

Martin Cramer Pedersen

CV

Information

Current address Office Kc6, Niels Bohr International Academy, University of Copenhagen, Blegdamsvej 17, 2100 Copenhagen E, Denmark
E-mail ✉ : mcpe@nbi.ku.dk
Web 🌐 : <https://martincramerpetersen.github.io>
Date of birth November 7th, 1985



Career

- 2025– **Associate professor (Lektor)**
Niels Bohr International Academy & Niels Bohr Institute, University of Copenhagen
- 2023–2024 **Assistant professor (Adjunkt)**
Niels Bohr International Academy & Niels Bohr Institute, University of Copenhagen
- 2019–2023 **Assistant professor (Adjunkt)**
Niels Bohr Institute, University of Copenhagen
- 2018–2019 **Postdoctoral fellow**
Niels Bohr Institute, University of Copenhagen & Department of Applied Mathematics, Australian National University. Supervisors: Jacob Kirkensgaard, Vanessa Robins, & Kell Mortensen
- 2017–2018 **Postdoctoral fellow**
Niels Bohr Institute, University of Copenhagen. Supervisor: Lise Arleth
- 2015–2017 **Postdoctoral fellow**
Department of Applied Mathematics, Australian National University. Supervisor: Stephen Hyde
- 2014–2015 **Postdoctoral fellow**
Niels Bohr Institute, University of Copenhagen. Supervisor: Lise Arleth
- 2011–2014 **Ph.D.**
Niels Bohr Institute, University of Copenhagen. Supervisors: Kell Mortensen & Lise Arleth
- 2007–2009 **M.Sc., Mathematical physics**
Niels Bohr Institute, University of Copenhagen. Thesis supervisor: Charlotte Fløe Kristjansen
- 2004–2007 **B.Sc., Mathematical physics**
Niels Bohr Institute & Department of Mathematical Sciences, University of Copenhagen. Thesis supervisor: Anders Sørensen

Scientific areas of interest

- Applied mathematics Persistent homology, applied and computational topology, applied and computational geometry, non-euclidean geometry, combinatorial group theory, mathematical crystallography, tiling theory
- Physics Structural soft matter and biophysics, active matter, X-ray and neutron science, scattering physics and theory, small-angle X-ray and neutron scattering, protein structure and morphology
- Materials science Periodic networks and reticular nets, soft matter materials science, molecular dynamics, liquid crystals, model foams, quasicrystals, crystallisation dynamics, nematic and p-atic crystals
- Computer science High-performace computing, general purpose GPU, optimization problems, word automata, visualization methods, data scientific methods, information theory

Grants and funding

- 2024 **The Villum Foundation, Villum Experiment Grant - approx. €275.000**
Funding for two years at the Niels Bohr Institute, University of Copenhagen
- 2024 **Faculty of Science, University of Copenhagen and Danish Data Science Academy - approx. €15.000**
Funding for Ph.D. school with co-applicant Jacob Kirkensgaard
- 2023 **Niels Bohr International Academy Assistant Professorship - approx. €200.000**
Funding for two years at the Niels Bohr International Academy, University of Copenhagen
- 2019–2020 **Faculty of Science, University of Copenhagen - approx. €20.000**
Funding for Ph.D. school and long-term visit by Stephen Hyde with co-applicant Jacob Kirkensgaard
- 2018 **The Villum Foundation, Villum Experiment Grant - approx. €200.000**
Funding for two years at the Niels Bohr Institute, University of Copenhagen
- 2017 **NVidia Academic GPU Seeding Grant - approx. €2.000**
NVidia GeForce Titan XP GPU
- 2015 **The Carlsberg Foundation, Internationalisation Fellowship - approx. €50.000**
Co-funding for a second year at Department of Applied Mathematics, Australian National University
- 2015 **The Stjepan Marcelja endowment fund - approx. €10.000**
Co-funding for a second year at Department of Applied Mathematics, Australian National University
- 2014 **The Carlsberg Foundation, Internationalisation Fellowship - approx. €50.000**
Funding for one year at Department of Applied Mathematics, Australian National University

