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