

**SISKA DE BAERDEMAEKER**

**AREAS OF SPECIALIZATION:** History & Philosophy of Physics (Cosmology & Astrophysics), History & Philosophy of Science

**AREAS OF COMPETENCE:** Biomedical Ethics, Logic & Critical Reasoning

**ACADEMIC APPOINTMENTS**

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- 2023- **Principal researcher** – Stockholm University, Philosophy. Project: “Discovering Dark Matter: Extending Philosophy of Experiment to Dark Matter” (Riksbankens Jubileumsfond).  
*Long-term full- or part-time sick leave between June 2023 and May 2024*
- 2022-2023 **Lecturer (part-time)** – Stockholm University, Philosophy.
- 2020-2022 **Postdoctoral Researcher** – Stockholm University, Philosophy. Project: “Non-Empirical Theory Confirmation in Fundamental Physics”. PI: Richard Dawid.

**EDUCATION**

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- 2020 **PhD** – University of Pittsburgh, History & Philosophy of Science  
Dissertation: “Cosmology: The Impossible Integration?”  
Committee: John Norton (chair), Arthur Kosowsky, Sandra Mitchell, James Woodward
- 2019 **Visiting Graduate Student** – University of Edinburgh, School of Philosophy, Psychology & Language Sciences, under supervision of Michela Massimi (February 10 – March 13)
- 2013 **M.A.** – KU Leuven, Philosophy
- 2014 **B.Sc.** – KU Leuven, Physics
- 2012 **B.A.** – KU Leuven, Philosophy

**PUBLICATIONS**

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**Monographs**

Under contract *Philosophy of Cosmology and Astrophysics*. Cambridge University Press (Cambridge Elements in Philosophy of Physics)

**Edited volumes**

- 2023 Boyd, Nora M., **De Baerdemaeker, Siska**, Heng, Kevin, & Vera Matarese (Eds.). *Philosophy of Astrophysics: Stars, Simulations, and the Struggle to Determine What is Out There* Synthese Library (Vol. 472). Springer Nature. <https://doi.org/10.1007/978-3-031-26618-8>

**Peer-reviewed articles**

- 2022 **Siska De Baerdemaeker** & Richard Dawid. MOND and Meta-Empirical Theory Assessment. *Synthese* 200 (344). <https://doi.org/10.1007/s11229-022-03830-8>
- 2022 **Siska De Baerdemaeker** & Mike D. Schneider. Better Appreciation the Scale of It (Lemaître and de Sitter at the BAAS Centenary). *HOPOS*. 12(1): 170-188  
<https://doi.org/10.1086/719017>
- 2021 **Siska De Baerdemaeker**. Method-Driven Experiments and the Search for Dark Matter. *Philosophy of Science*. 88 (1). <https://doi.org/10.1086/710055>

- 2020 **Siska De Baerdemaeker** & Nora Boyd. Jump Ship, Shift Gears, or Just Keep on Chugging: Assessing the Responses to Tensions between Theory and Evidence in Contemporary Cosmology. *Studies in History and Philosophy of Modern Physics*. 72: 205-216. <https://doi.org/10.1016/j.shpsb.2020.08.002>

### Book chapters

- Forthcoming Vera Matarese, **Siska De Baerdemaeker** & Nora Mills Boyd. Introduction. In: *Philosophy of Astrophysics. Stars, Simulations, and the Struggle to Determine What Is Out There*. Synthese Library. Nora Mills Boyd, Siska De Baerdemaeker, Vera Matarese, Kevin Heng (Eds.)

### Other articles

- 2023 Mike D. Schneider & **Siska De Baerdemaeker**. Cosmology and Empire. *Nature Astronomy* 7: 368–370. <https://doi.org/10.1038/s41550-023-01940-y> (Commentary piece)

### GRANTS, FELLOWSHIPS AND AWARDS (SELECTED)

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- 2023-2025 Riksbankens Jubileumsfond Project: “Att upptäcka mörk materia: Hur man utvidgar filosofin om experiment till mörk materia” (SEK 2 685 000)
- 2021 Seed fellowship from the New Directions in Philosophy of Cosmology research project, funded by a grant from the John Templeton Foundation: “The 1931 BAAS Public Debate on “The Expanding Universe” (USD 4,000)
- 2020, 2019 Nominee for the University of Pittsburgh Arts & Sciences Graduate Student Organization Elizabeth Baranger Teaching Award
- 2014-2015 Honorary Fellow of the Belgian American Education Fund

