

CURRICULUM VITAE

Name: Dorret I. Boomsma (female)
Date of birth: November 18, 1957
Place of birth: Huizen, The Netherlands
Marital status: Married, 1 daughter (DOB 1989)
Present Position: Full Professor, Dept Biological Psychology, VU Univ
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Education:

<i>Institution</i>	<i>Degree</i>	<i>Year</i>	<i>Field of study</i>
W. Zwijsen Lyceum Bussum	Gymnasium β	1976	Greek, Dutch, English, Mathematics, Physics, Chemistry, History
VU Univ A'dam	BA (<i>cum laude</i>)	1979	Psychology
VU Univ A'dam	-	-	Philosophy
VU Univ A'dam	MA (<i>cum laude</i>)	1983	Psychophysiology
Univ Colorado, USA	MA	1983	Biological Psychology/Behavior Genetics
VU Univ A'dam	PhD (<i>cum laude</i>)	1992	Quantitative Genetics

Thesis: Quantitative Genetic Analysis of Cardiovascular Risk Factors in Twins and their Parents

Supervisors: Prof. JF Orlebeke (VU), prof. PC Molenaar (UvA)

Work:

1984-1985	Statistician (Dept of Dental Surgery, VU Univ, Amsterdam)
1985-1990	Researcher, Genetics of Cardiovascular Risk Factors (VU Univ)
1990-1994	UD (Assistant professor, Dept of Psychonomics, VU Univ)
1994-1997	UHD (Associate professor, Dept of Psychonomics, VU Univ)
1998-present	Full professor / Head of department (Biological Psychology, VU Univ)
1998-2016	Head of department (Biological Psychology, VU Univ)
2014-present	Visiting prof of Genetic Epidemiology Avera Inst. Human Genetics, Sioux Falls, USA

Awards and honors:

- 1985 *Thompson Award* (awarded by BGA: Behavior Genetics Association)
- 1996 *Junior-Heymans Award* (awarded by Dutch Psychological Association)
- 2001 *Member KNAW* (Royal Netherlands Academy of Sciences: <http://www.knaw.nl/>)
- 2001 *Member Koninklijke Hollandsche Maatschappij der Wetenschappen* (<http://www.khmw.nl/>)
- 2002 *Spinoza Prize* (awarded by the Netherlands Organization for Scientific Research). This is the highest personal scientific award in the Netherlands for top researchers, for “excellent accomplishments, and inspiring leadership” (<http://www.nwo.nl/en/research-and-results/programmes/spinoza+prize>)
- 2002 *James Shield Award* (awarded by the International Society for the Study of Twins)
- 2008 *ERC established investigator*
- 2009 *Dr Hendrik Muller Prize for Behavioural and Social Sciences* (<https://www.knaw.nl/nl/prijzen/prijzen/hendrik-muller-prijs-voor-de-gedrags-en>)
- 2011 *NARSAD established investigator* (<http://bbrfoundation.org/>)
- 2011 *KNAW Merian Prize* (<https://www.knaw.nl/en/awards/prijzen/knaw-merianprijz>)
- 2012 *Member Academia Europaea* (<http://www.ae-info.org/>)
- 2013 *Dobzhansky Award* for lifetime achievement in Behavior Genetics (awarded by BGA)
- 2014 *Academy Professor Prize* (<https://www.knaw.nl/nl/actueel/nieuws/prijs-akademiehoogleraren-voor-dorret-boomsma-en-bert-meijer>): awarded to researchers between 54 and 59 years for exceptional achievement throughout the course of their careers. The Prize is a lifetime achievement award.
- 2016 *EJHG Honors Award*, for paper ‘The Genome of the Netherlands’ (EJHG, 2014)

Other activities:

