

# Abel Jansma

irl: Berlin | Amsterdam | Edinburgh

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## Currently

PhD in genetics and physics at the University of Edinburgh. We think about higher order genetic interactions in single-cell data, and how these interactions relate to cell type.

**Research Interests:** Genetic interactions • Causality • Physics of biology • Physics of machine learning • Category theory • the Human Cell Atlas

## Education

**University of Amsterdam** 2015 - 2018  
MSc Theoretical Physics.

**University of Copenhagen** Feb - Aug 2016  
Visiting graduate student at the Niels Bohr Institute. Focused on biophysics and a research project on computational design in architecture.

**University of Amsterdam** 2012 - 2015  
BSc Physics and Astronomy. Graduated with honours and a minor in computational science.

**School of Machines, Making, and Make-Believe** Aug - Sep 2014  
Summer school in physical computing. Led to work being exhibited in Berlin, and on festivals in the NLs and Finland.

**HKU University of the Arts Utrecht** 2011 - 2012  
Propedeuse in Art, Technology, and New Media Design.

## Publications

A list is also available online.

### Theses

**MSc Thesis** 2018  
E8 Symmetry Structures in the Ising model (A. Jansma, 2018) Under supervision of prof. Bernard Nienhuis

**BSc Thesis** 2016  
Chaos and Dimensionality in Wormspace (A. Jansma, 2016) Under supervision of prof. Greg Stephens

### Online

**QuantumUniverse.nl** 2019  
Guest blog post Over vogels en vuurvliegjes (Dutch)

**QuantumUniverse.nl** 2019  
Guest blog post Solitonen in het zwembad (Dutch)

### Code

**OpenProcessing.org** 2014  
Firefly synchronisation (ran by ~5k users)  
Leaf venation simulation

**OpenProcessing.org** 2013  
Flocking and predator simulation (ran by ~15k users, forked ~20 times)

## Experience

### Research

**University of Edinburgh | PhD Candidate** 2018 - Present  
Funded through the Precision Medicine programme.  
Jointly supervised by prof. Chris Ponting and dr. Ava Khamseh at the **Human Genetics Unit**, and prof. Luigi Del Debbio at the **Particle Physics Theory** group.

**University of Amsterdam** | Theoretical Physics dept. 2017 - 2018

Master's thesis on the mysterious appearance of affine Lie algebras in conformal field theories. Under supervision of prof. Bernard Nienhuis: E8 symmetry structures in the Ising model. (A. Jansma, 2018)

**University of Amsterdam** | Biophysics dept. 2015

Bachelor's thesis under supervision of prof. Greg Stephens: Mathematical chaos in the crawling behaviour of *C. elegans*.

**University of Amsterdam** | Computational Science dept. 2014

Undergraduate research under supervision of dr. Jaap Kaandorp: Dynamics of the gene-regulatory network of an *N. vectensis* embryo.

#### Professional

**SciPost** | Information Officer 2017 - 2018

SciPost is a completely open scientific publishing company. I helped expand the editorial board, profiling and contacting potential new editors. (Scipost.org)

**ASML** | Technology Scholar 2015 - 2017

I was selected as one of 25 graduate students nationwide for a two-year professional development programme, focused on leadership in technology.

**SPUI25** | Member of the Junior Editorial Board 2017

Co-organised and presented monthly events to place academic ideas and research in a cultural context for a broad audience. (Spui25.nl)

**Mediamatic** | Distiller 2016 - 2017

Designed, built, and demonstrated a bespoke still to be used in artistic olfactory research. (Mediamatic.net)

**Betabreak** | Committee member 2014 - 2016

Organised and presented monthly debates at Amsterdam Science Park to stimulate cross-disciplinary discussion on science and society. (Betabreak.nl)

#### Volunteering

**Anna's Tuin en Ruigte** | Beekeeper 2017 - 2018

I was the beekeeper at this public permaculture garden. (AnnasTuinEnRuigte.nl)

**VoorleesExpress** | Voorlezer 2017

I read books to children whose parents were not able to. (VoorleesExpress.nl)

#### Skills

##### Languages

Dutch (native) • English (fluent) • German (conversational) • French (basic)

##### Programming

Python • R • Matlab • Nextflow • Processing (Java) • Arduino (C++) • Bash/Zsh • Git • Mathematica

##### Visual

Photoshop • Grasshopper (Rhino) • After Effects • Latex • Just enough css and html to make this website