Helen Meskhidze

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APPOINTMENTS

Assistant Professor — Cincinnati, Ohio
University of Cincinnati — *August 2025 -*

Postdoctoral Fellow — Cambridge, Massachusetts
Black Hole Initiative, Harvard University — *September 2023 - Present*

EDUCATION

University of California, Irvine — Irvine, California
PhD in Philosophy with an emphasis in Philosophy of Physics — *September 2017 - August 2023*
Thesis: "Spacetimes with Torsion"
Dissertation advisor: J.O. Weatherall.

Western University — London, Ontario
MA in Philosophy — *September 2016 - August 2017*
Thesis: "Simulationist's Regress in Laboratory Astrophysics"
Thesis advisor: J. Sullivan

Elon University — Elon, North Carolina
BA in Philosophy, BS in Physics, Minor in French — *August 2012 - May 2016*
Honors: Phi Beta Kappa Scholar, Lumen Scholar, Honors Fellow, Presidential Scholar
Honors Thesis: "Developing an Atlas of Starburst Galaxy Emission Line Equivalent Widths"
Thesis advisor: C. Richardson

PUBLICATIONS

Disciplinary Publications

8. **Meskhidze, H.** (forthcoming). "Beyond classification and prediction: The promise of physics-informed machine learning," in *Philosophy of Science for Machine Learning: Core Issues, New Perspectives*, edited by Pozzi, G. and Durán, J.M. Synthese Library.
7. **Meskhidze, H.**, Weatherall, J.O. (2023). "Torsion in the Classical Spacetime Context," *Philosophy of Science*, published online.
6. **Meskhidze, H.** (2023). "(What) Do we learn from code comparisons? A case study of self-interacting dark matter implementations," in *Philosophy of Astrophysics: Stars, Simulations, and the Struggle to Determine What is Out There*, edited by Boyd, N. M., De Baerdemaeker, S., Matarese, V., and Heng, K. Synthese Library, 472.
5. **Meskhidze, H.**, Mercado, F. J., Sameie, O., Robles, V. H., Bullock, J. S., Kaplinghat, M., Weatherall, J. O. (2022). "Comparing Implementations of Self-Interacting Dark Matter in the Gizmo and Arepo Codes," *Monthly Notices of the Royal Astronomical Society*, 513(2), 2600-2608.
4. **Meskhidze, H.** (2021). "Can machine learning provide understanding?: How Cosmologists Use Machine Learning to Understand Observations of the Universe," *Erkenntnis*, 88, 1895–1909.

3. Jones, O.C., Maclay, M.T., Boyer, M.L., Meixner, M., McDonald, I., **Meskhidze, H.** (2018). "Near-infrared Stellar Populations in the Metal-poor, Dwarf Irregular Galaxies Sextans A and Leo A," *Astrophysical Journal*, 854(2), 117.
2. **Meskhidze, H.**, Richardson, C.T. (2017). "An Atlas of Star-forming Galaxy Equivalent Widths," *Astrophysics and Space Science*, 362(11), 200.
1. Richardson, C.T., Allen, J.T., Baldwin, J.A., Hewett, P.C., Ferland, G.J., Crider, A., **Meskhidze, H.** (2015). "Interpreting the Ionization Sequence in Star-Forming Galaxy Emission-Line Spectra," *Monthly Notices of the Royal Astronomical Society*, 458(1), 988-1012.

Teaching and Learning Publications

Invited

3. Wilson, S.P., Phillips, J.C., **Meskhidze, H.**, Lockard, C., Felten, P., McGowan, S., Bloch-Schulman, S. (2020). "From Novelty to Norm: Moving beyond exclusion and double justification problem in student-faculty partnerships," in *The Power of Student-Staff Partnerships: Revolutionizing Higher Education*, edited by Lucy Mercer-Mapstone and Sophia Abbot. Elon University Center for Engaged Teaching Open-Access Series.
2. **Meskhidze, H.**, Lockard, C., Bloch-Schulman, S. (2019). "An Invitation to Scholarly Teaching: Annotated Bibliography of Resources for the Science of Learning," in *American Association of Philosophy Teachers Studies in Pedagogy*, 5, 169-199.

Peer-reviewed

1. Lockard, C., **Meskhidze, H.**, Wilson, S., Bloch-Schulman, S., Batchelor, N., Cahill, A.J. (2017). "Using Focus Groups to Explore the Underrepresentation of Female-Identified Undergraduate Students in Philosophy," *Feminist Philosophy Quarterly*, 3(4).

