

Brain & Cognition: an Integrated Approach

Call for Interdisciplinary Education



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1 Introduction

The thematic programme 'Brain & Cognition: an Integrated Approach' strongly promotes integrative brain and cognition research. The aim is to understand cognitive functions from the molecular level all the way up to the interactions between human individuals.

An integrative approach: the challenge

One of the greatest challenges in current brain and cognition research is to integrate various disciplinary approaches to the understanding of specific cognitive processes - such as consciousness, language and memory- and to understand these processes from the level of molecules all the way up to behaviour, including its environmental dimensions. In the past, researchers from disciplines like psychology, neurobiology, medicine, behavioural biology, linguistics, logic, philosophy, sociology and computer science have worked on these issues, all from their own perspective but seldom in unison. The boundaries between these disciplines, however, are rapidly vanishing. Now the time has come to join forces and address important questions about how the brain serves the cognitive functioning of individuals, including the interactions with their physical, social and cultural environment.

To bridge the gap between the different levels of aggregation and to provide integrated theories of how the processes at the various levels are related and mutually constraining is arguably one of the biggest scientific challenges in the 21st century. An interdisciplinary effort is of eminent importance to achieve integration of our insights. Molecular and cellular events, for example, need to be linked to higher order processes taking place in networks of brain cells and areas. How these networks instantiate cognitive functions, and how cognitive functions express themselves in behaviour of the individual and its interaction with the environment, has to be understood as a set of constraints connecting the different levels of analysis. This includes an understanding of the various mechanisms by means of which higher-level processes influence the lower-level ones and vice versa, thus producing fundamental insights in how processes at one level sustain those at another.

The behaviour, interaction with the environment and productivity of human beings all depend on the immense integrative powers of the brain. Our brain enables us to go on learning throughout our life, and to continually adapt our skills to an ever-changing and increasingly demanding environment. Brain diseases, brain injury, psychiatric disorders such as depression, schizophrenia, and stress-related diseases, and their cognitive implications, therefore have far-reaching consequences for our functioning in society. The integrative powers of the brain are best studied by integrating ideas and methods from the various disciplines that investigate the brain by different experimental and theoretical approaches at different scales, ranging from neurotransmitters and animal models at one end, to symbolic capabilities at the other end. Such integration will facilitate the application of the growing knowledge of the brain and its cognitive functions, to learning and education, to the fight against neurological and psychiatric disorders, and to stress and antisocial behaviour.

We face a scientific challenge that can only be met by sustained interdisciplinary efforts that are firmly rooted in disciplinary results, but aim to go beyond them and transform them into new knowledge, without losing sight of the many conceptual and technical difficulties. Achieving such an integrated vision is not only challenging from a fundamental scientific point of view, it will also enable us to face important

societal and economic challenges related to, for instance, life-long education, appropriate versus deviant behaviour, ageing and optimal health.

Embedding in a National Initiative Brain and Cognition

The NWO programme 'Brain & Cognition: an Integrated Approach' is part of the larger National Initiative on Brain and Cognition. At this moment, this NWO programme serves an initiating, facilitating and integrative role in the larger initiative.

Funding Instruments of the NWO programme 'Brain and Cognition: an Integrated Approach'

In this programme, three funding instruments are available, in which funding can be obtained based on open competition:

- Formation of (inter)national networks which also serve as a platform for the preparation of national and international grant applications, i.e. the Call for Joint-Forces Network Grants (closed 2 September 2008);
- Stimulation of excellent integrative research for which a Call for Programmes for Excellence is foreseen in 2009;
- Ensuring high-quality research potential for the future, i.e. the present Call for Interdisciplinary Education.

Funding

A total budget of up to € 200,000 is available for this Call for Interdisciplinary Education. The budget for the entire programme 'Brain & Cognition: an Integrated Approach' amounts to M€ 7.5. The programme is funded by the NWO divisions Earth and Life Sciences, Humanities, Social Sciences, and ZonMw.

2 Aim

General aims of the programme 'Brain & cognition: an Integrated Approach'

The overall and most important aim of the programme 'Brain & Cognition: an Integrated Approach' is to promote research that uses an integrative approach. Within this framework, four specific goals are set:

- Stimulation of excellent research;
- Formation of (inter)national interdisciplinary networks;
- Interdisciplinary education of high-potential junior investigators.
- Contribution to new insights into neural substrates of human cognition.