1987	Established Netherlands Twin Register (NTR: www.tweelingenregister.org)
1988-1991	Executive Committee Behavior Genetics Association
1992-1999	Chair Twin Research Methodology Group International Twin Society
1994	Working group Brain Research European Community (Brussels)
1996	NWO-Medical Science committee Gene-Environment Interaction
1997	NWO- Medical Science committee Diet, Genetics and Chronic Disease
1999-2000	NWO- Medical Science Health Sciences (Gezondheidswetenschappen)
1999	NIH committee Genetics & Cognitive Neuroscience (Washington)
2000-2009	ISTS board (International Society Twin Studies)
2002-2008	Steering committee GenomEUtwin
2003-2005	CMSB (NWO Centre Medical and Systems Biology)
2004-2009	Research Council CNCR (Centre Neurogenomics and Cognition Research)
2005-2011	Committee Cognitive Sciences (Royal Academy of Science)
2006-2015	Board member “Avond van Wetenschap & Maatschappij”
2007-2015	Jury Huijbregtsen prize (for Science and Society)
2008-2015	The Health Council of the Netherlands (Gezondheidsraad) / section Genetics
2008-2009	President Behavior Genetics Association (BGA)
2010	Jury Heineken Young Scientists Awards (HYSA)
2009-2014	European Research Council LS2 panel member (for established investigator grants)
2009-present	ENGAGE Steering Board Project Publication Committee
2010-2014	Board Biobanking and Biomolecular Resources Research Infrastructure (BBMRI)-NL
2010-present	Raad van Advies Nationale Denktank
2011	Established with dr Zwijnenburg the VUMC Twin Clinic (www.twinvumc.nl/) for twins and twins families with psychological, medical and other problems / questions
2011-present	Social Sciences Council (SWR) of the Royal Academy of Science
2012-2015	Management Neuroscience Campus Amsterdam (www.neurosciencecampus-amsterdam.nl)
2013-present	Steering com. Consortium Individual Development (www.individualdevelopment.nl/)
2013-2018	“Fachbeirat” Max Planck Institute for Psycholinguistics, Nijmegen
2015-present	Board Biobanking and Biomolecular Resources Research Infrastructure 2 (BBMRI-2)
2015	Jury Johannes Ruigrok prize (Koninklijke Hollandse Maatschappij der Wetenschappen)
2015-2016	Klankbord groep Nationale Wetenschapsagenda
2016	Wetenschappelijke adviescommissie “Staat van Volksgezondheid en Zorg”
2016	Member of the Klaus J. Jacobs Research Prize Jury (http://jacobsfoundation.org/)
2017	Programme board, APH Mental Health

Education related

1993-1996	Chair Graduate school Experimental Psychological Research School (EPOS)
2000-2010	Member examination committee MA Neuroscience (VU University)

Publications:

Scientific papers: > 1000 (please see <http://www.tweelingenregister.org/en/publications/>).

H-index (web of science): 98

Book contributions and other publications (book reviews, Dutch papers, etc.): >75; Book editor: *Twin research: What multiples can tell us about humans*, 2008 (Dutch; also available on website). I edit the yearly “Twinfo” (~50.000 copies) which my department publishes for lay audiences since 1986.

Personal statement:

My interest is in the analysis of individual differences in normal and abnormal human behavior, health, and cognition. I study the genetic and biological basis of individual differences using approaches from genetic epidemiology, psychophysiology and molecular genetics. These methods have a firm basis in the theory of quantitative genetics and I believe this approach is the strongest we have to elucidate etiological pathways to complex behavioral and neuropsychiatric traits and common diseases.

In 1987 I established the Netherlands Twin Register (www.tweelingenregister.org), which collects data from twins and families. Around 60.000 young twins were registered at birth and are followed in their development and > 22.000 adults take part. Epidemiological data are collected by longitudinal surveys. Projects include studies on childhood and adult psychopathology, developmental studies of cognition and the brain using neuropsychological testing, psychometric IQ and s/fMRI, EEG/ERP, addiction, diabetes and cardiovascular risk. A longstanding interest is the genetics of twinning, and twinning as a risk factor for health.

NTR biobank contains biological samples in >10.000 participants (DNA, RNA, cell lines, buccal cells, serum plasma, urine). A couple of very large grants has allowed to genotype nearly all samples for on genome-wide SNP arrays and subsamples for RNA expression and epigenetics, which form the basis for many genome-wide association (GWA) projects in international consortia.

Team building and collaborations:

When I became head of department (in 1998) our group consisted of around 12 people. I have built a research group of ~50 people, which has attracted some outstanding PhD students, postdocs (several of whom are now full professors in the Netherlands and abroad) and professional colleagues. Nearly all of the increase has been funded through grants that I obtained in the last 25 years.