### PRESENTATIONS & CONFERENCE PARTICIPATION

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#### Invited presentations

- 2024 “Dark Matter Realism Reconsidered”, Higher Seminar in Philosophy, Linköping University, Linköping, Sweden (December 4)
- 2024 “Cosmology and Empire”, Institut de Physique de Rennes, Rennes, France (May 21)
- 2023 Three lectures on philosophy of dark matter, XXVI International Summer School in Philosophy of Physics, Urbino, Italy (June 5 – 9)
- 2022 “Empire and Cosmology”, SU Philosophy Colloquium, Stockholm, Sweden (December 8)
- 2022 “When the Expanding Universe was New...”, The Oskar Klein Centre Colloquium, Stockholm, Sweden (December 8)
- 2022 “Into the Unknown? Exploring Dark Matter with Stellar Streams”, Bergen Workshop in Philosophy of Science, Bergen, Norway (September 20 – 21)
- 2022 “MOND and MEA”, Workshop on The Role of Theory Confirmation in Science, Stockholm, Sweden (May 5-7)
- 2022 “Into the Unknown? Exploring Dark Matter with Stellar Streams”, PHEP 2020: Early Career Conference in Philosophy of Particle and High-Energy Physics, Pittsburgh, USA (November 14 – 15) – *Rescheduled from November 2020*
- 2021 Research visit to Cosmology Beyond Spacetime Project, University of Geneva, Switzerland (December 8–10)
- 2021 “Into the Unknown? Exploring Dark Matter with Stellar Streams”, Black Hole Initiative, Harvard University, Cambridge, USA (October 4)
- 2021 “Confirming MOND?”, Aarhus Universitet, Aarhus, Denmark (September 29)

- 2021 “Exploratory Observations with Stellar Streams”, Universität zu Köln, Cologne, Germany (June 30)
- 2021 COPS Lunch seminar, The Oskar Klein Center, Stockholm, Sweden (June 14)
- 2021 “Exploratory Observations with Stellar Streams” (lightning talk), Philosophy of Dark Matter Workshop, Bonn, Germany (March 29-30)
- 2021 “Method-driven Experiments and the Search for Dark Matter”
- Higher Seminar in Theoretical Philosophy, Stockholm University, Stockholm, Sweden (March 4)
  - Research Seminar, Lichtenberg Group for History and Philosophy of Physics, University of Bonn, Bonn, Germany (February 9)
  - Seminars in Philosophy of Science, Laboratoire Astroparticule & Cosmologie, Paris, France (January 14)
- 2020 “What Scale Has to Do with It”, Higher Seminar in the Philosophy of Science, Stockholm University, Stockholm, Sweden (September 17)
- 2020 “Experiments in Cosmology”, Conference on the Foundations of Cosmology and Quantum Gravity, Abu Dhabi, UAE (January 19 – 21)
- 2019 “Method-driven Experiments in Astroparticle Physics”
- Workshop on Evidence in Astrophysics, Madrid, Spain (June 21)
  - Symposium Series of the CLPS, University of Leuven, Leuven, Belgium (March 15)
- 2018 “Evidential Integration in Cosmology”, 2nd Leuven – Buenos Aires Workshop in Philosophy of Physics, Leuven, Belgium (July 22 – 23)