Call for Interdisciplinary Education

To ensure high-quality research potential for the future, one needs to invest in talent at an early stage, such as very promising students at the Masters level or starting PhD students that have a strong interdisciplinary profile. The present Call for Interdisciplinary Education offers scientists the possibility to apply for a subsidy up to 20 k€, which allows the organization of interdisciplinary education activities, for instance, high-level summer schools. This is a very effective instrument to supply an inspiring scientific environment to young people but also to offer an opportunity for scientific staff to interact with distinguished researchers from abroad.

3 Guidelines for applicants

3.1 Who can apply?

Senior scientists holding a doctor's degree and employed by a Dutch university or other research institute recognized by NWO (as specified in the 'Regeling subsidieverlening NWO' (2007), available on www.nwo.nl) may apply.

The main applicant will be responsible for the scientific as well as the financial results of the project. All applicants should be listed in the proposal (see 3.4). Please indicate which applicant will be the co-ordinator of the project. If this is not specified, the applicant on top of the list will be considered as main applicant.

3.2 What can be applied for?

Applicants can apply for small grants which allow the organization of interdisciplinary education for master and PhD students, for instance high-level summer schools. The educational activity is a one to two weeks lasting event which has to take place in the Netherlands. Costs covered by the grant include actual costs of the organisation of the courses, travelling expenses for invited foreign (scientific) experts, and/or other activities that contribute to a good educational activity. The subsidy does not include costs for publications and teaching materials. Actual research costs or costs of equipment are also excluded. You may apply for a budget with a maximum of Euro 20.000. Only actual expenditure may be claimed if your proposal is granted. The institution of the main applicant will be responsible for the infrastructural facilities necessary to execute the interdisciplinary education activity.

3.3 When can applications be submitted?

From 11 November 2008 applications can be submitted continuously until the end of the programme; there are no deadlines. The Call will be closed at an earlier stage if the available budget is exhausted.

3.4 Drawing up an application

The proposals must be written in English and should meet the prescribed format (see below). All applications are evaluated according to a fixed set of criteria: interdisciplinarity, innovative potential, scientific quality, active participation of young researchers and national accessibility. For a detailed overview of the criteria used to evaluate the proposal, see paragraph 4.2.

Prescribed format

The proposal is composed of two parts; the Iris fact sheet and the core proposal. The basic information in 3.4.1 should be entered in the Iris fact sheet. The descriptions in 3.4.2 form the core proposal. You do not need to fill out a specific application form for the core proposal; information on the criteria and how to structure the application is provided in paragraph 3.4.2. It is important to clearly motivate in the application in what way the interdisciplinary education activity fits these criteria.

The core proposal should not exceed 2500 words. If your application does not meet the prescribed criteria, it will not be eligible for further assessment.

3.4.1 Iris fact sheet

Project information

- Title of the proposal: give a short and specific title of the proposal.
- Concise summary (max. 150 words): give a short summary of the programme of the education activity. This summary serves as an explanation for the proposal's title and is suitable for publication. The location and date of the education activity should be mentioned here as well.

Your particulars

Enter the personal information of the main applicant (see also 3.1). Correspondence will be addressed to the main applicant.

Co-applicant(s)

Enter here the name(s) of the co-applicant(s). Co-applicants are or will be directly involved in carrying out the project.

Please ignore the question to give suggestions for reviewers.

3.4.2 Core proposal

– Goal and significance

Please give a detailed description of the significance and goal of the interdisciplinary education activity. Indicate the intended target group and add the preliminary programme.

– Intended partners and contributors

Provide a list of intended partners and contributors who will be involved in the interdisciplinary education activity. Please give the last name with initials and professional titles, including the name of the university, department, and research school with which they are affiliated. Motivate why this group of people is particularly apt for this project (i.e. relevant expertise).

– Relevance regarding the assessment criteria

Motivate clearly in what way the interdisciplinary education activity fits the five criteria described in paragraph 4.2. Applicants are expected to explicitly and clearly indicate the surplus value of the application regarding these criteria.

– Budget

Include a rough estimate of the budget of the interdisciplinary education activity. In case of additional funding sources, name the financial contributors including their allocated amount. Indicate clearly the budget which is applied for in the Programme Brain & Cognition: an integrated approach.