A significant part of the work of my group is collaborative, in the Netherlands (for example BBMRI-NL, Biobanking Biomolecular Resources Research Infrastructure) and in Europe including genomeEUtwin, the European Network for Genetic and Genomic Epidemiology (ENGAGE), the EARly Genetics and Lifecourse Epidemiology (EAGLE) consortium. There are longstanding collaborations with Australia, and with a large number of groups in the USA. The Enhancing Neuro Imaging Genetics Through Meta-Analysis (ENIGMA) network brings together colleagues who combine brain imaging and genetics research. My students, post-docs and I frequently spend time abroad. We have many international visitors and over the years have had several visiting professors from the USA (profs M Neale, B Neale, JJ Hudziak and G Lubke have or had part-time positions in my department). My department has MOUs (memorandum of understanding) with AVERA and Notre Dame.

Editorships / editorial board positions:

2013-present *Journal of Pediatric and Neonatal Individualized Medicine (JPNIM)* (board)

2012-present *Genes, Brain, and Behavior* (board)

2012-present *Neuropsychiatric Genetics* (board)

1999-present *Twin Research and Human Genetics* (associate editor)

1997-2010 *Behavior Genetics* (associate editor)

2018 Editor Special issue *Eur Child Adolesc Psychiatry: Conduct Disorder and Aggressive Behavior*

1989, 2001, 06 Editor Special issues *Behavior Genetics: Genetic Analysis of Twin and Family data; Genetics of Brain Function and Cognition; Human Linkage Studies of Behavior*

2002 Editor Special issue *Twin Research: World-wide Twin Registries*

2008 Editor Special issue *Biological Psychology: Imaging Genetics*

Teaching:

Complex Trait Genetics (MA, PhD and post-graduate level; *current*)

Molecule to Mind (MA level)

Behavior Genetics (BA, graduate level)

Personality theory (BA level), Psychiatric Genetics (BA)

International Workshops Genetic Methodology (Europe/USA), yearly 1987 – 2015 (*current*) alternating between genetic epidemiology and gene finding.

Professional Activities:

I review for leading journals in psychology, genetics and psychiatry as well as many specialist journals. I review grants for funding bodies in the Netherlands and internationally. I serve on one of the European Research Council panels for the life sciences. In 2007 I was elected President of the Behavior Genetics Association and hosted its meeting in Amsterdam, which had a record attendance.

PhD supervisor (underlined: now full prof).

