Franziska
Hoerbst

bouncing between research, art, activism & science communication

On the move ✶ 1998, Austria ✉ franziska@hoerbst.net 🌐 franziskaaah.github.io

Research and education

2024 – 2025
Postdoc

John Innes Centre
Computational Systems Biology

Statistical pitfalls in the sciences and what we can do to resolve them

2020 – 2024
PhD

John Innes Centre & University of East Anglia
Computational Systems Biology

Doctoral Thesis supervised by Richard Morris
Bayesian Inference in the Analysis of RNA-Seq Data

2017 – 2020
BSc

University of Vienna
Molecular Biology

Thesis in Computational Biophysics with Bojan Zagrovic at Max Perutz Labs

Exploring the Physicochemical Foundation behind Travelling Autologous Protein-mRNA Pairs in the Phloem of Plants

Science communication, workshops & teaching

2022 – 2024

UEA Biodiversity and Climate Action Network
Building a movement; developing and running workshops and campaigns

2020 – 2022
🌐 more here

5MinutenClimateChance
Climate science podcast & radio broadcast
Co-founder, host, journalistic researcher & producer

→ *Austrian SDG Award 2020*
→ *Austrian Environmental Journalism Prize 2020*
→ *Top 5 Salto Awards 2021*

2022
Norwich, UK

University teaching
Mathematics for Computer Scientists
Teaching assistant

2018 – 2020
Vienna, AT

ScienceCenter Network Vienna
Hands-on science communication

in a job role called 'explainer', which is essentially a workshop host, who is developing hands-on and tinkering activities for audiences of all ages and backgrounds

Research publications

2022
Royal Society Interface

● **Exact Bayesian inference for the detection of graft-mobile transcripts from sequencing data**
F Hoerbst, M Tomkins, S Gupta, F Apelt, J Kehr, F Kragler, RJ Morris

2023
Preprint

● **baymobil: A Python package for detection of graft-mobile mRNA using exact Bayesian inference on RNA-Seq data**
F Hoerbst, RJ Morris, M Tomkins

2024
Preprint

● **A Closed-Form Solution to the 2-Sample Problem for Quantifying Changes in Gene Expression using Bayes Factors**
F Hoerbst, GS Sidhu, M Tomkins, RJ Morris

2024
Nature

● **Re-analysis of mobile mRNA datasets highlights challenges in the detection of mobile transcripts from short-read RNA-Seq data**
P Paajanen, M Tomkins, F Hoerbst, R Veevers, M Heeney, HR Thomas, F Apelt, E Saplaoura, S Gupta, M Frank, DJ Walther, C Faulkner, J Kehr, F Kragler, RJ Morris

2024
Thesis

● **Bayesian Inference in the Analysis of RNA-Seq Data**
F Hoerbst

2025
Trends in Plant Science

● **On the overinterpretation of mass screening data – the example of mobile mRNA**
F Hoerbst, M Tomkins, RJ Morris

2024
Under review

● **A Bayesian framework for ranking genes based on their statistical evidence for differential expression**
F Hoerbst, GS Sidhu, T Omori, M Tomkins, RJ Morris

2024
Under review

● **What is a differentially expressed gene?**
F Hoerbst, GS Sidhu, M Tomkins, RJ Morris

Further publications & engagement

2024
Working paper

● **Let's 'do different': Planetary Citizen Education Proposal**
E Honeybun-Arnolda, P Stephanides, F Hoerbst, N Longhurst, D Maguire, H Hoechner

since 2020
Podcast

● **5MinutenClimateChance**
100+ episodes filled with snack-bites of climate research

2021
Blog

● **A day trip through phloem**
Easy read research project description

2023
Blog

● **Life out there? Scanning plant space for new communication networks**
Easy read paper teaser

2023
Panel

● **Activism and Advocacy as a Researcher**
Panel discussion at the Annual Assembly of the Tyndall Centre for Climate Change Research

The miscellaneous

Most recent
- **The Unjournal**
  Evaluating research; to make *rigorous* research more *impactful* and *impactful* research more *rigorous*

- **Movement Reserach Unit**
  Volunteering to do the research that helps movements win

2024 — **Best Presentation Award at MaxEnt24**
Maximum Entropy (MaxEnt) is a valued, historical conference series in the field of Bayesian statistics where researchers from quantum physics and philosophy to economy come together once a year since to learn from each other about probability theory

2023 — **JIC Director Award**
A yearly award given away by Director Graham Moore to individuals to acknowledge and honour outstanding scientific as well as cultural contributions to the John Innes Centre

since 2022
🌐 more here
UEA Biodiversity and Climate Action Network
Particularly involved in the Education Working group, with the vision of changing all curricula towards engaging all students in concepts surrounding global citizenship

since 2022 • **JIC Student Voice**
Running campaigns to support the John Innes student community to thrive

2021 • **Finalist DigiEduHack 2021**
Climate Change Digital Education Hackathon

from 2012 • **Radio Orange 94.0, Freies Radio Freistadt, & Radius 106.6**
Speaker and producer

→ Student award by the Austrian Federal Ministry of Education and OE1 for best broadcast 2016

2017 & 2018 Coordination and execution of the charity radio marathons
4 Tage für den Sozialmarkt, 4 Tage für die Lebenshilfe

2016 → Regional Movie Award @YOUKI Film Festival

2008 – 2017 Several accolades for music (We *can discuss the concept of music competitions, especially for kids and teenagers*)

finds balance in

- Music and silence
- Nature and the outdoors
- Arts and crafts
- Tech and low-tech
- Exploring movement and movements

speaks

- German, English and Spanish
- Python fluently

loves speaking

- at international scientific conferences
- on panels (like previously on Women in STEM, climate activism as researchers, ...
- at public engagement events (like e.g. Pint of science)
- with kind humans around a dinner table

Finds a lot of enthusiasm for

Life
The post carbon world
Bayesian Statistics
Learning
Neuroplasticity
Philosophy of science
Equality & Justice
Colours & Complex Systems
Cooking meals for others
Spreading joy
Slowing down & degrowth
Information Theory
The changing climate
Bicycles & Biodiversity
Movement & Movements
The importance of cultural practices
Staring out of the window on ridiculously long train journeys
Complex systems
New things every day

Contact for references

- **Professor Richard J. Morris**
  Group leader at John Innes Centre

  Primary PhD supervisor

  Richard.Morris@jic.ac.uk

- **Dr Noel Longhurst**
  Lecturer in Energy & Climate Change, School of Environmental Sciences, UEA and founding member of UEA BCAN

  N.Longhurst@uea.ac.uk