the research groups and how they will tie in with the researchers' expertise. You should describe the full research programme, not just the part funded under the incentive bonus scheme. Any changes to the research programme should be highlighted, stating why the change was made, and what the results have been.

### 6. *International status*

Please describe the position of the research school and the researchers in an international context. List the research groups' and researchers' international contacts, and describe the extent to which the objectives regarding the research school's international status have been achieved, as well as the objectives for the coming period.



### *7. National status*

Describe the research school's position in the national knowledge infrastructure. Consider, for example, the number of funded positions relative to the overall size of the field in question (direct and indirect funding and contract research) and investments made.

### *8. Organisation*

Summarise the research school's organisational structure and management (research and general). Analyse its performance and describe the instruments used to monitor progress. Indicate whether the organisational structure allows scope for adjustment, what adjustments have been made, and whether further adjustments will be needed in future. Please also describe the research school's position within the participating university/ies.

Please attach an appendix listing all staff employed by the research school since 1 January 2003 (see Appendix D).

### *9. Funding*

Using the format provided (Appendix C), please provide a comprehensive overview of the funding of all research conducted by the research school, and an itemised summary of each study from 1 January 2003 to 31 December 2009. Please present both budgets and budget outturn accounts in the format provided (Appendix C). You are also requested to submit a budget for 2009-2013. Figures should be provided separately for each line of research, as well as in the form of an overall budget. Please distinguish between incentive bonus scheme funding and other income.

The notes on the budget and budget outturn accounts should include an explanation of how the budgets were allocated, as well as details of past and future strategic choices in terms of budgets and staff. Please indicate how much discretion the management has in deciding how to spend resources, and move resources between research groups.

Please also make clear how the incentive bonus scheme funding awarded to the school is made available to the management.

### *10. Action on areas for improvement identified in interim evaluation*

Please indicate what action has been taken on the areas for improvement identified in the interim evaluation.

### *11. Appendices*

Please append the following to the self-evaluation document:

Comprehensive output list for each line of research (Appendix B; see also section 8)

Financial summaries (Appendix C)

Staff profile for each year (Appendix D)

Summary of other indicators of researcher quality (Appendix E)

## **7 Guidelines for peer review committee report**

The peer review committee report should explicitly examine the criteria set out in section 3, preferably devoting a separate section to each one. The report should also include a summary of the committee's conclusions and recommendations, as well as the research school's response.

# 8 Guidelines for bibliometric analysis

## 8.1 Purpose of the bibliometric analysis

The bibliometric analysis should generate extra information for the overall evaluation committee. It should provide an insight into the status of the consortium of researchers who make up the research school, and the partnerships that exist within the consortium. The analysis should also give an impression of the impact that the incentive bonus has had on the research school.

## 8.2 Analyses

The bibliometric analyses will be conducted by the Centre for Science and Technology Studies (CWTS) in Leiden. CWTS also performed the analyses for the interim evaluation. It will link the data from the interim evaluation with new data, allowing analysis of the period 1995 to 2008.

The analyses will concern papers published in journals that feature in the Science Citation Index and related ISI indexes. The impact of the papers, the status of the journals and the partnerships will be analysed.

The following analyses will be conducted:

- An analysis of all output from the research school from 1995 to 2002. This re-analysis of the data from the interim evaluation is needed because CWTS has installed a new database.
- An analysis of the period 2001-2008 and a trend analysis in four-year blocks.
- An analysis of the research school's partnerships over the period 2001-2008.
- An analysis of the adequacy of the Science Citation Index and related ISI indexes as a basis for bibliometric analysis of the research school.

The top research schools will be given an opportunity to respond to the outcomes of the bibliometric analyses.

## 8.3 Data

The analyses will refer to leading researchers. These are research group leaders who perform the majority of their research activities at the research school, and make an essential contribution to the research school's research programme.

The lists of publications should cover the period 2000 to 2009. The list may include any publication, irrespective of whether it appears in an ISI journal. It is not therefore necessary to select papers published in ISI journals, or to mark these papers in the list. CWTS will make the selection.

Appendix B lists the types of publication that should be submitted for the overall evaluation. If all these publications are supplied for bibliometric analysis, the information need not also be included in the self-evaluation document. NWO will count the publications using the list supplied.

The lists of publications should be delivered as Excel files. You should also supply a separate Excel file containing the names of all leading researchers covered by the

study, and the dates of their employment at the research school. Top research schools will be given a standard format for this purpose.