– Concise curriculum vitae applicant(s)

It is explicitly not required to submit exhaustive curricula vitae. Please restrict the CV's to those activities relevant for the assessment of the proposal. Please use no more than 150 words per person.

3.5 Specific conditions

For this Call, the general criteria in the 'Regeling subsidieverlening NWO' (2007), available on www.nwo.nl are applicable, if not specified differently in this Call.

3.6 Submitting an application

Applications can only be submitted through Iris, the NWO electronic application system, using the account of the main applicant.

To access Iris you need to request an access code on the NWO website (www.iris.nwo.nl). The core proposal should be submitted as a supplement in PDF format. Please consult the Iris user manual before submitting the proposal. The Iris user manual is available on the Iris website.

For any technical problems, please contact the Iris helpdesk (iris@nwo.nl, 0900-6964747).

4 Assessment procedure

4.1 Procedure

The Call for Proposals for Interdisciplinary Education is formulated by the programme committee and is published on November 11, 2008.

When submitted, applications are tested on technical admissibility, i.e. do applications meet the formal requirements as specified in 3.4. If necessary, applicants will be offered a chance to comply with these requirements on short notice.

The programme committee will assess the proposals and take the decision on funding.

4.2 Criteria

In evaluating the proposals, the programme committee will use the following criteria:

1. Interdisciplinarity of the proposal and organizing research teams; the education activity has to offer a coherent package of courses in which several disciplines will be integrated. Preferably, these courses cover a substantial part of cognition sciences, varying from psychology, neurobiology, medicine, behavioural biology, linguistics, logic, philosophy and sociology to computer science. Not only will ideas and results from different disciplines be assigned to the students, the interaction between the several disciplines will give the programme of the education activity a clear surplus value compared to mono-disciplinary education activities.
2. Innovative potential; for example by offering new courses which do not (yet) fit within the regular education programme. It is also possible that courses will be dedicated to new developments on the boundaries between different cognitive disciplines.
3. Scientific quality; participation of leading researchers at a(n) (inter)national level is required.
4. Active participation of young researchers; active participation of master students, PhD students and starting post-docs in the scientific programme, is considered as very important. This can be arranged by, for example, involving these staff members in the scientific organization of the interdisciplinary education activities.
5. Accessibility; the open character of the interdisciplinary education activity is an important point of interest. This means that the education activity is not only meant for students from own faculties, but should be open for faculties on the (inter)national level. It does not have to be an activity without fee.

5 Other information

5.1 Contact

– Drs. M. van Gelder

Telephone +31 (0)70 344 09 03, e-mail: geldder@nwo.nl

– Mrs. K. Snijders

Telephone +31 (0)70 344 09 33, e-mail: snijders@nwo.nl

Further information on the programme and its annual activities, such as symposia and other events, will be announced via the e-mail alert service and on the programme website (www.nwo.nl/bcia). You can register for this free monthly e-mail alert service by sending an e-mail with your name and address to hersenenecognitie@nwo.nl.

For more information on the National Initiative Brain & Cognition we refer to the Brain & Cognition website (www.nwo.nl/hersenenecognitie).

6 Annexe: sample timetable

Timetable

Applications can be submitted continuously from November 11, 2008 until the end of the programme; there are no deadlines. The Call will be closed at an earlier stage if the available budget is exhausted.

After submission, applications are first tested on technical admissibility. Subsequently, the programme committee will assess the proposals and take a decision on funding. This assessment procedure will take about eight weeks.

11 November 2008	Call for Proposals for Interdisciplinary Education
From November 2008	Start continuous submission proposals until the end of the programme

Additional information

Besides this Call for Interdisciplinary Education, a Call for Programmes for Excellence is scheduled for 2009. Its budget amounts to 6 M-Euro. Applications should have an explicit focus on integrated aspects of brain and cognition research, and should meet the thematic restrictions. Selection of proposals is further based on scientific excellence of the proposal and the applicants.

To decrease effort overall, applicants will submit a preliminary proposal for the Call for Programmes for Excellence. Only those who submitted a preliminary proposal may submit a full proposal. Obtaining a Joint-Forces Network Grant is no requirement for preliminary proposals. Preliminary and full proposals will be assessed and ranked by the international evaluation committee (see website). The opening of this call will be announced via the Cognition e-mail alert and on the programme website (www.nwo.nl/bcia).