

JOLIEN RIETKERK

CONTACT INFORMATION

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PROFESSIONAL EXPERIENCE

Postdoctoral Researcher (Mar2025-present)

Leveraging diverse ancestry GWAS and family data to investigate psychiatric disorders

SUNY Downstate Health Sciences University, NY, USA & University Medical Center Groningen, NL

- I manage, perform and report on investigations into the genetic architecture of psychiatric disorders that are inclusive of under-represented individuals of non-European ancestry in various large datasets, including the family-based longitudinal Dutch cohort Lifelines (~ 167.000 participants).

Supervision: Dr. Roseann E. Peterson and Dr. Hanna M. van Loo

Doctoral Researcher (Oct2020-Feb2025)

Gene-Gene Interactions in Psychiatric Disorders

Helmholtz Pioneer Campus, Helmholtz Munich (DE)

- Investigation of genetic pathway interactions through use and development of the statistical genetics framework Coordinated Epistasis in ~300.000 European Ancestry individuals in the UK Biobank and their phenotypes. Applied to meta-analyses of Major Depressive Disorder and related phenotypes such as symptoms, clinical subtypes, family history and environmental exposures.
- Research using iPSYCH (130.000 individuals) data to analyze genetic pathway interactions among co-morbid disorders using and extending the Coordinated Epistasis framework.

Supervisors: Dr. Na Cai, Prof. Dr. Bertram Müller-Myshok, Dr. Bastian Rieck

EDUCATION

Master of Science (Sep2018- Aug2020)

Molecular and Cellular Life Sciences

University of Utrecht (NL)

- Thesis: *The Omnigenic Model: looking for validation*. Genetics department of University Medical Center Groningen. Supervisor: Dr. Patrick Deelen.
- Research project: *3C analysis of Arabidopsis root microbiome and application of MetaTOR data analysis pipeline*. Plant Microbe Interactions group of Prof. Corné Pieterse. Supervisors: Dr. Giannis Stringlis and Ass. Prof. Ronnie de Jonge.
- Major: Genes to Organisms
- Minor: Applied Data Science

Bachelor of Science (Sep2015-Jul2018)

Life Science and Technology

University of Groningen (NL)

- Project and Thesis: *The molecular mechanism of surfactin immunity in B. subtilis*. Scheffers lab, University of Groningen. Supervision: Dr. Alexandra Zielinska.
- Internship: *Gene expression prediction using methylation Quantitative Trait Loci*. Part of course: Computational Molecular Biology Research. Hosted by: Genetics department of University Medical Center Groningen. Lude Franke Lab. Supervision: Dr. Harm-Jan Westra.
- Major: Molecular Life Sciences
- Minor: Biomedical Sciences and Behavior and Neurosciences

CAREER PROFILE

I am fascinated by interactions and complex traits. My research showcases my passion for statistical human genetics and mental health and strives to personalize medicine through inclusive genetic studies and international collaborations.

SELECTED CONFERENCES AND SEMINARS

- 2024 **Speaker, World Congress of Psychiatric Genetics, Singapore**
Coordinated Epistasis Detects Heterogeneous Pathways Across Psychiatric Disorders and Comorbidities
- 2024 **Speaker, Behavior Genetics Association meeting, London, United Kingdom**
Using Coordinated Epistasis to Investigate Genetic Architecture of Psychiatric Comorbidity
- 2023 **Oral Presentation Award Finalist, World Congress of Psychiatric Genetics, Montréal, Canada**
Coordinated Epistasis Reveals Pathway Architecture (and method considerations)
- 2023 **Speaker, Gordon Research Seminar, Quantitative Genetics and Genomics, Ventura, USA**
Coordinated Epistasis Reveals Symptom-Driven Pathways Towards Major Depressive Disorder

SERVICE AND OUTREACH

ISPG postdoc group, meeting subgroup chair (Apr 2025 – present)

The postdoc group of the International Society of Psychiatric Genetics (ISPG) will connect postdocs across the ISPG to nurture networking, discuss career perspectives and share grant opportunities. The group aims to meet on a regular basis. I have volunteered to oversee planning and host the meetings.

Member of the UMCG Postdoc Council (Apr2025 – present)

Within my position at the postdoc council I help in organizing events that provide networking, education and career opportunities for postdoctoral researchers at the University Medical Center Groningen (UMCG) in the Netherlands. We strive to represent postdoctoral interests throughout the UMCG and University of Groningen and represent our center's postdocs at the national level. For the latter I travel across the Netherlands to join PostdocNL meetings as a UMCG postdoc council representative. Groningen, the Netherlands

Mental Health Advocate and general Member of DINI (May2022- June2024)

The Doctoral Initiative DINI is the representation of doctoral researchers within Helmholtz Munich. As part of the DINI, I held a variety of roles, including organization and communication of Mental Health Awareness Month; organize social events; create content for both social media and the newsletter, as well as corporate design of the newsletter; and welcome team: point of contact for new doctoral researchers at the center. Munich, Germany

REFEREES

Available upon request

PUBLICATIONS

- First author** Rietkerk J. et al (preprint) Genetic risk effects on psychiatric disorders act in sets. MedRxiv. DOI: 10.1101/2025.07.23.25332043
- Co-author** Huang L, ... , **Rietkerk, J.** (3rd author), et al. (2023) Polygenic Analyses Show Important Differences Between Major Depressive Disorder Symptoms Measured Using Various Instruments. Biological Psychiatry. DOI: 10.1016/j.biopsych.2023.11.021.