



ERAC- 036213

NEURON

Network of European Funding for Neuroscience Research

Coordination Action CA

ERA-Net

Final Activity Report

Period covered: 01/01/2007 - 31/12/2011 Date of preparation: 15.02.2012

Start date of project: 01/01/2007 Duration: 60 months

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Project coordinator organisation name: PT-DLR, Project management agency in
the German Aerospace Centre, Germany

NEURON partners

- Partner 1, PT-DLR/BMBF, Programme Management Agency in the German
Coordinator: Aerospace Centre, for the Federal Ministry of Education and Research
BMBF, Germany
- Partner 2: FNR, National Research Fund, Luxemburg
- Partner 3: NCBiR, National Centre for Research and Development, Poland
- Partner 4: CSO-MOH, Chief Scientist Office, Israel Ministry of Health, Israel
- Partner 5: FWF, Austrian Science Fund, Austria
- Partner 6: INSERM, National Institute of Health and Medical Research, France
- Partner 7: AKA, Academy of Science, Finland
- Partner 8: SRC, Swedish Research Council, Sweden
- Partner 9: ANCS-MEdR, National Authority for Scientific Research, Ministry of Education and
Research, Romania
- Partner 10: CNRS, French National Centre for Scientific Research, France
- Partner 11: MOH, Ministry of Health, Italy
- Partner 12: MICINN, Ministry of Science and Innovation, Spain
- Partner 13: FCSAI/ISCIII, Institute of Health Carlos III, Spain
- Partner 14: MRC, Medical Research Council, United Kingdom
- Partner 15: ANR, National Research Agency, France
- Partner 16: UEFISCIDI, (formerly NCPM), National Centre for Programmes Management, Ro-
mania
- Partner 17: FRSQ, Fonds de la Recherche en santé de Québec

1. Project execution and major achievements

Biomedical and health research is an important basis for the improvement of healthy living. Among the many diseases affecting health, disorders of the brain are major causes for impaired quality of life. According to estimates by the World Health Organisation, more than one billion people suffer from disorders of the central nervous system. In the territory of Europe, approximately one-third of all burden of disease is caused by brain diseases. With increasing average life-expectancy of the population especially in highly industrialized countries this percentage will even rise, since the incidence of neurodegenerative conditions is rapidly growing. Thus, neuroscience research and its translation into diagnostic and therapeutic measures are of highest priority for the well being of patients and their families.

While the level of cooperation among European research groups and institutions in the area of disease-related neuroscience appears satisfactory, clear deficiencies are present with regard to the coordination of research funding. Due to the enormous relevance of this topic, funding of disease-related neuroscience research is relatively high in many European countries. However, funding activities in this field are fragmented and scattered at national and regional levels and only few approaches have been undertaken to coordinate or synchronise them. Overcoming this fragmentation was among the major objectives of the ERA-Net NEURON. Consequently, the ERA-Net NEURON envisaged the creation of a strategically operating group of relevant research funding organisations in Europe and a coordinated implementation of research programmes in the area of research into brain diseases.

The Coordination Action NEURON started in January 2007 with 12 funding organisations. After five years of project runtime the ERA-Net completed its work in December 2011 integrating 17 funding bodies in the area of disease-related neuroscience from 13 European countries, Israel as EU-associated country, and Canada, participated in NEURON:



Austria (FWF), Canada (FRSQ), Finland (AKA), France (ANR, INSERM, CNRS), Germany (PT-DLR/BMBF), Israel (CSO-MOH), Italy (MOH), Luxemburg (FNR), Poland (NCBiR), Romania (ANCS-MEdR, NCPM), Spain (ISCIII, MICINN), Sweden (SRC), United Kingdom (MRC). Another Canadian funding organization, the CIHR, was actively participating as an associated partner in the joint calls for proposals.

The good progress of the ERA-Net prompted the network to reflect about continuing work in another funding phase. A proposal for a Coordination and Support Action NEURON II was submitted and positively evaluated. NEURON II started in January 2012 with four new partners: CIHR joined as a full partner and Belgium (FWO), Iceland (Rannis) and Portugal (FCT) started collaboration in the network.

The main objectives and related achievements are depicted in the following paragraphs. Where appropriate, the resulting information is published on the NEURON website <http://www.neuron-eranet.eu/> using a variety of tools such as reports, newsletters etc.

1) Exchange of information

The exchange of knowledge about NEURON partners was an important activity in the early phases of NEURON.

