

Curriculum Vitae, Apr 22th 2024

1. Full name

- Laherto, Antti Mikko Petteri
- ORCID iD: <https://orcid.org/0000-0001-5062-7571>

2. Date and place of birth, nationality

- 22.4.1977, Helsinki, Finland; nationality: Finland

3. Education and degrees awarded

- Title of Docent; field: Science Education; University of Helsinki; conferred Dec 14th, 2018
- Doctor of Philosophy; University of Helsinki, Faculty of Science; major: Physics (Physics education); graduation date Sept 25th 2012
- Master of Science (Physics teacher); University of Helsinki, Faculty of Science; major: Physics, minors: Education, Mathematics and Computer science; 3.10.2006
- Finnish matriculation examination; Tervakoski upper secondary school; 1996

4. Other education and training, qualifications and skills

- Status of Principal Investigator, Faculty of Educational Sciences, UH, June 2019->
- Staff training course "Project Management for Researchers", Nov 2019.

5. Linguistic skills

- mother tongue: Finnish; other languages: English (Proficient user C1); Swedish (Independent user B1); German (Basic user A1)

6. Current position and contact information

- Senior university lecturer (Associate professor), University of Helsinki, Faculty of Educational Sciences / Dept. of Education, 12/2023->
- Contact information: P.O. Box 9 (Siltavuorenpenger 5A), FI-00014 UNIVERSITY OF HELSINKI; email: antti.laherto@helsinki.fi ; tel.: +358 50 448 2233
- Double affiliations/memberships in HELSUS (Helsinki Institute of Sustainability Science), 2019-; and SIRENE (Interdisciplinary Network of Environmental and Sustainability Education Research), 2019-

7. Relevant previous work experience

- University lecturer in Didactics of Physics, University of Helsinki, Faculty of Educational Sciences / Dept. of Education, 8/2018–11/2023; Post-doctoral researcher; UH, Dept. of Physics, Physics teacher education; 6-8/2013, 1/2014–8/2017; Visiting researcher; Univ. of Bologna, Dept. of Physics and Astronomy, Physics Didactics; 1-6/2016; University lecturer (Deputy); Didactics of Physics, UH, Dept. of Teacher Education; 9/2013 –12/2013; Visiting post-doctoral researcher; Leibniz Institute for Science and Mathematics Education (IPN), Univ. of Kiel, Germany; 9/2012–12/2012; Coordinator of the F2k (Resource Centre for Physics Education), Doctoral student; UH, Dept. of Physics; 1/2007–8/2012; Inspirer, Designer of educational activities (science theatre shows, laboratory programmes, children's camps, etc.); Heureka Science Centre, Vantaa, Finland; 2003-2004, 2006; Temporary teacher in science and maths (part-time); several secondary schools in the Helsinki region; 1999-2003

8. Research funding, leadership and supervision

Research funding

I've been involved in the following five EU-funded projects. In the first four of them I am/was the principal investigator and played a key role in receiving the grant for Univ. of Helsinki.

- TEFF: Teacher Education for a Future in Flux (<https://www.teff-academy.eu/>). EU Erasmus+ Teacher Academies, 6/2023 – 5/2026. Principal Investigator.
- FEDORA: Future-oriented Science EDucation to enhance Responsibility and engagement in the society of Acceleration and uncertainty (<https://www.fedora-project.eu/>). EU Horizon 2020, 9/2020 - 8/2023. Principal Investigator.
- I SEE: Inclusive STEM Education to Enhance the capacity to aspire and imagine future careers (<https://iseeproject.eu>). EU Erasmus+, 9/2016 - 8/2019. Principal Investigator. EU
- IRRESISTIBLE: Engaging the Young with Responsible Research and Innovation (RRI). EU FP7, 11/2013–10/2016), Principal Investigator.
- MaterialsScience: University-school partnerships for the design and implementation of research-based ICT-enhanced modules on material properties. EU FP6, 1/2007-12/2009.
- HOPE: Horizons in Physics Education (<http://hopenetwork.eu>). EU Life Long Learning Programme, 10/2013 – 9/2016.
- FIT4RRI: Fostering Improved Training Tools for RRI. H2020, 2017-2020.