1. CV Dolan: Biometric decomposition of phenotypic means in human samples. 1-10-1992 (Molenaar, Boomsma)
2. EJCG van den Oord: A genetic study of problem behaviors in children. 12-5-1993 (Boomsma, Verhulst)
3. W Meulemans: The genetics of dizygotic twinning, Univ. Leuven, 1994 (Vlietinck, Boomsma)
4. CEM van Beijsterveldt: The genetics of electrophysiological indices of brain activity. An EEG study in adolescent twins, 17-4-1996 (Boomsma, Molenaar, Orlebeke)
5. H Snieder: Genetic epidemiology of risk factors for coronary heart disease. A study of middle-aged twins, 25-4-1996 (Boomsma, van Doornen, Orlebeke)
6. FV Rijdsdijk: The genetics of neural speed. A genetic study on nerve conduction velocity, reaction times and psychometric abilities. VU, 16-1-1997 (Boomsma, Orlebeke)
7. GCM van Baal: A genetic perspective on the developing brain. Electrophysiological indices of neural functioning in 5- to 7-year old twins. VU, 12-3-1997 (Boomsma, Orlebeke)
8. JR Koopmans: The genetics of health-related behaviors. A study in adolescent twins and their parents. VU, 17-6-1997 (Boomsma, Orlebeke)
9. JC Van der Valk: The genetic and environmental contributions to children's problem behaviors: A developmental approach. EUR/VU, 3-7-2001 (Boomsma, Verhulst)
10. D Posthuma: Genetic variation and cognitive ability. VU, 17, 6, 2002 (Boomsma, de Geus)
11. M Van den Berg: Mediating factors in the association between anxious depression and cardiovascular disease risk. VU, 3-12-2002 (Boomsma)
12. M Bartels: Genetic influences on behavioral, cognitive and hormonal characteristics during childhood. VU, 9-1-2003 (Boomsma)
13. MJH Rietveld: Heritability of cognitive abilities and of attention problems. A longitudinal twin study in childhood, VU, 17-6-2003 (Boomsma)
14. M Beekman: Towards mapping QTLs influencing parameters of lipid metabolism in human twins. LUMC/VU, 11-3-2004 (Slagboom, Boomsma)
15. R Ijzerman: Birth weight, microvascular function and cardiovascular risk factors. VUMC/VU 9-6-2004 (Stehouwer, Deleamarre, Boomsma)
16. JM Vink: Twin-family study of smoking behaviour. VU, 15-11-2004 (Boomsma)
17. N Kupper: Heritability of cardiovascular risk factors in a real life setting. VU, 9-11-2005 (de Geus, Boomsma)
18. C Middeldorp: The role of genetic factors and life events in the development of anxiety and depression. VU/VUMC, 15-3-2006 (Boomsma, van Dyck)
19. J Stubbe: The genetics of exercise behavior and well-being. VU, 14-6-2006 (de Geus, Boomsma)
20. I Rebollo: Type AAA Personality Pattern: Anger, Type A and Aggressive Behavior. VU 27-6-2006 (Boomsma)
21. E Derks: Assessment and genetic etiology of attention problems, hyperactivity and related disorders. VU, 29-11-2006 (Boomsma)
22. T Polderman: Genetics of attention and executive functioning. VU 26-6-2007 (Boomsma, Verhulst)
23. R Hoekstra: Autistic traits, withdrawn behaviour and cognition: A longitudinal study from early childhood to young adulthood VU 20-11-2007 (Boomsma)
24. D Smit: A genetic perspective on electrophysiological measures of brain function. VU 11-12-2007 (de Geus, Boomsma)
25. F Gosso: Common genetic variants underlying cognitive ability. VU 7-1-2008 (Boomsma, Heutink)
26. EAP Poelen: The role of genes and environment in adolescents' and young adults' alcohol use, Nijmegen, 03-9-2008 (Engels, Boomsma)
27. D van Grootheest: Obsession. The genetic and environmental architecture of obsessive-compulsive symptoms. VU, 18-9-2008 (Boomsma, Beekman)
28. J Peper: The early pubertal brain: work in progress. A study on genetic and hormonal influences. UMC, Utrecht, 20-11-2008 (Hulshoff-Pol, Boomsma)
29. M van Leeuwen: A study of cognition in pre-adolescent twins. VU, 18-12-2008 (Boomsma, Hulshoff-Pol)
30. M de Moor: Exercise behavior and mental health: A genetic perspective. VU, 13-2-2009 (de Geus, Boomsma)