Works in Progress

3. "The Classical Limit of Teleparallel Gravity," (under review, draft available)
2. "Are General Relativity and Teleparallel Gravity Theoretically Equivalent?," with J.O. Weatherall (under review, draft available)
1. "Feminist and Trauma-Informed Approaches to Teaching Formal Philosophy," with Francisco Calderón and Thomas Colclough (under review, draft available)

PRESENTATIONS

Invited

21. **Meskhidze, H.** "The Promise and Limits of Physics-Informed Machine Learning," COSMOS: History & Philosophy of Cosmology Network, 2024, online.
20. **Meskhidze, H.** "(What) Do we learn from code comparisons?: A case study of implementations of self-interacting dark matter," Black Hole Initiative Colloquium and History, Philosophy, and Culture Meeting, 2023, Harvard University.
19. **Meskhidze, H.** "(What) Do we learn from code comparisons?: A case study of implementations of self-interacting dark matter," Philosophy of Contemporary and Future Science Project at Lingnan University, 2023, online [recording].
18. **Meskhidze, H.** "(What) Do we learn from code comparisons? A case study of implementations of self-interacting dark matter," Philosophy of Dark Matter Workshop, 2021, online.

Peer-reviewed

17. **Meskhidze, H.** "Understanding Complexification as a Solution-Generating Technique in General Relativity," Eastern Division Meeting of the American Philosophical Association, 2025, New York.
16. **Meskhidze, H.** "A Discussion of Some Solution-generating Techniques in General Relativity," Methodological Transformations in Fundamental Physics, 2024, University of Wuppertal, Germany.
15. **Meskhidze, H.** and Kocherlakota, P. "A Discussion of Some Solution-generating Techniques in General Relativity," History, Philosophy, and Culture Working Group of the Next Generation Event Horizon Telescope, 2024, Black Hole Initiative, Harvard University. [recording]
14. **Meskhidze, H.**, Calderón, F., and Colclough, T. "Feminist and Trauma-Informed Approaches to Teaching Formal Philosophy," American Association of Philosophy Teachers Biennial Workshop-Conference on Teaching Philosophy, 2024, Otterbein University, Ohio.
13. **Meskhidze, H.**, Calderón, F., and Colclough, T. "Feminist and Trauma-Informed Approaches to Teaching Formal Philosophy," First Feminist Philosophy of Physics Workshop, 2024, Ann Arbor, Michigan.
12. **Meskhidze, H.**, Calderón, F., and Colclough, T. "Feminist and Trauma-Informed Approaches to Teaching Logic," Amplifying Underrepresented Voices in Formal Philosophy, 2024, King's College, London, U.K.
11. **Meskhidze, H.** and Weatherall, J.O. "Are General Relativity and Teleparallel Gravity Theoretically Equivalent?," Congress of Logic, Methodology, and Philosophy of Science, 2023, Buenos Aires, Argentina.
10. **Meskhidze, H.** and Weatherall, J.O. "Are General Relativity and Teleparallel Gravity Theoretically Equivalent?," Foundations of Physics, 2023, Bristol, U.K.
9. **Meskhidze, H.** "The Classical Limit of Teleparallel Gravity," 2023, Foundations of Physics, Bristol, U.K.
8. **Meskhidze, H.** "A Classical Spacetime Model with Torsion," Philosophy of Science Association, Symposium: "Interpreting Theories of Modified Gravity," 2022, Pittsburgh.
7. **Meskhidze, H.** "Energy Conditions in Theories of Modified Gravity," Philosophy of Science Association, 2021, Baltimore.
6. **Meskhidze, H.** "Energy Conditions in Theories of Modified Gravity," Foundations of Physics, 2021, Paris, France.
5. **Meskhidze, H.** "Cosmology in Silico," British Society for the Philosophy of Science Conference, 2019, Durham, U.K.
4. **Meskhidze, H.** "The explanatory and methodological roles of new simulation methods in cosmology," Philosophy of Logic, Mathematics, and Physics Graduate Conference, 2019, London, Ontario.
3. **Meskhidze, H.** "Can Machine Learning Provide Understanding?: How Cosmologists Use Machine Learning to Explain Observations of the Universe," Philosophy of Science Association Conference, 2018, Seattle.
2. **Meskhidze, H.** "Simulationist's Regress in Laboratory Astrophysics," Super-PAC: Early Career Workshop in Philosophy of Astrophysics and Cosmology, 2017, Pittsburgh.

Poster

1. Dang, H., Elder, J., **Meskhidze, H.**, Muhr, P., Pronskikh, V., and Thresher, A. "Philosophy of Science in the Field: How Philosophers are Involved in Studying Black Holes" Philosophy of Science Association Conference, 2024, New Orleans.