- A survey was performed on the national programmes of European funding organisations in the area of neuroscience, neurology and psychiatry. Differences and similarities in strategic issues

but also in administrative procedures were analysed as well as common needs. The survey addressed 87 funding organisations all over Europe, and 33 returned questionnaires could be analysed and the results are summarized in the survey report **‘European Funding Programmes for Neuroscience Research’** (2008). The knowledge from the survey served as a basis for the preparation and implementation of the NEURON joint call for proposals. Different approaches to e.g. peer review were compared and eventually highest quality standards were agreed and applied in the joint calls. The exchange of knowledge was equally crucial in order to be able to respect the existing national laws and regulations.

- The report about a survey regarding the **‘Transnational Funding Activities in the NEURON Area’** (2009) summarises information from 12 different NEURON partner organisations representing 10 different countries.
- A data bank was developed comprising information about **projects funded by the NEURON partners** within their national funding programmes in the area of neuroscience, neurology, and psychiatry. An electronic tool for information search was created to make this information available to the public. Currently, more than 2,000 projects funded in 11 countries are listed in the data bank.

2) *Building an interface between science and funding policy*

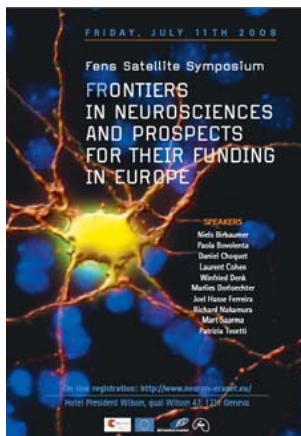


Scientific workshops were the most important instrument of establishing a dialogue between programme managers and the research community. At the same time they were part of the NEURON foresight activities. They followed the general format of small dedicated meetings of NEURON partners and 6-7 invited renowned scientists who presented their work. Subsequent Round Tables provided the opportunity to discuss specific hurdles and barriers.

- **‘Neurodegeneration: State of the art and future orientations’**, Paris, October 2007. Speakers at the workshop were Ignacio Torres (Spain), Shlomo Rotshenker (Israel), Charles Duyckaerts (France), Giovanni Frisoni (Italy), Thomas Gasser (Germany), Jörg Schulz (Germany), Wolfgang Oertel (Germany) and Jens Volkmann (Germany).
- **‘Future perspectives, benefits and bottlenecks of Neuro-biobanks’**, Vienna, April 2008. Speakers at the workshop were Jürgen Goebel (Germany), Andrea Cook (UK), James Ironside (UK), Hans Kretschmar (Germany), Thomas Pickardt (Germany), Kurt Zatloukal (Austria) and Martin Yuille (UK).
- **‘New technologies in Neurosciences’**, Warsaw, September 2008. Speakers at the workshop were Arthur Konnerth (Germany), John Rothwell (UK), Jean Livet (France), Mohamed Jaber (France), Jacques Mallet (France) and Bertram Müller-Myhsok (Germany).
- **‘Mental illness and neural dysfunction’** Paris, May 2009. Speakers at the workshop were Guy Goodwin (UK), Eduard Vieta (Spain), Andreas Meyer-Lindenberg (Germany), Thomas Bourgeron (France), Celso Arango Lopez (Spain), Paul Bebbington (UK), Veronique Deroche-Gamonet (France), Elizabeth Kuipers (UK).
- **‘Future development in Neuroscience’**, Berlin, September 2010. Speakers at the workshop were Jim Van Os (Maastricht University, The Netherlands), Alain Prochiantz (CNRS, France), Richard Frackowiak (Lausanne University, Switzerland/University College, London, UK), Viktor Jirsa (CNRS, France).



- **'Transferring technology from bench to bedside: practices, barriers and policies'**, Montreal, January 2011. Speakers at the workshop were Philip Barker (McGill University, Canada), Djalil Coowar (AxoGlia Therapeutics SA, Luxembourg), Joyce Fung (McGill University, Canada), Morgan Meyer (ParisTech, Luxembourg), Nora Tarcic (Teva Pharmaceutical Industries, Israel), and Manfred Windisch (JSW LifeSciences, Austria).
- **'Multinational clinical trials'**, at Lake Como, May 2011. Speakers at the workshop were Christian Ohmann (ECRIN, University of Düsseldorf, Germany), Jacques Demotes (ECRIN, Inserm, France), René Kahn (University of Utrecht, The Netherlands), Wolfgang Oertel (University of Marburg, Germany), Sophie Koutouzov (Coordinator E-rare, GIS, France).



