

# Curriculum Vitae - Rasmus Kristoffer Pedersen, Ph.D.



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Expert in mathematical modelling, in particular of biological systems, and analysis of epidemiological data, with a strong background in problem-oriented project-based work as well as general mathematics and physics.

I have a personal interest in communication of science and particularly mathematics, which I have worked with in my time as PostDoc (through science communication articles to the general public) my Ph.D. (through communication of mathematical results to medical professionals), my master thesis (through a mathematics-didactical study) and privately (through talks to the broader public about the topic of interactive visualizations)

## Selected publications in peer-reviewed journals

- Friis, Martin-Bertelsen, [Pedersen](#), Nielsen, Krause, Andreasen & Vestergaard (2023) “COVID-19 mortality attenuated during widespread Omicron transmission, Denmark, 2020 to 2022.” *Eurosurveillance*, 28, 3
- [Pedersen](#), Andersen, Stiehl, Ottesen (2023) “Understanding Hematopoietic Stem Cell Dynamics—Insights from Mathematical Modelling” *Current Stem Cell Reports*, 9
- Ingholt, Chen, Hildebrandt, [Pedersen](#), Simonsen (2022) “Temperate climate malaria in nineteenth century Denmark.” *BMC Infectious Diseases*, 22, 432
- [Pedersen](#), et al (2021) “Dose-dependent mathematical modeling of interferon- $\alpha$ -treatment for personalized treatment of myeloproliferative neoplasms” *Computational & Systems Oncology*, 1, 4
- [Pedersen](#), et al (2021) Mathematical modelling of the hematopoietic stem cell-niche system: Clonal dominance based on stem cell fitness. *Journal of Theoretical Biology*, 518

## Job experience

- PostDoc - PandemiX Center - Roskilde University Since february 2022
- Scientific Assistant - Roskilde University September 2021 → January 2022
- PostDoc - PandemiX Center - Roskilde University February 2021 → August 2021
- Scientific Assistant - Roskilde University September 2020 → January 2021
- Course teacher - Courses “*Optimisation and Computational Methods*”, “*Data Analysis and Statistics*”, “*Modelling populations and epidemics*” and “*Mathematical modelling and dynamical systems*”  
Roskilde University Between 2018 and 2021
- Supervisor of a total of four bachelor-student-projects - Roskilde University Between 2017 and 2020
- Teaching Assistant - Courses “*BK2*”, “*Calculus*” & “*BK1*” - Roskilde University Between 2015 and 2017
- High School teacher - Roskilde Gymnasium Fall 2014 and Spring 2015

## Education

- Ph.D. in Mathematics - Roskilde University  
“Mathematical Modelling of Myeloproliferative Neoplasms and Hematopoietic Stem Cells”  
September 2017 - August 2020 *Thesis successfully defended November 20<sup>th</sup>, 2020*
- Cand. Scient. in Physics and Mathematics - Roskilde University  
August 2015 - August 2017
- Bach. Scient. in Mathematics and Physics - Roskilde University  
August 2011 - June 2014

## Technical competencies

Python	■ ■ ■ ■ ■
MATLAB	■ ■ ■ ■ ■
L <sup>A</sup> T <sub>E</sub> X	■ ■ ■ ■ ■
C#	■ □ □ □ □
Java	■ □ □ □ □
Web-development (HTML, Javascript, CSS)	■ ■ ■ □ □

## Language competencies

Danish	C2 (Mother tongue)
English	C2
German	B1

## Conference contributions and academic presentations

- Epidemics 9, 2023 - Contributed talk  
*Identifying Signature Features of Epidemics Diseases in 19th century All-cause Mortality Data*
- Data-driven mechanistic mathematical modelling for life-science applications, 2023 - Contributed talk  
*Mathematical modelling for determining COVID-19 incidence from testing data*
- ECMTB, 2022 - Contributed talk  
*Model-based approach for determining COVID-19 incidence for different testing intensities*
- The second Nordic Biomathematics days, 2022 - Contributed talk  
*Mathematical Modelling of Myeloproliferative Neoplasms and Hematopoietic Stem Cells*
- Statistics and Biomathematics seminar (Chalmers, Gothenburg), 2020 - Invited talk  
*Modelling hematopoietic stem cells and their interaction with the bone marrow micro-environment*
- The first Nordic Biomathematics days, 2019 - Contributed Talk  
*Modelling hematopoietic stem cells and their interaction with the bone marrow micro-environment*
- SMB, 2019 - Poster
- SIAM Conference on Applications of Dynamical Systems, 2019 - Poster
- ECMTB, 2018 - Poster

## Selected examples of science communication to the public

- “How to visualize your science”  
Invited Talk at INM PhD-day, Roskilde University  
October 2023
- “Communicating Mathematics with Interactive Visualizations”  
Talk at Studienfonds Community Conference, Bielefeld, Germany  
August 2022
- “Communicating Science and Mathematics with Interactive Visualizations”  
Talk at DataViz CPH meetup  
September 2021
- “[Hvordan skal vi beregne overdødelighed?](#)”  
(Eng: *How do we calculate excess mortality?*)  
Article for Videnskab.dk (in danish)  
November 2022
- “[Vender COVID-19 for alvor tilbage?](#)”  
(Eng: *Is COVID-19 gone for good?*)  
Article for Videnskab.dk (in danish)  
June 2022
- “[Forskere: Omikron kan være den dominerende variant allerede onsdag](#)”  
(Eng: *Researchers: Omicron could already be the dominating variant from Wednesday.*)  
Article for Videnskab.dk (in danish)  
December 2021
- “[Tilbage til begyndelsen: Lav dine egne corona-kurver](#)”  
(Eng: *Back to the start: Make your own COVID-19-curves*)  
Article for Videnskab.dk (in danish)  
September 2021
- “[Forstå usikkerhed i matematiske modeller med disse interaktive grafikker](#)”  
(Eng: *Understand uncertainty in mathematical models with these interactive figures*)  
Article for Videnskab.dk (in danish)  
May 2021
- “Interaktive visualisering til videnskabelig formidling”  
(Eng: *Interactive visualizations for scientific dissemination*), Webinar, Danish Society of Engineers, IDA  
May 2020
- “Communicating science with p5.js - How interactive simulations and creative coding can make the complex relatable”  
Talk at “Processing Community Day 2020”  
January 2020
- “The benefits of building and working with interactive simulations  
Interactive simulations for better model intuition”  
Blog post, “Mathematical Oncology” blog  
October 2019