Besides those EU projects, I have received the following personal research grants:

- The Finnish Cultural Foundation's research grant for postdoctoral study 'Rethinking Authenticity of Science Education', 27.2.2017. €28 000.
- The Finnish Cultural Foundation's research grant for postdoctoral stay at the Univ. of Bologna, Italy, for research on authenticity in science and technology education from January-June, 2016. €16 500.
- ESERA (European Science Education Research Association) Travel Grant, 2013.
- Visiting researcher scholarship, Leibniz Institute for Science and Mathematics Education (IPN), Univ. of Kiel, Germany; 1.9.2012 – 31.12.2012
- Chancellor's Travel Grant, UH, 2008 and 2012
- Scholarship for doctoral studies, Hämäläisten ylioppilassäätiö, 2007

I have also worked as a research group member in the following projects:

- INNOPLAY - Craft, design and technology (STEAM) in early childhood education (2018-2021), DeCoSTE - Designing and Enacting Coherent Science Teacher Education (2020-2023), Erasmus+, BILAD - Educational Research at Informal Learning in the Interplay between Authenticity and Digitality (2021-)

Leadership in research work

- Through obtaining several EU projects (see above), I have gained experience in leadership and management of scientific research. I have worked as a PI and led a research group of 2-6 persons continuously since 2013. As the principal investigator, leader of work packages and/or member of the steering committee I have been involved in all administrative stages of the project: grant writing, budgeting, personnel administration, accounting and reporting.

Supervision of doctoral students

- supervisor for 9 doctoral students at the Univ. of Helsinki: Iina Hyyppä, 2024->, primary supervisor; Henri Hämäläinen, 2023->, primary supervisor; Tapio Rasa, 11/2019->8/2023 (public defence on Aug 18th 2023); Miikka de Vocht, 3/2014-7/2017; primary supervisor; UH, Faculty of Science; Aku Pajula, 2024->, secondary supervisor, UH, Faculty of Science; Tomi Kiviluoma, 2022->, secondary supervisor, UH, Faculty of Educational Sciences; Peitsa Veteli, 2022->, secondary supervisor, UH, Faculty of Science; William Smolander,

2020->, secondary supervisor, UH, Faculty of Science; Chenyu Wang, 2021-2022 (forfeited her study right in 2022), secondary supervisor, UH, Faculty of Educational Sciences

Examination of doctoral theses:

- Sami Löfgren, 10/2023, internal examiner (member of the grading committee); UH, Faculty of Educational Sciences; Dong Yang, 1/2021, internal examiner (member of the grading committee); UH, Faculty of Educational Sciences; Kirsi Ikonen, 8/2020, pre-examiner; University of Eastern Finland, Faculty of Science and Forestry; Yan Wang, 12/2019, internal examiner (member of the grading committee); UH, Faculty of Educational Sciences

Member of Thesis Committees:

- 5 thesis committee memberships, 2022-

I've also been an official or unofficial mentor to three doctoral students and hosted research stays for several international doctoral students at the UH. In addition, I was invited as a staff member and invited keynote presenter in the ESERA summer school in 2016 in Czech Republic, and a mentor of a student group in 2022 in Utrecht, The Netherlands. The ESERA summer school is a high profile bi-annual event where ca. 30 selected European PhD students in science education are coached for a week by esteemed scholars.

9. Merits in supervision and pedagogical competence

Pedagogical training and competence

- University Pedagogy 3.1 "Academic supervision and supervision training", 5 ECTS, Mar 2024
- Advanced special studies in pedagogy (40 ECTS), UH, 2010
- University pedagogy I (10 ECTS), UH, 2011
- Teacher's pedagogical studies (qualification for a subject in secondary school) in Physics and Mathematics (60 ECTS), UH, 2000-2002

Involvement in curriculum planning and the implementation of courses

At the Dept. of Education, UH, I have worked as University lecturer (Didactics of Physics and Computer Science / Didactics of Physics) in 2013 and 2017-2023, and as Senior university lecturer from 2024 onwards. I have taught the following teacher education courses:

- Physics Didactics for pre-service secondary school (subject) teachers (5 different courses)
- Physics Didactics for pre-service primary school (class) teachers
- Subject Teacher Education Programme in English (STEP)
- Supervision of pre-service primary teachers' teaching practice
- Didactics of Health Education
- Education for Sustainable Development – Theory and Practice

At the Dept. of Physics I have been involved in curriculum planning and teaching of the following courses for pre-service science teachers:

- Scientific literacy and learning environments (5 ECTS)
- Orientation to physics education (2 ECTS)
- Experimental modern physics for in-service teachers and upper secondary school students in the F2k-laboratory

At the Faculty of Educational Sciences, UH, I have been active in planning of curriculum and its implementation as a member of the committee of subject teacher education (deputy member

since Sept 2017 and full member since Sept 2018) and a Member of the extended teaching committee (Opetustoimikunta) of the Department of Education, 2018-2020. In particular, I have been active in developing sustainability education in the Faculty: co-designing guidance documents for curricular processes of the whole Faculty, co-designing objectives and contents for the Sustainability Education course (Kestävyyskasvatus 2 op). At the Faculty of Science, since April 2019 I've served as a member and a representative of the Faculty of Education in the Steering Group of the Bachelor's programme of Mathematics, Physics and Chemistry

Development of teaching methods

- I have been active in developing dialogic and technology-assisted teaching and assessment methods, and I have also reported on such development processes (see list of publications, e.g. Laherto & Laherto, 2018; Laherto, Pekkala & Laherto, 2022)
- In EU projects FEDORA, I SEE, IRRESISTIBLE and MaterialsScience I have developed teaching methods and materials for secondary school students and teachers, pre-service teachers, teacher educators and educational policy makers (see publications)
- For the F2k laboratory (nowadays "Fotoni") I developed teaching methods on modern physics concepts in 2010-2014.

Supervision of theses

- In addition to the PhD's, I have supervised 6 Master's theses and 4 Bachelor's theses in 2016-2024 in the Faculty of Educational Science and in the Faculty of Science, UH. I have also examined (assessed) 11 Master's theses.
- I've also supervised ca. 50 seminar theses students have made in the course "Teacher as a researcher" during 2017-2023.

10. Other academic merits

Memberships and positions of trust in scientific and scholarly societies

- ESERA Executive Board member, 8/2023->, responsible for Early Career Researchers
- ESERA Strand Chair, Strand "Science Education for Sustainability, Agency and Futures Literacy", 2023 ->
- ESERA Strand Chair, Strand "Scientific literacy and Socio-scientific issues", 2018-2022.
- Secretary and Member of the board of the Finnish Mathematics and Science Education Research Association (FMSERA), 2011-2017
- Memberships: Member of HELSUS (Helsinki Institute of Sustainability Science), 2019-; Member of SIRENE (Interdisciplinary Network of Environmental and Sustainability Education Research), 2019-; Member of SusEdu (Research group on Sustainability Education at the Faculty of Education, University of Helsinki), 2018-; Member of the Docents' Association of the University of Helsinki, 2019->

Membership in national or international expert groups, evaluation or steering committees, as well as other expert duties

- Member of the Physics Committee of the Matriculation Examination Board of Finland (Ylioppilastutkintolautakunta) (2018-2021)
- External advisor in EU-project "EVIDENCE -- Promoting students' key competences for making evidence-based decisions on controversial socio-scientific issues (2020-2023)
- Expert member in the MIDA FINNSOM Health and Education programme: Teacher curriculum development for Somali National University (SNU), Somalia, 2020-2021
- Member of the Committee of Physics and Chemistry in the Finnish Mathematics and Science Teachers' Association (MAOL), 2011-2013

- Member of the scholarship committee of the Häme Students Foundation, 2015-
- Science Centre Heureka's committee for science centre pedagogy (2004-2005)

Positions as editor-in-chief, editor, or member of editorial boards of scientific and scholarly journals and publication series