A **satellite symposium to the FENS forum** meeting in Geneva, 2008, was organised to present excellent contributions on cutting edge technology in the neurosciences with the speakers Niels Birbaumer (Germany), Paola Bovolenta (Spain), Daniel Choquet (France), Laurent Cohen (France), and Mart Saarna (Finland). A vivid panel discussion about funding of neuroscience developed after presentations by representatives of funding organisations and policy makers: Marlies Durlöchter (ERA-Net NEURON), Joel Hase Ferreira (Member of European Parliament), Richard Nakamura (NIH, USA), and Patrizia Tosetti (EU Commission).



A **foresight study** was conducted in the area of neurodegenerative diseases and psychiatric disorders. Based on a literature survey and structured interviews of researchers in the area, a brief description of several of these disorders was given, followed by an attempt to pinpoint the problems that need to be addressed by future research on these diseases. While some of these problems may be unique to one or another of the diseases, most are common to all. What research is needed and what is required to perform this research effectively was discussed irrespective of disease.

3) Coordination of funding programmes with joint multilateral calls

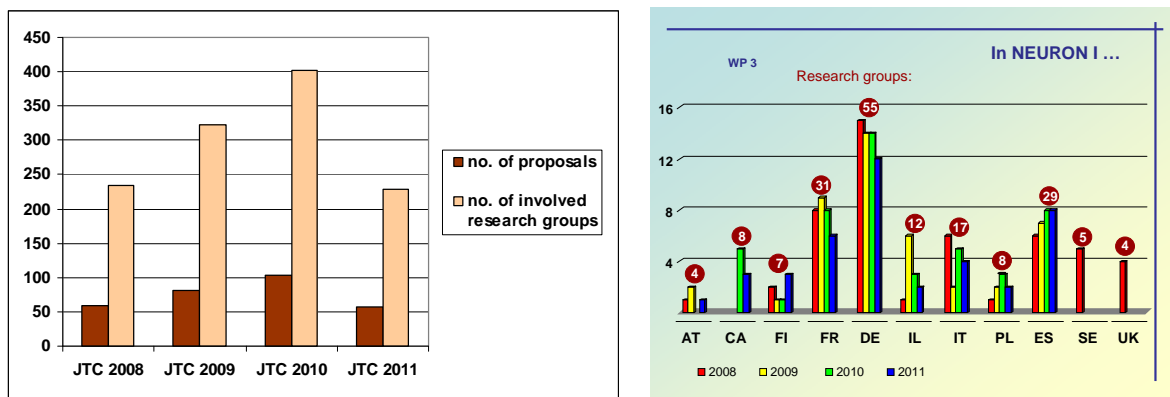
Due to the rapidly growing trust and the dynamic development of the consortium, the most ambitious aim of an ERA-Net was reached already 12 months after the project kickoff, since a first Joint Transnational Call for proposals (JTC) was launched in January 2008. After this successful beginning, launching joint calls has become an annual NEURON event. The total funding volume in each call was about 10 million € for 3 years. Further information about the calls and the funded projects is available on the NEURON website

- The first JTC was from the area of neurodegeneration ("**European research projects on neurodegenerative diseases of the central nervous system**"). 13 organisations from 12 countries contributed to the joint call. After a joint peer review of the submitted proposals, the administrative procedures of each participating funding organisation were applied. Out of 59 submitted project proposals 12 were selected for funding. Projects started in early 2009. For details see <http://www.neuron-eranet.eu/en/220.php>
- The second JTC ("**Development and advancement in methods and technologies towards the understanding of brain diseases**") was launched in January 2009. Out of 81 submitted pre-proposals 10 projects were selected for funding with a runtime starting in early 2010. For details see <http://www.neuron-eranet.eu/en/222.php>
- The third JTC ("**European Research Projects on Mental Disorders**") was launched in January 2010. As a novelty, two Canadian organisations (CIHR-INMHA and FRSQ) participated in this call for the first time. Out of 103 submitted pre-proposals 11 projects were se-

lected for funding with a runtime starting in early 2011. For details see <http://www.neuron-eranet.eu/en/247.php>

- The fourth and last JTC in the project phase of NEURON ("European Research Projects on Cerebrovascular Diseases"), was launched in January 2011. As a new partner, Tübitak from Turkey joined the call. Out of 82 submitted pre-proposals 10 projects were selected for funding with a runtime starting in early 2012.

Almost 300 consortia, each of them consisting of 3-5 research groups, submitted proposals to the four NEURON JTCs, which means that more than 1100 research groups followed the calls (see below, left figure). In each JTC the highest number of participating research groups was affiliated in Germany followed by France and Spain. The origin of the successful research groups in each JTC is depicted in the figure on the right side below.