31. *C Hoekstra*: Dizygotic Twinning. VU, 20-2-2009 (Boomsma)
32. *M Distel*: Genetics of Borderline Personality Disorder, VU, 16-09-2009 (Boomsma)
33. *L Ligthart*: Genetics of Migraine, VU, 21-10-2010 (Boomsma)
34. *N van der Aa*: Causes of Variation in Adolescent Wellbeing, VU, 20-1-2011 (Boomsma)
35. *F Estourgie- van Burk*: Variation In Growth And The Influence Of Early Growth In Later Life: A Twin-Sibling Study, VU, 25-05-2011 (Boomsma, Delemarre-van de Waal, Fetter)
36. *R Slof*: Genetic Determinants of Eating Disorders. Leiden, 28-6-2011 (Slagboom & Boomsma)
37. *I van Soelen*: Genetic and Environmental Influences on Structural Brain Development and Cognition. VU, 18-10-2011 (Boomsma, Hulshoff)
38. *S Robbers*: The development of children's problem behaviors: a twin-singleton comparison and the influence of parental divorce. EUR, 19-04-2012 (Verhulst, Boomsma)
39. *A den Braber*: Genetic & Environmental risk factors for Obsessive-Compulsive Symptoms: Do they affect the same brain? VU, 09-10-2012 (de Geus, Boomsma)
40. *L Geels*: A developmental perspective on the etiology of alcohol use and comorbid traits. VU, 4-2-2013 (Boomsma)
41. *J van Beek*: Genetics of alcohol use and liver enzymes. VU, 4-9-2013 (Boomsma)
42. *D Lamb*: Risk factors for childhood problem behavior. VU, 17-12-2013 (Boomsma)
43. *M Groen-Blokhuis*: Keeping focus: a study on Attention Problems in the GWAS era. VU, 24-6-2014 (Boomsma)
44. *A Abdellaoui*: Behavior ↔ Genetics. VU, 1-10-2014 (Boomsma, Penninx)
45. *S Franic*: Structural Equation Models to Next-Generation Sequencing. VU, 21-11-2014 (Boomsma, Dolan)
46. *E de Zeeuw*: Educational Achievement in Children: Twinning, Teachers and Genes. VU, 24-3-2015 (Boomsma, de Geus)
47. *J van Dongen*: (Epi)genetics and twins. VU, 16-4-2015 (Boomsma, Slagboom)
48. *M Nivard*: Developmental genetics of psychopathology. VU, 1-10-2015 (Boomsma, Dolan)
49. *C Minica*: Family-Based Genetic Association Analysis: Methods and Applications to Addiction Phenotypes. VU, 18-2-2016 (Boomsma, Vink)
50. *J Treur*: A genetically informative study of addictive behaviour with a focus on smoking. VU, 31-3-2016 (Boomsma, Vink)
51. *S Swagerman*: Cognitive performance across the lifespan and domains. VU, 8-4-2016 (Boomsma, de Geus, Hulshoff Pol)
52. *I Fedko*: Computational approaches in genetics with a focus on GoNL and twin studies. VU, 15-12-2016 (Boomsma)
53. *W. Peyrot*: The complex link between genetic effects and environment in depression. VU, 20-1-2017 (Penninx, Boomsma)
54. *B. Lin*: Using genetic methods to get insight into human complex traits. VU, 20-04-2017 (Boomsma)
55. *M. Koenis*: Developmental changes in hormone levels, cognition and brain networks throughout adolescence. UU, 06-07-2017 (Hulshoff Pol, Boomsma)

Ere-promotor: Prof L Eaves: Contributions to Behavior Genetics. VU 2000 (doctor *honoris causa*)

Grant funding:

Major funding has come from NWO, ZonMW (Dutch funding agencies scientific - medical research), Human Frontiers Science Program, National Institutes of Health (USA) and the European Commission (FP5, FP7). In 2000 I concluded an agreement with Gemini Genomics (Cambridge UK) and sat on their Scientific Advisory board and in 2010 with Pfizer (San Francisco). Much of the genotyping work was funded through the NIH and NIMH (linkage scans: Marshfield Laboratories and GWA data through the GAIN and Grand Opportunity initiatives). In 2008 I was awarded an established investigator grant from the European Research Council (ERC); in 2012 I was one of the PIs on the Consortium on Individual Development (NWO Zwaartekracht) in the Netherlands and in 2014 one of the coPIs on the BBMRI2 roadmap infrastructure. I obtained an infrastructure grant in 2016 for the twin register and formalized a scientific collaboration with Avera Institute for Human Genetics.

Grants (selection):