#### **Peer-reviewed presentations**

- 2024 “Dark Matter Realism Reconsidered” (poster presentation), 28th Biennial Meeting of the Philosophy of Science Association, New Orleans, USA (November 14 – 17)
- 2023 “Dark matter and Dark Matter”, 9<sup>th</sup> Biennial Meeting of the European Philosophy of Science Association Meeting, Belgrade, Serbia (September 20 – 23) – *Cancelled due to sick leave*
- 2022 “Exploring Dark Matter with Stellar Streams”, 9<sup>th</sup> Biennial Meeting of the Society for Philosophy of Science in Practice, Ghent, Belgium (July 2 – 4)
- 2022 “Cosmology and Cosmogony When The 'Expanding Universe' Was New: Debates at the BAAS”, with Mike D. Schneider, HOPOS 2022, Irvine, USA (June 20 – 23)
- 2021 “Exploratory Observations with Stellar Streams” (poster presentation), 27th Biennial Meeting of the Philosophy of Science Association, Baltimore, USA (November 11 – 14) – *Rescheduled from November 2020*
- 2021 “Exploratory Observations with Stellar Streams”, Sciences of the Origin: The Challenges of Selection Effects and Biases, Online conference (June 3 – 5)
- 2019 “Jump Ship, Shift Gears, or Just Keep on Chugging: Assessing the Responses to Tensions between Theory and Evidence in Contemporary Cosmology”, with Nora Boyd, Dark Matter and Modified Gravity Conference, Aachen, Germany (February 6 – 8)
- 2018 “Integrating in the Face of Contradiction: Lessons from Cosmology”, 26th Biennial Meeting of the Philosophy of Science Association, Seattle, USA (November 1 – 4)
- 2018 “Evidential Integration in Cosmology”, &HPS: International Conference on Integrated History and Philosophy of Science, Hannover, Germany (July 5 – 7)
- 2018 “Integrating evidence in cosmology: the search for dark matter”, 7th Society for the Philosophy of Science in Practice Biennial Conference, Ghent, Belgium (June 29 – July 1)
- 2016 “Georges Lemaître and the Role of Observations in Early Twentieth Century Relativistic Cosmology”

- 32<sup>nd</sup> Boulder Conference on the History and Philosophy of Science: “Gravity: Its History and Philosophy”, University of Boulder, Boulder, USA (October 30)
- History of Science Society Annual Meeting, Atlanta, USA (November 2)

#### **Invited discussant or commentator**

- 2022 Discussion leader for International Summer Institute in Philosophy of Quantum Gravity and Cosmology, Morzine, France (June 26-July 1)
- 2021 Panelist for closing discussion, Philosophy of Dark Matter Workshop, Bonn, Germany (March 29-30)
- 2019 Comments on “Models in Cosmology: Knowing What to Believe” (John Peacock), Cross-disciplinary Perspectives on Model-Independent Searches, Edinburgh, UK (February 11 – 12)
- 2018 Chair and discussant for “Norton for Everyone? The Material Theory of Induction and Beyond”, Center for Philosophy of Science, Pittsburgh, USA (October 27 – 28)
- 2018 Invited discussant at 22<sup>nd</sup> Seven Pines Symposium, “What Counts as Evidence?”, Stillwater, USA (May 16 – 20)
- 2017 Invited discussant at 21<sup>st</sup> Seven Pines Symposium, “Black Holes in the Spotlight”, Stillwater, USA (May 17 – 21)
- 2017 Reading group leader at Philosophy of Cosmology Workshop, CUNY Graduate Center, New York City, USA (May 5)
- 2017 Discussant at “Methodology and Epistemology in Cosmology”, UC Irvine, Irvine, USA (February 10 – 12)
- 2016 Invited discussant at 20<sup>th</sup> Seven Pines Symposium, “Big Questions. Some Fundamental Problems in Physics”, Stillwater, USA (May 11 – 15)

#### **Summer school**

- 2018 Rotman Summer Institute in Philosophy of Cosmology, Ontario, Canada (June 11 – 20)
- 2015 3<sup>rd</sup> International Summer School in Philosophy of Physics, “The Ontology of Physics”, Saig, Germany (July 20 – 25)

### **TEACHING EXPERIENCE**

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#### **Primary instructor (Stockholm University)**

- 2024 Philosophy of Science I (early Fall)
- 2024 Introduction to Philosophy of Science (Summer)
- 2022 MA Seminar on Philosophy of Experiment (late Fall)
- 2022 Philosophy of Science I (early Fall)
- 2022 TF I: Philosophy of Science Module (early Fall)
- 2022 Philosophy of Science I (early Spring)
- 2021 Scientific Method and Research Ethics (co-taught; early Fall)
- 2021 Philosophy of Science I (early Spring)
- 2020 Philosophy of Physics (late Fall)
- 2020 Scientific Method and Research Ethics (co-taught; early Fall)