In order to monitor the success of the NEURON-funded research projects, midterm and final symposia were organised. The coordinators of JTC 2008 'Neurodegeneration' presented their results after about half the funding period in Rome, October 2010, while the coordinators of JTC 2009 'New technologies' had the opportunity to do this in Bucharest, September 2011. At the final NEURON meeting in Berlin, October 2011, not only the coordinators but all Principal Investigators and in addition young researchers from each research group in the consortia of JTC 2008 'Neurodegeneration' were invited to give talks or present posters. NEURON partners received very positive feedback from the funded researchers and discussed ways how to even improve the ERA-Net funding activities.

4) Support of young investigators

A different type of joint activities is the annual NEURON **Excellent paper in neuroscience" Award (EPNA)**. The ERA-NET NEURON partner organizations issue this award to recognize the most remarkable and outstanding scientific publications by young researchers in the field of disease related neurosciences. Original research article in an international peer review journal with an impact factor of the journal above 10 based on the ISI Web of Knowledge are eligible if the topic of the article is clearly relevant to disease related neuroscience and the affiliation of the first author is in an ERA-Net NEURON partner country as stated in the publication.



○ The first EPNA winners were Dr. Heidi Nousiainen from Finland for her paper in *Nature Genetics* and Dr. Asya Rolls from Israel for her paper in *PLoS Medicine*. They were invited to the FENS forum meeting in Amsterdam, July 2010, as the special NEURON Young Investigator lecturers. The

award ceremony gained high visibility for NEURON as well as the awardee H. Nousiainen who presented her work (A. Rolls could not attend).

- The EPNA winner of 2010 was Dr. Jens Schwamborn from Germany, who received the award for a paper in *Cell* on his work performed at a research institute in Austria.
- The EPNA 2011 is shared by Dr. Fernando Kasanetz from Inserm, France, and Dr. Fanie Barnabé-Heider from Sweden, for their papers in *Science* and *Cell Stem Cell*, respectively.

5) Reach out to the public

Regular updates of the NEURON website, a series of newsletters, educational video clips about brain research and neurological and psychiatric disorders are designed to inform the general public about the work of NEURON. To address a larger audience the video clips were in addition posted on YouTube.

<http://www.neuron-eranet.eu/en/108.php>.



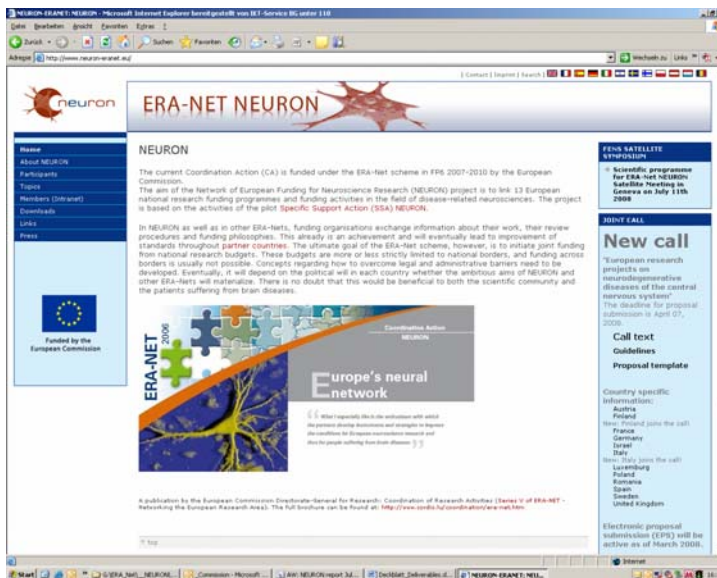
A specific workshop on 'Neuroethics' was held in Jerusalem, in October 2009. It addressed issues like media coverage of brain research, ethics of stem cell research, effects of deep brain stimulation on the patients' personality, neuroimaging research from the participants' perspective, and teaching of clinical ethics. The workshop was open to the public, and was attended by 60 persons. The contributions were video taped and published in 2010 on the NEURON website along with a newsletter presenting the abstracts.

2. Dissemination and use

Providing the main results of the NEURON project to interested stakeholder groups and the general public was an ongoing process on the webpage of the ERA-Net. A variety of instruments was used for this purpose, e.g. a series of newsletters depicting the major NEURON events such as workshops, symposia, or funded projects. Video clips describing the work of renowned researchers in specific areas of brain diseases in lay terms were produced. Especially the annual Joint Transnational Calls for proposals gave proof that the project partners fulfilled the objective to develop a coordinated joint funding programme in the area of research into brain diseases and implement it on a regular and reliable basis.

For further details please see the NEURON website:

<http://www.neuron-eranet.eu/>



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