TEACHING EXPERIENCE

Instructor of Record, *University of California Irvine*

LPS 30: Introduction to Symbolic Logic Spring 2023, in person; Spring 2021, online
Designed course syllabus, prepared online Canvas course site, prepared synchronous and asynchronous lectures, moderated course Discord, held office hours, designed weekly exercises on Carnap, supervised and held weekly meetings with two TAs. 130 students in person (2023) and 80 students online (2021).

Won Outstanding Teaching Award for Spring 2023, given to top 15% of all courses taught in the School of Social Sciences (UCI), judged by teaching evaluations.

LPS 60: Making Modern Science Summer Session II 2021, online.
Designed course syllabus, prepared online Canvas course site, prepared synchronous and asynchronous lecture content and lesson plans, moderated course Discord, held office hours, designed weekly reading guides, supervised one TA and one grader. 80 students.

Teaching Assistant, *Harvard University*

Phil 149s: Foundations of Spacetime Theories (P. Koellner) Spring 2024
Led discussion sections, held office hours, and graded problem sets for 25 students.

Teaching Assistant, *University of California Irvine*

LPS 31: Introduction to Inductive Logic (B. Genta) Winter 2023
Led discussion sections, held office hours, and graded assignments for 60 students.

Theories of Personality (J. Lewis) Spring 2022
Graded assignments, projects, and exams for 85 students, held weekly office hours.

Clinical Psychology (J. Lewis) Winter 2020, 2022
Graded assignments, projects, and exams for 90 students, held weekly office hours.

Classics: The Gods (Z. Giannopoulou) Fall 2021
Led discussion sections, graded assignments, and helped develop exams for 60 students.

Soc Sci H1E: The Good Life (C. O'Connor & J.O. Weatherall) Spring 2019
Led discussion sections and graded assignments/exams for 60 students.

LPS 91: Philosophy of Sex (C. O'Connor) Winter 2018, 2019
Led discussion sections, created rubrics for assignments, graded assignments and papers for 50-80 students.

LPS 30: Introduction to Symbolic Logic (C. Mitsch) Spring 2018
Led discussion sections, held office hours, and graded exams for 40 students.

Teaching Assistant, *Western University*

WST 1020: Introduction to Women's Studies (K. Verwaayen) 2016-2017
Led discussion sections and graded papers and exams for 40 students.

TEACHING AND LEARNING WORKSHOP DESIGN AND TRAINING

Workshops I designed and facilitated

How to bring trauma-informed practices to your classroom Spring, Fall 2023, online
Invited to design and facilitate an hour-long workshop on trauma-informed pedagogy by the Center for Teaching and Learning at the University of Colorado, Boulder and to the Rocky Mountain Teaching and Learning Collaborative.

Teaching Assistant Training Winter 2023, Fall 2022 in person; Fall 2020, 2021 online
Designed and facilitated three day training on active learning, diversity, grading, and remote learning for 10 Logic and Philosphy of Science and Philosophy graduate students (Fall 2022, 2020), 40 Information and Computer Sciences graduate students (Winter 2023) and 8 Informatics and Statistics graduate students (Fall 2021).

Course Design Workshop Fall 2021, 2022
Co-designed and facilitated flipped-format, 8 hour training on course design for 20 participants. Covered backwards and integrated course design, active learning, and alignment.

Summer Graduate Fellow Training Summer 2022
Co-designed and facilitated three day training on inclusive teaching, developing community, flexible teaching strategies, and student-faculty partnerships for 66 graduate students.

Training I have received

AAPT Teaching and Learning Seminar Summer 2022, Otterbein University
Certificate in Inclusive Hybrid Teaching Summer 2021, UCI
Summer Teaching Apprenticeship Program Summer 2021, UCI
Certificate in Cascading Mentorship Spring 2021, UCI
Certificate in Remote Instruction Summer 2020, UCI
Teaching Assistant Diversity Training Winter 2020, UCI
AAPT Workshop on Graduate Pedagogy Fall 2019, UCI
Certificate in Teaching Excellence Fall 2019, UCI
Course Design Certificate Program Spring 2019, UCI
Teaching Assistance Training Program Fall 2017, UCI
Teaching Assistance Training Program Fall 2016, Western University

SERVICE

At the Black Hole Initiative

Responsible Siting Reading Group, Organizer 2024-
Organizing online reading group meetings every two weeks for the Responsible Siting Focus Group as part of the History, Philosophy, and Culture Working Group of the Next Generation Event Horizon Telescope Collaboration.

Foundations Focus Group, Co-lead 2023-
Co-organizing (with P. Kocherlakota) the hybrid Foundations seminar weekly talks as part of the History, Philosophy, and Culture Working Group of the Next Generation Event Horizon Telescope Collaboration.

