

## Arne De Roeck

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BSc Biochemistry & Biotechnology, University of Antwerp, 2012  
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### Current Position

PhD Student at the University of Antwerp - VIB Department of Molecular Genetics  
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### Keywords

Alzheimer's disease - Genetic Epidemiology - Next Generation Sequencing -  
Bioinformatics - Biostatistics

### Science

Dementia is one of the principal global health challenges of our generation. This disorder is incurable and causes a tremendous burden on patients, caretakers and society. My work is focused on the complex genetic etiology of Alzheimer's disease (AD), the predominant cause of dementia. With the use of Next Generation Sequencing on our well-characterized Belgian AD/control cohort, I aim to unravel the genetic variants underlying genome-wide association in AD susceptibility loci. Statistical modelling is applied to provide a framework for interaction analysis and translation of genetic epidemiology to clinical practice. Risk profiles are created to align (genetic) risk factors with (endo) phenotypes in the asymptomatic - prodromal - symptomatic disease spectrum. Further functional characterization (e.g. gene expression analysis, proteomics and generation of *in-vitro* disease models) of single genes/variants and biological interactions is performed with the use of our extensive biobank (e.g. brain, CSF, serum/plasma, lymphoblasts). As such, my goal is to provide novel insights into the pathomechanisms of dementia and enable the initiation of enhanced clinical trials, which hopefully contributes to the development of a successful therapy.

### Selected Publications

Cuyvers,E., **De Roeck,A.**, Van den Bossche,T., Van Cauwenberghe,C., Bettens,K., Vermeulen,S., Mattheijssens,M., Peeters,K., Engelborghs,S., Vandenbulcke,M., Vandenberghe,R., De Deyn,P.P., Van Broeckhoven,C., Sleegers,K.: Mutations in ABCA7 in a Belgian cohort of Alzheimer's disease patients: a targeted resequencing study. *Lancet Neurology* 14(8): 814-822 (2015) Epub: 30-Jun-2015 (PMID: 26141617) (I.F.: 21.896)

Sleegers,K., Bettens,K., **De Roeck,A.**, Van Cauwenberghe,C., Cuyvers,E., Verheijen,J., Struyfs,H., Van Dongen,J., Vermeulen,S., Engelborghs,S., Vandenbulcke,M., Vandenberghe,R., De Deyn,P.P., Van Broeckhoven,C., BELNEU consortium,: A 22-single nucleotide polymorphism Alzheimer risk score correlates with family history, onset age, and cerebrospinal fluid Aβ42. *Alzheimers & Dementia* (2015) Epub: 15-Jun-2015 (PMID: 26086184) (I.F.: 12.407)

[All Publications](#)