#### **8.4 New staff, former staff**

In the case of leading researchers who joined the research school after 2002, you are also requested to submit a list of publications for the five-year period prior to their association with the research school. The date on which they joined the research school as a leading researcher should also be clearly stated.

For former employees, please submit a list of publications from 2003 to the date on which they left the research school. Any later publications written during their time with the research school may also be listed.

# 9 Appendices

- Appendix A Background information for evaluators**
- Appendix B Format for output lists**
- Appendix C Format for financial summaries**
- Appendix D Format for staff profile**
- Appendix E Format for other indicators of researcher quality**

## 9.1 Appendix A Background information for evaluators

Description of the incentive bonus scheme for Top research schools

### 9.1.1 Introduction

Since 1991 the universities in the Netherlands have been establishing research schools (*onderzoeksscholen*): organisational units combining PhD training and high quality research. Some of these research schools are part of one university, but most of them are joint ventures of research groups in two or more universities. The research schools are managed by a scientific director and supervised by a board.

Selected members of scientific staff can obtain a part-time secondment to the research school. In general PhD students in the Netherlands – employed by a university – participate in a training programme and carry out their own research projects within the framework of a research school. The aims and characteristics of the research schools are comparable to '*Graduiertenkollegs*' in Germany, the system of '*diplomes d'études approfondies*' (DEA) and '*Ecoles doctorales*' in France or 'graduate schools' in the Anglo-Saxon university systems.

The research schools are accredited by a committee (ECOS) of the Royal Netherlands Academy of Arts and Sciences (KNAW) on a five years basis. The total number of accredited research schools has amounted to about hundred ten.

In the 1997 Science Budget, the Minister of Education, Culture and Science announced an incentive bonus scheme for top research schools, aimed at turning a very restricted number of research schools - for the time being no more than ten - into topflight international research centres. A total budget of € 45.5 million of the university research funds ('first flow of funds') was to be earmarked for this incentive bonus scheme, with the possibility of these resources being reallocated between universities.

In 1998 a total number of six applications was selected and granted. The grants cover a period of fifteen years under the restriction of a positive mid-term evaluation after the first four years. All six schools were positively evaluated in 2003 and received funds up until 2013.

### 9.1.2 Aims

The main aim of the incentive bonus scheme is to raise the international profile of parts of the existing system of research schools. This is to be achieved through enhanced differentiation in the allocation of resources and an increased

concentration of research activities. Enhanced differentiation means that the financial stimulus will be focused on research teams in top research schools which are capable of operating as such – but more especially in combination with others – at a top international level. Increased concentration means chiefly that such teams will be able to achieve (enhanced) international standing and recognition by focusing their strengths within well-managed and prestigious research programmes.

Based on the above, the aim of the incentive bonus scheme can be formulated as follows:

The aim of the incentive bonus scheme is to identify and promote national key focuses of excellence in the academic research being conducted within research schools. They must already be capable of standing up to international comparison with other leading institutes in similar fields and must have the potential to evolve further into research centres of international standing.

With a view to how the current research school system has developed in the Netherlands, it will be sensible to assume a certain disciplinary spread in the ultimate selection.

### 9.1.3 Form and content

The selection of the national focuses of excellence is based on the existing system of research schools. A national focus of excellence may overlap with an existing research school either in whole or in part. In that case it will be based on programmed cooperation between research teams which are part of that particular research school. Alternatively, an area of excellence may take the form of programmed cooperation between a consortium of research teams belonging to more than one research school.

In both variants, therefore, the areas of excellence are based on combinations of research teams with institutional attachments to research schools. For this reason, funding is channelled via the research directors of the schools. The research school directors are also responsible for making arrangements for the management of the research programme. This may then either remain in their own hands or be placed (wholly or partly) in the hands of the research programme leaders.

N.B. For the sake of convenience, the abbreviation 'NRC' (National Research School Combination) will be used to refer to both variants.

The future NRCs envisaged can be described as follows:

An 'NRC' will be a consortium of collaborating researchers of world-class excellence. The combination of research talent, infrastructure, facilities, management and attitude will mean that the consortium can offer the ideal conditions for the pursuit and further expansion of excellent research. As a result, the NRC will also be extremely attractive to leading researchers and top talent from the Netherlands and abroad. The research programme will be of outstanding quality and will display a high degree of coherence. The area of research is selected and focused in such a way that it will bring the Netherlands high international prestige through its proven quality and great potential.

This description assumes frequent, close interaction between the researchers involved. Factors such as the nature of the field of study will decide whether physical concentration is necessary to ensure this, or whether the required interaction and communication can also be achieved effectively and efficiently within a decentralised structure ('a virtual centre'). In either case - but a fortiori in the second - authoritative and vigorous programme management will be indispensable.