Lectures, invitations, and organisation

- 2025 **Small-angle scattering: Principles, data analysis and advanced modeling II**
Co-organiser and lecturer, Ph.D. school at University of Copenhagen
- 2024 **38th Conference of the European Colloid and Interface Society**
Session committee member, Conference in Copenhagen, ecis2024.org
- 2024 **Small-angle scattering: Principles, data analysis and advanced modeling**
Co-organizer and lecturer, Ph.D. school at University of Copenhagen, indico.nbi.ku.dk/event/2069/
- 2024 **NBIA Workshop: A Copenhagen Afternoon on Geometry and Topology in Soft Materials**
Organiser, Symposium at University of Copenhagen, indico.nbi.ku.dk/event/2050
- 2022 **Geometry and Topology in Contemporary Materials Science III**
Organiser and lecturer, Ph.D. school at University of Copenhagen, indico.nbi.ku.dk/event/1316
- 2021 **25th General Assembly and Congress of the International Union of Crystallography**
Invited speaker, Conference in Prague, seafire.erda.dk/seafire/f/d865fc32bc
- 2020 **Symposium for Kell Mortensen**
Co-organiser, Symposium at University of Copenhagen
- 2020 **SIAM Conference on Mathematical Aspects of Materials Science: Data and Analysis**
Invited speaker, Conference at Basque Center of Applied Mathematics, Bilbao (Cancelled due to Covid-19)
- 2019 **AMS Special Session on Crystallographic and Highly Symmetric Patterns**
Invited speaker, Conference at University of Florida, Gainesville
- 2018 **Hot Topics: Shape and Structure of Materials**
Invited speaker, Conference at Mathematical Sciences Research Institute, University of California, Berkeley
- 2017 **Geometry and Topology in Contemporary Materials Science II**
Co-organiser and lecturer, Ph.D. school at University of Copenhagen, indico.nbi.ku.dk/event/938
- 2013 **Third Annual Niels Bohr International Academy Workshop on ESS Science**
Invited speaker, Workshop at University of Copenhagen

Commissions of trust

- 2024– **Ph.D. candidate assessment committee, Assessor/opponent**
Lund University
- 2023–2024 **PRISMAS, EU Marie-Skłodowska-Curie Actions COFUND project**
Central Selection Panel member, MaxIV Synchrotron & Lund University,
maxiv.lu.se/education-outreach/programs-and-activities/prismas
- 2022–2023 **Student Counselling Service**
Scientific support teacher, University of Copenhagen, srg.dk
- 2021– **Mathematical Reviews database/MathSciNet**
Reviewer, American Mathematical Society
- 2020–2022 **The Lundbeck Foundation Brainstruc Project**
Member of steering committee, University of Copenhagen and Aarhus University
- 2020–2023 **College 8 for Evaluation of Proposals for Neutron Scattering at ILL**
Subcommittee member, Institute Laue-Langevin, Grenoble
- 2018– **Peer reviewer**
Soft Matter, Acta Crystallographica A, IUCrJ, ACS Materials Au, Journal of Physical Chemistry B, Journal of Physical Chemistry C, Biophysical Journal, Journal of Applied Crystallography

IT and computer science

Mathematics	Mathematica, Matlab/Octave, GAP, Maple, CGAL, SymPy
Text editing	L ^A T _E X, Microsoft Office
Web	HTML5, CSS3, JavaScript
Languages	Python, C, C++, C#, OpenCL, Bash, Fortran
Graphics	Inkscape, PyMol, Gnuplot, SideFX Houdini, VMD, ImageJ/Fiji, Ovito, Vesta
Development	Subversion, Git, Unity
Simulations	HooMD-blue, Lammmps, Quantum Espresso, Phaistos, McStas, McXtrace
Machine learning	Tensorflow, PyTorch, Sci-kit-learn

Languages

Danish	Mothertongue	English	Full proficiency
German	Basic	Korean	Basic (세종 한국어 3B)

References

Prof./Vicedean Lise Arleth
Niels Bohr Institute
University of Copenhagen
arleth@nbi.ku.dk

Prof. Stephen T. Hyde
School of Chemistry
University of Sydney
stephen.hyde@sydney.edu.au

Assoc. Prof. Jacob J. K. Kirkensgaard
Niels Bohr Institute & Department of
Food Science
University of Copenhagen
jjkk@nbi.ku.dk

Prof. Kell Mortensen
Niels Bohr Institute
University of Copenhagen
kell@nbi.ku.dk

Assoc. Prof. Vanessa Robins
Research School of Physics
Australian National University
vanessa.robins@anu.edu.au

Assoc. Prof. Amin Doostmohammadi
Niels Bohr Institute & Niels Bohr
International Academy
University of Copenhagen
doostmohammadi@nbi.ku.dk