

# Magdalena Kersting

## Curriculum Vitae

Department of Teacher Education  
and School Research  
University of Oslo  
Postboks 1099  
0317 Oslo, Norway  
✉ [magdalena.kersting@ils.uio.no](mailto:magdalena.kersting@ils.uio.no)  
🌐 [www.magdalenakersting.com](http://www.magdalenakersting.com)

### Research Experience

- 3/2020 - present **Postdoctoral Researcher in Science Education**, *Department of Teacher Education and School Research*, University of Oslo, Norway, research project: Linking Instruction in Science and Student Impact (LISSI).
- 11/2019 **Visiting Research Fellow**, *Department of Engineering and Physics*, Karlstad University, Sweden, research project: Embodied cognition in science education. funded by the European Association for Research on Learning and Instruction (EARLI)
- 5-7/2019 **Visiting Research Fellow**, *Centre for Astrophysics & Supercomputing*, Swinburne University of Technology, Australia, research project: Virtual reality in astronomy education and public outreach. funded by the Research Council of Norway
- 8/2018-4/2019 **Visiting Research Fellow**, *School of Physics*, University of Western Australia & Gravity Discovery Centre, Australia, research project: Designing an astrophysics exhibition at the Gravity Discovery Centre. funded by the Research Council of Norway and the European Science Education Research Association (ESERA)

### Education

- 9/2015– **PhD in Physics Education**, *University of Oslo, Norway*.
- 12/2019 Thesis: General Relativity in Secondary School - Research-Based Development of Learning Resources and Analyses of Students' Conceptual Understanding Using the Model of Educational Reconstruction
- 6/2015– **Diploma Public Relations Management**, *Freie Journalistenschule, Berlin, Germany*.  
4/2018 Thesis: Communication at the crossroads of science and education
- 10/2012– **Master of Science in Mathematics**, *University of Göttingen, Germany & University of Oslo, Norway*.  
3/2015 Thesis: Exotic Crossed Products: Constructions and Open Questions
- 8/2014– **Master's Research Project**, *University of Oslo, Norway*.  
3/2015 funded by the German Academic Exchange Service

- 1–7/2013 **Exchange Semester**, *University of Oslo, Norway.*  
funded by the European Community Action Scheme for the Mobility of University Students (ERASMUS)
- 10/2009–  
8/2012 **Bachelor of Science in Mathematics**, *University of Göttingen, Germany.*  
Thesis: Konvexitätsätze in symplektischer Geometrie (Convexity theorems in symplectic geometry)
- 10/2008–  
8/2011 **Bachelor of Science in Physics**, *Max Planck Institute for Dynamics and Self-Organisation & University of Göttingen, Germany.*  
Thesis: Reconstruction of Correlation Networks

## Professional Memberships

- ESERA **European Science Education Research Association.**
- IOP **Institute of Physics.**
- GIREP **International Research Group on Physics Teaching.**
- ASERA **Australasian Science Education Research Association.**
- ISGRG **International Society of General Relativity & Gravitation.**

## Professional Activities

- 2021-present **Deputy Project Leader**, *Deputy project leader of project LISSI (Linking Instruction in Science and Student Impact).*
- 2020-present **Working Group Leader**, *Co-leader of the Education and Evaluation Working Group of the International Gravity Outreach Group IGrav.*
- 2020-present **News & Site Admin**, *News & site admin for the COSER research group (Challenges of Sustainability in Educational Research), University of Oslo.*
- 2018–present **Reviewer**, *Journals: Science & Education, Physical Review Physics Education Research, Pedagogies: An International Journal, Astronomy Education Journal.*
- 08/2021 **PhD opponent for NAFOL**, *The Norwegian National Research School in Teacher Education (NAFOL)*, PhD candidate: Leonie Isabelle Johann, Thesis: Facing educational challenges in molecular life sciences - A project to construct, and evaluate content for cell membrane teaching by considering students' and scientists' conceptions.
- 7/2021 **PhD Mentor**, *Mentor for PhD students in science education at the annual summer school of the European Science Education Research Association (ESERA).*
- 3/2021 **Conference Session Chair**, *1st Electronic Conference on Universe ECU2021, Session: Teaching Relativity and Modern Physics in General.*
- 2020–2021 **Participant at the Mentoring Programme for Female Postdocs**, *Gender Equality Coordination Group, University of Oslo.*