- International Journal of Science Education (JUFO 3), Member of Editorial Board, 2023->
- Frontiers in Education, Guest associate editor, Research Topic "Future-oriented Science Education for Agency and Sustainable Development", 2021-2023
- Proceedings of the ESERA Conference, Editor, Strand 8: Scientific literacy and socio-scientific issues, 2019-2021
- Nordic Studies in Science Education (NorDiNa), national editor, 2018-
- otther: Journal of Nano Education, member of editorial board 2012-2016; LUMAT, editor, 2012-2016; LUMA Sanomat, member of editorial board 2010-2016; Special issue of the FMSERA Journal (Proceedings of the FMSERA annual symposium 2019), editor; Proceedings of the FMSERA annual symposium 2017, member of the editorial board

Referee for scientific and scholarly journals

- reviews for 12 academic journals and 11 conferences

Administrative responsibilities at higher education institutions or at research organisations, responsibilities in the higher education community

- Member of the Faculty Council, Faculty of Educational Sciences, UH, 2022->; Member of Steering Group of the Bachelor's programme of Mathematics, Physics and Chemistry Teachers, Faculty of Science, UH, 2019->; Member of the committee of subject teacher education ("AO-jaos"), Faculty of Educational Sciences, 2017-> (deputy member since Sept 2017 and full member since Sept 2018); Member and vice chair of the Docent Committee, Faculty of Educational Sciences, UH, March 2019 – Dec 2021; Member of the Steering Committee of LUMA Science Finland research group, 2020-2021; Member of the extended teaching committee (Opetustoimikunta) of the Department of Education, UH, 2018-2020; Member of several evaluation committees for recruitment of staff members, 2022-; Member of the Committee of Lifelong Learning, University of Helsinki, 2010-2011; Member of the Department Council, Department of Physics, University of Helsinki, 2015-2017; Interviewer of student applicants, assessment of their suitability in teacher's studies and profession, University of Helsinki, 2014-2024

Invited lectures

- 13 invited lectures in conferences and seminars

Other academic merits

I have contributed in organising the following conferences in Helsinki, Finland:

- ESERA 2015 Conference, Helsinki, 31.8.-4.9.2015 (member of the organising committee) – 1400 participants
- HOPE Annual Forum, Helsinki, 27.8.-30.8.2014 (chair of the organising committee) – 100 participants
- FMSERA Annual Conference, 24.-25.10.2019 (member of the organising committee) – 70 participants
- Sustainability Education Research Day 23.10.2020 (member of the organizing committee) – 50 participants

- Symposiums of Subject Didactics (Ainedidaktiikan symposium), Helsinki, 12.2.2021 and 9.2.2024 (member of the organising committee; chair of a theme group)
- Sustainability Education Research Day 4.3.2022: Sustainability Education Research Beyond Boundaries (member of the organizing committee) – 50 participants

In ESERA 2019 Conference and in ESERA 2021 Conference, I served as a member of the international scientific committee and Strand Chair for Strand 8 “Scientific literacy and Socio-scientific issues”. In ESERA 2023 Conference I served as Strand Chair for a new Strand, “Science Education for Sustainability, Agency and Futures Literacy”.

I’ve hosted several international visits to the Univ. of Helsinki.

11. Scientific and societal impact of research

Scientific articles

- total number of 52 peer-reviewed scientific publications (28 journal articles, 3 book chapters and 21 papers in conference proceedings)
- 3 edited books / conference proceedings; 6 non-refereed scientific articles
- Complete lists of publications: <https://researchportal.helsinki.fi/en/persons/antti-laherto>

Merits related to the application of research results, science communication and expert assignments in the media

- 12 articles in trade journals (for teachers and educationists); 10 development or research reports; 9 professional manuals or guides
- Developed and published materials for teachers, teacher educators and educational policy-makers in EU projects
- Organised and presented in several events distributing the results of EU projects to stakeholders (teachers, teacher educators and educational policy makers)

12. Positions of trust in society and other societal merits

- Student Union of the UH: Member of the Representative Council (2002-2003), Chairman of the Board of Oy Vanha Ylioppilastalo Ab (2004) + many other duties (2002-2005)
- Hämäläis-Osakunta (student nation of the UH): curator (chairman of the board (2005-2007) + many other duties (1999-2006)
- Tavastia ry (the Alumni Association of Hämäläis-Osakunta): chairman (2009-2012), board member (2007-2008)
- The Häme Students Foundation: member of the board (2005-2007), member of the scholarship committee (2015-) + many other duties (2001-2007)