Alzheimer’s and Parkinson’s diseases (AD and PD) are the two most common neurodegenerative conditions. They cause major costs for society and suffering and death for millions of patients around the globe. In Europe, more than 8 million individuals have AD or PD. Current treatments are symptomatic but do not stop the underlying disease process. Using biomarkers, we can detect biochemical changes that show when neurons start to die. There are also biochemical tests for brain changes that are specific to AD and PD. Studies suggest that such abnormalities start to appear 10-20 years before onset of symptoms. If we want to do something substantial about these diseases, we need to diagnose them early, before too many neurons have been lost, and then treat them with drugs that inhibit the destructive process. Such drugs are in development. However, in these very early stages of the disease we cannot rely on clinical symptoms, as they may be very subtle, or even absent. Instead, research tells us that we could use biomarkers for disease-specific pathologies. Established biomarkers exist for early AD and promising candidates are underway for PD. However, a major problem today is the lack of standardisation regarding exactly how to perform and use the biomarker tests.

In BIOMARKAPD we detail how we will standardise the biomarker measurements across Europe, how to collect samples, how to perform the measurements and how to interpret the results. We will also create a biobank with samples from well characterised AD and PD patients, including patients in very early disease stages, as well as neurologically healthy controls. These samples will be used to develop new and better assays and to test new and better biomarker candidates. Finally, we will develop certified reference materials that can be used to harmonise assays that are used to measure the different biomarkers. The deliverables of the proposal will have a major influence on clinical research and drug development for neurodegenerative conditions in general and for AD and PD in particular. They will impact these types of efforts globally and make Europe world-leading in this area.

Total Funding: € 8.5 million (approx.)
Start Date: June, 2012
Duration: 3 years
Coordinator: Bengt Winblad
T: +46 8 585 85474
E: bengt-winblad-swedishbrainpower@ki.se

Project Partners:

- Bengt Winblad, Karolinska Institutet, Stockholm, Sweden
- Lennart Minthon, Skåne University Hospital, Sweden
- Henrik Zetterberg, The Sahlgrenska Academy, University of Gothenburg, Sweden
- Judges Poirier, McGill University, Quebec, Canada
- Gunhild Waldemar, Rigshospitalet, Copenhagen Univ Hospital, Denmark
- Niels Heegaard, Statens Serum Institut, Denmark
- Hilkka Soininen, University of Eastern Finland, Finland
- Juha Rinne, Turku University Hospital, Finland
- Bruno Dubois, Salpetriere University Hospital (UPMC - University Paris 6), France
- Sylvain Lehmann, CHRU de Montpellier, France
- Armand Perret-Liaudet, Université Lyon 1, France
- Jens Willfang, Universität Duisburg-Essen, Germany
- Thomas Klockgether, German Center for Neurodegenerative Diseases (DZNE), Germany
- Britt Mollenhauer, Paracelsus-Clara-Klinik + Georg August University Göttingen, Germany
- Piotr Lewczuk, Universitätssklinikum Erlangen, Germany
- Markus Otto, University of Ulm, Germany
- Katrin Marcus, Ruhr University Bochum, Germany
- Dieter Willbold, Heinrich-Heine University Medical School Düsseldorf, Germany
- Lutz Froehlich, Central Institute of Mental Health Mannheim, Germany
- Thomas Arendt, University of Leipzig, Germany
Project Partners continued:

Andrea Urbani, IRCCS Foundation Santa Lucia, Italy
Fabrizio Tagliavini, IRCCS Foundation Carlo Besta, Italy
Giovanni Frisoni, IRCCS Foundation San Giovanni Di Dio Fatebenefratelli, Italy
Paul Wilmes, University of Luxembourg, Luxembourg
Pieter Jelle Visser, String of Pears Initiative Neurodegeneration, The Netherlands
Marcel Verbeek, Radboud University Medical Centre, Nijmegen, The Netherlands
Tormod Fladby, Akershus University Hospital, Norway
Jacek Kuznicki, International Institute of Molecular and Cell Biology (IIMCB), Poland
Andrzej Szczudlik, Jagiellonian University College of Medicine (UJ), Poland
Tomasz Gabyrylewicz, IIMDK, Mossakowski Medical Research Centre, Poland
Marzena Zboch, Scinawa, Wroclaw Medical University, Poland
Alexandre Mendonca, Instituto de Medicina Molecular, Portugal
Catarina Resende de Oliveira, University of Coimbra, Portugal
Odete da Cruz e Silva, University of Aveiro, Portugal
Norbert Zilka, Slovak Academy of Science, Slovakia
Uros Rot, University Medical Centre, Ljubljana, Slovenia
José Luis Molinuevo, ICH Hospital Clinic i Universitari, Spain
Alberto Lleo, Hospital Sant Pau, Barcelona, Spain
Joan Gispert, Fundació Pasqual Maragall, Barcelona, Spain
Javier Sáez-Valero, University Miguel Hernández-CSIC, CIBERNED, Spain
Christoph Hock, University of Zurich, Psychiatric & University Hospital, Switzerland
Panteleimon Giannakopoulos, University of Geneva Hospital, Switzerland
Sermin Genc, Dokuz Eylul University, Turkey
Esen Saka Topcuoglu, Hacettepe University, Turkey
Hakan Gurvit, Istanbul University, Turkey