- 2020–2021 **Postdoc Career Success Training**, *PostdocTraining Participapnt*, University of Oslo.
- 2016–2017 **Events Officer**, *Events officer for UiODoc, the interest organisation for PhD students and postdocs at the University of Oslo.*
- 11/2016 **Conference Committee Member**, *International Workshop on the Teaching and Learning of Einsteinian Physics*, Gravity Discovery Centre, Gingin, Australia.

## █ Awards & Honours

- 2021 **New Philosopher Writers' Award**, *Runner-up for the New Philosopher Writers' Award XXXI: Space*, Runner-up piece: Spaces Without and Within.
- 2021 **New Philosopher Writers' Award**, *Winner of the New Philosopher Writers' Award XXX: Perception*, Winning piece: The interplay between nature and ourselves.
- 2021 **Young Leader in Physics**, *Invited participant at the American Physical Society's International Young Leaders Forum.*
- 2021 **Early Career Physics Communicator Commissioning Award**, *Institute of Physics.*
- 2020 **PhD Prize**, *International Astronomical Union PhD Prize for outstanding scientific achievement*, Division: Education, Outreach and Heritage.
- 2019 **Hartle Award for Best Oral Talk by a Student in Education & Public Outreach**, *GR22/Amaldi13 Conference in Valencia, Spain*, 22nd edition of the International Conference on General Relativity and Gravitation and the 13th edition of the Edoardo Amaldi Conference on Gravitational Waves.
- 2019 **Best Oral Presentation of a Young Researcher in Physics Education**, *GIREP conference in Budapest, Hungary*, International Research Group on Physics Teaching.
- 2017 **Winner of the Science on Stage National Competition in Norway**, Science on Stage in collaboration with the Norwegian Society of Graduate Technical and Scientific Professionals Tekna.
- 2012 **Winning Photo Essay**, *University contest to celebrate the 275-year anniversary of the University of Göttingen*, Göttingen, Germany.
- 2011 **Bachelor of Science in Physics with Distinction**, *Max Planck Institute for Dynamics and Self-Organisation & University of Göttingen*, Thesis: Reconstruction of Correlation Networks.
- 2008 **German Physical Society Membership Award**, *for excellent A-levels in Physics*, Freiherr-vom-Stein Secondary School, Fulda, Germany.

## Grants & Scholarships

- 2019 **Qualification Scholarship**, awarded by the Science Studies Colloquium Norway.  
Funding: 30.000 NOK for the research project "Einstein's Impact on Society"
- 2019 **Early Career Mentoring Grant**, awarded by the European Association for Research on Learning and Instruction (EARLI).  
Funding: 2000 Euro to cover travel costs and accommodation during a research stay at Karlstad University
- 2018 **Personal Overseas Research Grant**, awarded by the Norwegian Research Council.  
Funding: 189.000 NOK to cover living expenses during research stays at the University of Western Australia and Swinburne University of Technology
- 2018 **Travel Grant**, awarded by the European Science Education Research Association (ESERA).  
Funding: 1000 Euro to cover travel costs during a research stay at the University of Western Australia
- 2016 **Workshop Grant**, awarded by the Norwegian Research Council, joint application with the Research Section for Physics Education at the University of Oslo.  
Funding: 80.000 NOK to co-organise the International Workshop on the Teaching and Learning of Einsteinian Physics at Gravity Discovery Centre in Gingin, Australia
- 2014 **Promos Mobility Stipend**, awarded by the German Academic Exchange Service.  
Funding for a 7-months master's research project at the University of Oslo

## Teaching Experience

Currently, I teach graduate courses in science education for the Teacher Education Programme at the University of Oslo, and I supervise master students in this programme, too.