The size of the NRC and the extent of the financial stimulus provided ('NRC incentive bonus') was decided in the view of the specific nature and circumstances of the particular area of research. It is clear, however, that the development of an NRC will always require a substantial commitment of human and other resources in order to achieve, maintain and further strengthen the intended high international impact.

## 9.2 Appendix B Format for output lists

The following types of publication should be listed for each line of research.

Publications in <i>peer-reviewed</i> journals
Publications in <i>non-peer-reviewed</i> journals
Books
Book chapters
PhD theses
Conference papers <sup>1</sup>
Professional publications
Publications for the general public
Other output

The following details should be given for each publication.

**Name of first author**  
**Title of first author**  
**Initials of first author**  
**Source**  
**Year of publication**  
**Volume no.**  
**Pages**  
**Title**  
**Any editors**  
**Label (e.g. university and/or line of research)**

The top research schools will be provided with a standard Excel format. The output list need not also be included in the self-evaluation. NWO will count the publications using the list supplied.

## 9.3 Appendix C Format for financial summary

Please use the format below for:

- 2003-2009 budget
- budget outturn account 2003-2008
- 2010-2013 budget

In the budgets, please estimate income from direct and indirect funding and contract research (1st, 2nd and 3rd flows), as well as from other sources.

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<sup>1</sup> Conference proceedings, contributions to publications associated with a conference. This does not include abstracts.

Please provide an overall summary for the research school as a whole, and a summary for *each line of research*, on the basis of the format below. If a leading researcher participates in several lines of research, please give as good an estimate as possible of the costs per line of research.

Income (€)		Year	Year+1	Year+2	Year+3	Year+4	Total
Incentive bonus							
Other income:							
a. research funding	1 <sup>st</sup> flow						
	2 <sup>nd</sup> flow						
b. contracts	3 <sup>rd</sup> flow						
c. other sources							
Total income							

Expenditure (€)		Year	Year+1	Year+2	Year+3	Year+4	Total
Incentive bonus							
Staff <sup>2</sup>							
	a. staff costs						
	b. overheads						
Equipment							
Investments >€ 100,000							
Subtotal							
Other resources							
Staff <sup>2</sup>							
	a. staff costs						
	b. overheads <sup>3</sup>						
Equipment							
Investments >€ 100,000							
Subtotal							
Total expenditure							

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<sup>2</sup> Calculated on the basis of the annual salary for a full-time position indicated in the 'gross salary' column of the salary slip of the staff member concerned, plus any allowances for social insurance premiums payable by law or under the terms of an individual employment contract or collective agreement.

<sup>3</sup> All expenditure additional to staff costs.



## 9.4 Appendix D Format for staff profile

Please use the format below for:

- the list of staff working on the research school's entire research programme
- the list of staff funded from the incentive bonus

You may use standard amounts in each category of staff deployed for the research programme. For example:

- professor: 0.4 FTE
- senior university lecturer/university lecturer: 0.4 FTE
- postdoc: 0.8 FTE
- PhD researcher: 0.8 FTE

Job title	Name	Year 1	Year 2	Year 3	Year 4
Professor	Name 1	FTE	FTE	FTE	FTE
	Name 2	FTE	FTE	FTE	FTE
Senior university lecturer	Name 1	FTE	FTE	FTE	FTE
	Name 2	FTE	FTE	FTE	FTE
University lecturer	Name 1	FTE	FTE	FTE	FTE
	Name 2	FTE	FTE	FTE	FTE
Other senior staff	Name 1	FTE	FTE	FTE	FTE
	Name 2	FTE	FTE	FTE	FTE
Total senior staff		Total FTE	Total FTE	Total FTE	Total FTE
Postdocs	Name 1	FTE	FTE	FTE	FTE
	Name 2	FTE	FTE	FTE	FTE
Trainee research ass.	Name 1	FTE	FTE	FTE	FTE
	Name 2	FTE	FTE	FTE	FTE
Total junior staff		Total FTE	Total FTE	Total FTE	Total FTE
Other staff (technicians, analysts)	Name 1	FTE	FTE	FTE	FTE
	Name 2	FTE	FTE	FTE	FTE
Total research staff		Total FTE	Total FTE	Total FTE	Total FTE

## 9.5 Appendix E Other indicators of researcher quality

You may complete this appendix as you see fit. You might wish to include honorary doctorates, awards and guest lectureships.