Professional Service

Philosophy of Physics Affinity Group, Member 2023-
Part of Philosophy of Science Diversity, Equity, and Inclusion Caucus.

Feminist Philosophy of Physics Workshop, Co-organizer 2024
Workshop on feminist-informed philosophy of physics, University of Michigan, Ann Arbor.

Interpreting Theories of Modified Gravity, Symposium Organizer 2022
Philosophy of Science Association meeting, Pittsburgh.

Values, Fairness, and Machine Learning, Organizing committee 2022
Conference on values in science, especially applied to machine learning, UCI.

Philosophical Aspects of Simulations in Cosmology, Co-organizer 2021
Workshop bringing together physicists and philosophers to discuss code comparisons and opacity of simulations in astrophysics and cosmology, online.

Wonder Philosophy Workshop, Co-organizer and presenter 2020
Workshop developed and facilitated by graduate students to assist undergraduates from underrepresented backgrounds in their applications to philosophy PhD programs, online.

Women in Academia, Organizing Committee 2019
Conference about women in academia also organized to facilitate networking and mentoring between current graduate students and alumni, UCI.

Philosophy of Logic, Math, and Physics Conference, Organizing Committee 2017
Graduate student conference at Western University.

Ad hoc reviewer

Philosophy of Science, *Philosophy of Physics*, *British Journal for the Philosophy of Science*, *European Journal for Philosophy of Science*, *Studies in History and Philosophy of Science*, *American Association of Philosophy Teachers Studies in Pedagogy*, *Minds and Machines*, *Social Epistemology*

At UC Irvine

Writing Workshop Facilitator 2021-2023
Writing and peer-mentoring group of 6 graduate students. Meets twice a week for two hours to write together and provide writing feedback.

Graduate Student Representative 2020-2021
Representing the graduate community at monthly faculty meetings, facilitating visit weekend for prospective students. Served on departmental climate committee.

Workshop on Graduate Pedagogy, Local organizer 2019
Workshop facilitated by the American Association of Philosophy Teachers to develop graduate students' disciplinary teaching and learning skills, UCI.

Reading Group Organizer

Reconsidering Reparations	Spring 2022
Interdisciplinary Approaches to Resistance	Fall 2021-Winter 2022
Saltwater Slavery: A Middle Passage from Africa to American Diaspora	Winter 2021
The 1619 Project at UCI	Fall 2020
Diverse Perspectives in Philosophy	Summer 2020
Pedagogy Reading Group	Winter 2020
Philosophy of Physics	2018-2019

OUTREACH

Beyond the Ivory Tower 2024
Participant (competitively chosen) in the public writing workshop facilitated by James Ryerson, editor for New York Times.

Inclusive Educators Podcast: Trauma-Informed Pedagogy 2023
Podcast episode on the Inclusive Educators Podcast of University of Colorado, Boulder Center for Teaching & Learning

Th!nk: Philosophy for early adolescents 5 semesters in 2018-2021
Facilitated philosophical discussions with groups of 4-8 5th graders once a week for 4 weeks in Orange County Schools.

AWARDS

Outstanding Teaching Award 2023
School of Social Sciences, University of California Irvine

Contributions to Inclusion and Diversity 2022
Department of Logic and Philosophy of Science

Robert K. Clifton Memorial Prize 2019
Department of Philosophy, Western University

GRANTS AND SCHOLARSHIPS

Cascading Mentorship Fellow ($6,000/year) 2021, 2022
University of California, Irvine

Division of Teaching Excellence and Innovation (DTEI)
Educational Development Fellow ($2,000) 2022
Summer Graduate Fellow Coordinator ($7,500) 2022
Conference Travel Grant for AAPT meeting ($500) 2022
Graduate Student Fellow ($5,000/year) 2020, 2021
Pedagogical Fellowship ($2,000) 2019

Provost PhD Fellowship ($20,000) 2017
University of California, Irvine

Chair's Entrance Scholarship ($1,000) 2016
Faculty of Arts and Humanities, Western University

Lumen Scholarship for Undergraduate Research ($15,000) 2014-2016
Faculty of Arts and Sciences, Elon University

Honor's Fellows Scholarship ($54,000) 2012-2016
Elon University

Presidential Scholarship ($24,000) 2012-2016
Faculty of Arts and Sciences, Elon University

REFERENCES

James Weatherall, Professor
University of California, Irvine
Logic and Philosophy of Science
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JB Manchak, Professor
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Jeffrey Barrett, Chancellor's Professor
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James Bullock, Professor and Dean of School of Physical Sciences
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Teaching reference
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