- 2020-2021 **Graduate Courses**, *Course Reader*, Oslo, Norway.
- (Spring 2021) NATDID4001 - Natural Sciences, Research, and Schools
  - (Autum 2020) PPU3210 - Instruction and Learning Progression: Science Education
- 2016-2018 **Undergraduate and Graduate Courses**, *Teaching Assistant*, Oslo, Norway.
- (Spring 2018) FYS4160 - General Relativity
  - (Spring 2017) FYS4160 - General Relativity
  - (Autumn 2016) FYS1120 - Electromagnetism
- 2014-2015 **Revision Courses**, *Course Reader*, Göttingen, Germany.
- (4/2015) Multimedia Revision Course in Calculus
  - (3/2014) Revision Course in Calculus

2010–2014 **Undergraduate Courses**, *Teaching Assistant*, Göttingen, Germany.

- (Winter 2013/14) Calculus
- (Summer 2012) Complex Analysis
- (Winter 2011/12) Calculus
- (Summer 2011) Electrodynamics
- (Winter 2010/11) Calculus

2009–2013 **Freshmen Courses**, *Course Reader*, Göttingen, Germany.

- (9/2013) Mathematics for Agricultural Science and Forestry Students
- (10/2010) Physics for Agricultural Science and Forestry Students
- (9/2010) Mathematics for Physics and Mathematics Students
- (10/2009) Physics for Agricultural Science Students

## Teacher Professional Development Workshops

I regularly lead teacher professional development workshops on topics of modern physics education. These courses last between two hours and one day, and I develop the course materials and implement the courses both face-to-face and online. Please see the attached confirmation by Bro AOF.

- 4/2021 Bro AOF & Fagforum for Realfag Agder (virtual workshop)
- 7/2020 International Physics & Astronomy Educator Program of the LIGO Scientific Collaboration (virtual workshop)
- 12/2018 Science Teacher Association of Western Australia (STAWA) Future Science, Perth, Australia
- 11/2018 University of Western Australia, Perth, Australia
- 6/2018 Sandefjord Highschool, Sandefjord (joint workshop with Ellen Henriksen), Norway
- 11/2017 University of Bergen, Bergen, Norway (joint workshop with Carl Angell)
- 10/2017 Bro Aschehoug, Oslo, Norway

## Science Communication & Outreach Activities

- 8/2021 **Summer School Participant**, *Invited Participant at the International Summer School "Communicating Science"*, Wissenschaft im Dialog, the German organisation for science communication of the scientific community.
- 2020–present **Podcast Contributor**, *Script writer and podcast guest for popular German physics podcast "Sag mal du als Physiker"*.
- 2018–2019 **Science Blogger**, *Blogger for Titan, the science magazine of the Faculty of Mathematics and Natural Sciences at the University of Oslo*.
- 2016–2018 **Judge in Norwegian Youth Science Contests**, *Contests "Hvorfor det?" & "Unge Forskere"*.
- 2013–2016 **Editor in Chief**, *Editor in chief of student physics magazine "Detektor"*, German Physical Society.

- 9-12/2012 **Science Journalism Intern**, *Intern with German physics portal "Welt der Physik"*, Hamburg, Germany.
- 2009–2012 **Student Blogger**, *Blogger for the physics learning platform of the University of Göttingen*.

### Selection of Invited Talks

- 06/2021 **Engaging the Public with Astrophysics Virtual Reality Experiences**, *IPTA Science Week*, the International Pulsar Timing Array, virtual talk.
- 03/2021 **Engaging the Public with Astrophysics Virtual Reality Experiences**, *JILA Astrophysics Friday Seminar*, University of Colorado Boulder, virtual talk.
- 02/2020 **Impact in Einsteinian Physics Education**, *Inaugural Einstein-First International Workshop: Teaching Einsteinian Physics in Schools*, Perth, Australia. (Key Note Talk)
- 11/2019 **Computer-Supported Collaborative Learning & Embodied Conceptions of Spacetime**, *Örebro University*, Örebro, Sweden.
- 11/2019 **Embodied Cognition in Science Education - Examples from Relativity**, *Karlstad University*, Karlstad, Sweden.
- 11/2019 **Computer-Supported Collaborative Learning & Embodied Conceptions of Spacetime**, *Linköping University*, Norrköping, Sweden.
- 7/2019 **Impact in Physics Education: the Transformational Power of Educational Research Collaborations**, *Institute of Physics*, London, UK.
- 7/2019 **Bringing General Relativity to Secondary Schools: Design and Evaluation of a Digital Learning Environment**, *GR22-Amaldi13*, Valencia, Spain.
- 2/2019 **Curved Spacetime: Investigating Students' Conceptual Understanding in General Relativity**, *WE-Heraeus Seminar*, Bad Honnef, Germany.
- 12/2016 **General Relativity: Making Einstein's Theory Teachable**, *Future Science Conference*, Perth, Australia.