#### **Primary instructor (University of Pittsburgh)**

- 2020 Morality & Medicine: Biomedical Ethics (Spring)
- 2019 Morality & Medicine: Biomedical Ethics (Fall)
- 2018 Space, Time, and Matter: History of Cosmology and Astronomy (Spring)
- 2017 Principles of Scientific Reasoning (Fall)

### Teaching assistant (University of Pittsburgh)

- 2016 Mind & Medicine (Spring)  
2015 Introduction to Philosophy of Science (Fall)

### Teaching training

- 2016 – 2018 Achievement in Pedagogy Badge, offered by the Graduate Student Teaching Initiative at the Center for Teaching and Learning, University of Pittsburgh  
2016 AAPT Workshop on Teaching and Learning in Philosophy with a Special Emphasis on Inclusive Pedagogy, University of Pittsburgh (February 4)

### SERVICE

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#### Conference organization

- 2022 Co-organizer of a workshop on establishing the philosophy of SUSY, Stockholm University, Stockholm, Sweden (May 24 – 25)  
2022 Co-organizer of a workshop on the role of theory confirmation in science, Stockholm University, Stockholm, Sweden (May 5 – 7)  
2021 Co-organizer of a workshop on integrative strategies, Center for Philosophy of Science, Pittsburgh, USA – *Canceled due to the Covid-19 pandemic*  
2017 Co-organizer of “Super-PAC: Early Career Workshop in Philosophy of Astrophysics and Cosmology”, Center for Philosophy of Science, Pittsburgh, USA (October 27 – 29)  
2015, 2017 Reviewer for the Pitt-CMU Graduate Student Conference

#### Service to the department

- 2021 – current Co-founder and organizer of a Minorities and Philosophy chapter at Stockholm University  
2018 – 2019 Co-organizer of a philosophy of cosmology discussion group with participants from the HPS department and the Physics department at the University of Pittsburgh  
2018 – 2019 Graduate student representative on the ALS Speaker Nomination Committee  
2018 HPS Graduate Student Representative  
2016 – 2017 HPS Representative to the Arts and Sciences Graduate Student Organization  
2015 HPS Work in Progress Talks Organizer

#### Public outreach

- 2023 Educator, TED-Ed video and associated lesson on “Science and Pseudo-science” (380,000+ views) <https://ed.ted.com/lessons/science-vs-pseudoscience-siska-de-baerdemaeker/watch>  
2023 Scientifika talk (accessible research talks for early-career researchers in Stockholm): “Science by any other name”, Stockholm, Sweden (April 14)  
2022 Scientifika talk (accessible research talks for early-career researchers in Stockholm): “Is this the real life? Is this just fantasy? The realism/anti-realism debate in philosophy of science (or: yes, philosophers love terrible puns too!)”, Stockholm, Sweden (April 8)  
2019 Public Lecture at the Amateur Astronomers Association of Pittsburgh: “The Rise and Fall of Anomalies in Science”, Pittsburgh, PA (September 13)  
2019 Guest on “Let’s Go to the Archives, Episode 2: Harmonia Macrocosmica”, available here: <https://www.youtube.com/watch?v=8bf7z0ME2A>  
2018 Astro on Tap talk: “You say you want a revolution (in your cosmological theories)?”, Pittsburgh, PA (April 26)  
2018 Public Lecture at the Allegheny Observatory: “Space Oddities”, Pittsburgh, PA (April 20). With Nora Boyd.

2017 Co-creator of an Instant HPS video on the discovery of Brownian motion, “The Botanist and the Sphynx”, available here: [https://www.youtube.com/watch?v=qukJ\\_gpN\\_VSY](https://www.youtube.com/watch?v=qukJ_gpN_VSY). With William Penn and John Norton.

**Reviewer**

Philosophy of Science, British Journal for Philosophy of Science, European Journal for Philosophy of Science, Studies in History and Philosophy of Science, Synthese, Journal for General Philosophy of Science

**NON-ACADEMIC EMPLOYMENT**

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2022 – 2023 **Communications officer** for The Oskar Klein Centre for Cosmology, Astrophysics and Cosmoparticle Physics