- The genetic basis of anxiety and depression: mapping quantitative trait loci in humans (Program grant NWO 904-61-090 fl 1.000.000 = €464.000): 1997-2002
- Database Twin register (Investeringssubsidie NWO 575-25-006, \$80.000) 1995 - 2003
- Genetic and environmental influences on glucocorticoid and gonadal hormones, intelligence and behavioral problems (NWO 575-25-012, €146.000) 1998 – 2002
- Genetics of individual differences in smoking initiation and persistence (NWO 985-10-002, 1 PhD, 1 RA) (fl 497.000 = €225.000) 1999 – 2003
- Resolving cause and effect in the association between exercise and psychological well-being (de Geus & Boomsma) (Program grant NWO-MW 904-61-193; €450.000) 2001-2005
- Quantitative genetic modelling of variation in cognitive brain maturation: a longitudinal study in pre-adolescent twins (Hulshoff, Kahn & Boomsma) (NWO 051.02.060, 668.772; €334.000) 2003 – 2007
- High throughput analysis of SNPs for the study of major complex traits and diseases (NWO Investment 911-03-016 PI: Slagboom & Boomsma €722.000)
- Genetics of cognition (Human Frontiers of Science; RG0154/1998-B; \$746.000) 1998 - 2001
- Genomic search for anxiety/depression QTLs (Eaves & Boomsma) (NHBLI Mammalian Genotyping Service: typing of 400 markers in 900 Ss)
- Developmental Study of Attention Problems in Young Twins (PI: J Hudziak) (NIMH, RO1 MH58799-03; \$350.000 = €330.000) 2001 – 2005
- Susceptibility genes for nicotine dependence (Boomsma & Kendler) (NIDA / ZON MW/3100.0038 16333 € 64.000 to VU) 2001 - 2003
- GENOMEUTWIN (PI L Peltonen) (EU/QLRT-2001-01254, €1.373.904) 2002 – 2006
- Borderline Personality Disorder in a Dutch Twin Cohort (Boomsma, Trull) (Borderline Personality Disorder Research Foundation; \$364,928)
- A collaborative study of the genetics of DZ twinning (PI: GW Montgomery) (NIH R01 HD042157-01A1; € 638,730)
- Twin-family database for behavior genetics and genomics studies (NWO €290.000) 2005
- Major Depression: Genomewide Association in Population-Based Samples (NIH / GAIN)
- Genetic determinants of risk behavior in relation to alcohol use and alcohol use disorder: a developmental perspective (Boomsma) ZonMW (nr: 60-60600-97-135), (€750.000)
- Genetics of Mental Illness: A lifespan approach to the genetics of childhood and adult neuropsychiatric disorders and comorbid conditions (Boomsma). ERC established investigator (€2.500.000)
- BBMRI-NL: Biobanking Biomolecular Resources Research Infrastructure (Co-PI, PI van Ommen).
- Psychische klachten bij ouders van kinderen met een psychiatrische stoornis (Boomsma & Middeldorp). Fonds Psychische Gezondheid (projectnr 20096398) (€50.000)
- Development of phenotype database for NTR Biobank participants (\$ 388,384, NIMH)
- Twin-family study of individual differences in school achievement (€220,000, NOW, FES)
- GO (Grand Opportunity, NIMH): Neurodevelopmental Genomics: Trajectories of Complex Phenotypes
- GO (NIMH): Integration of Genomics & Transcriptomics in Normal Twins & Major Depression
- RNA isolation (~18.000 samples) and establishment cell lines (~9000 samples) at Rutgers Repository (NIMH)
- Human Tissue and Associated Metagenomics (Pfizer San Francisco; 447k)
- Linking databases to study childhood disorders: NARSAD Distinguished Investigator Grant (\$100k)
- Twin-family study of individual differences in school achievement; NWO (FES) (€200k)
- Parental psychopathology in children with psychiatric symptoms (Middeldorp, Boomsma); ZonMW-TOP (€76k)
- Functional neural network plasticity in adolescent twins and sibs (Hulshoff, Boomsma) NWO Brain & Cognition: an Integrated approach – Programs of excellence (€505k)
- Biomarkers and Depression NESDA and NTR (Boomsma & Penninx); NCA 2012-2013 (€300k)
- NWO-Zwaartekracht: Individual Development (PI: Kemner, Boomsma co-PI)

- Aggression in Children: unravelling gene-environment interplay to inform Treatment and InterventiON strategies (EU-FP7; €6,000k)
- Next generation bioinformatics (Boomsma, Penninx). EMGO-Mental Health Embedded PhD student program; 2014-2018, €200,000
- BBMRI-2.0: Biobanking Biomolecular Resources Research Infrastructure (Co-PI; PI Wijmenga).
- “Behavior → Gene ← Behavior” (Boomsma) Royal NL Academy of Science prize; 2014-2019, €99,750
- Netherlands Twin Registry Repository: researching the interplay between genome and environment (NWO infrastructure grant; €5,000k), 2016-2021
- VU-Avera Collaborative Agreement (€275K annually). 2016-2021
- Oorzaken van individuele verschillen in agressief en norm-overschrijdend gedrag bij Nederlandse (jong)volwassenen: het samenspel van genen en omgeving (Boomsma & de Weijer). VU0N NSCR A-LAB 2017-2021