### Chaired Conference Symposia

- 07/2019 **Teaching and Learning of Einsteinian Physics**, *International Research Group on Physics Teaching (GIREP) Conference 2019*, Budapest, Hungary. Contributions from Norway, Australia, Israel, and Czech Republic
- 07/2018 **International Perspectives on Einsteinian Physics at the Upper Secondary School Level**, *International Research Group on Physics Teaching (GIREP) Conference 2018*, San Sebastian, Spain. Contributions from Norway, Australia, the Netherlands, and Czech Republic

- 07/2017 **The Teaching and Learning of Einsteinian Physics in International Contexts**, *International Research Group on Physics Teaching (GIREP) Conference 2017*, Dublin, Ireland.  
Contributions from Norway, Australia, and Germany

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## Selection of Conference Talks

- 7/2021 **Reflecting on Design Principles for Virtual Reality Experiences in Astronomy Education**, *Edoardo Amaldi Conference on Gravitational Waves*, virtual conference.
- 5/2021 **Exploring participant engagement during an astrophysics virtual reality experience at a science festival**, *Communicating Astronomy with the Public 2021*, virtual conference.
- 5/2021 **Learning Processes of Embodied Interaction with Disembodied Concepts**, *Speaking Bodies: Embodied Cognition at the Crossroads of Philosophy, Linguistics, Psychology and Artificial Intelligence*, virtual conference.
- 11/2020 **Instructional Strategies to Foster Motivation for Einsteinian Physics Among Middle School Girls**, *International Research Group on Physics Teaching (GIREP) Conference 2020*, virtual conference.
- 8/2020 **Learning Processes of Embodied Interaction with Disembodied Concepts in CSCL Environments**, *European Association of Research in Learning and Instruction (EARLI) SIG 6 & 7 conference*, virtual conference.
- 8/2019 **Design-based Research and the Model of Educational Reconstruction - a Combined Approach to Design Successful Science Instruction**, *European Science Education Research Association (ESERA) Conference 2019*, Bologna, Italy, joint talk with Floor Kamphorst, Utrecht University.
- 7/2019 **Free Fall in Curved Spacetime - How to Visualize Gravity in General Relativity**, *International Research Group on Physics Teaching (GIREP) Conference 2019*, Budapest, Hungary.
- 12/2018 **General Relativity in Upper Secondary School: Design and Evaluation of an Online Learning Environment**, *23rd Australian Institute of Physics Congress*, Perth, Australia.
- 7/2018 **Navigating Four Dimensions - Upper Secondary Students' Understanding of Movement in Spacetime**, *International Research Group on Physics Teaching (GIREP) Conference 2018*, San Sebastian, Spain.
- 7/2018 **How History and Philosophy of Science Can Inform Teaching and Learning of General Relativity in Upper Secondary School**, *15th Marcel Grossmann Meeting*, Rome, Italy.
- 8/2017 **Educational Reconstruction of General Relativity Through a Collaborative Online Learning Environment**, *European Association of Research in Learning and Instruction (EARLI) JURE conference 2017*, Tampere, Finland.

8/2017 **Gravity, Imagination, and Embodied Conceptions of Spacetime**, *European Science Education Research Association (ESERA) Conference 2017*, Dublin, Ireland.

7/2017 **An International Research Collaboration in the Teaching and Learning of Einsteinian Physics**, *International Research Group on Physics Teaching (GIREP) Conference 2017*, Dublin, Ireland.

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## Languages

**German** Native Speaker  
**Norwegian** Fluent

**English** Fluent  
**French** Basic Working Knowledge