

# CURRICULUM VITAE: PROFESSOR OF SCIENCE EDUCATION, DR MAIJA AKSELA, UNIVERSITY OF HELSINKI, FINLAND; updated on 8th of Sept, 2023

## 1. MOTTO

Together we are more!

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## 2. RESEARCH

-Research interests:

- science education, chemistry education (e.g. nature of science, science learning, education for sustainable development, ICT learning, inquiry-based science education, in-formal and non-formal science learning, integrated science education, design-based research as a tool for making new solutions and innovations)
  - teacher education and teachers' professional development in math and science, especially in chemistry
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-Director of two research groups: LUMA Science Helsinki and SECO; 16 of my supervised doctoral students have finished Ph.D. thesis since year 2005.

-Director of national LUMAT science research forum (chair of the advisory board)

-Supervisor for the doctoral programme, Doctoral Programme in Chemistry and Molecular Sciences and for the doctoral programme, Doctoral Programme in School, Education, Society, and Culture

- I am supervising/supervised altogether about 80 theses at bachelor and M.Sc. levels in science education (mainly in chemistry education; few of them in math or biology)

- I have supervised altogether over 160 M.Sc. theses since year 2001.

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-Publications: about 400 publications (in details:

[https://tuhat.helsinki.fi/portal/en/persons/maiija-aksela\(226699b4-458f-4e50-8ccc-5106726860df\).html](https://tuhat.helsinki.fi/portal/en/persons/maiija-aksela(226699b4-458f-4e50-8ccc-5106726860df).html))

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-a founder of the LUMAT journal and its chief of editor for international journal, LUMAT (International Journal of Math, Science and Technology Education) and a chair of its international advisory board (2013-2022); honor chief of editor (2023-)

-a member of editorial advisory boards, e.g. NorDina, ARISE, European Journal of Science and mathematics education, Canadian Journal of Science, Mathematics and Technology Education

-participating on international and national conferences in field annually (e.g. ECRICE or ESERA); invited speaker e.g. in four conferences (fall 2018); for example invited lectures 12 in fall 2022.

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## 3. CURRENT POSITIONS AND TASKS

I have worked since 1997 at the University of Helsinki. Since year 2001 I have worked in Faculty of Science. During the years 1997 - 2001 I worked at the Faculty of Science at University of Helsinki

About 20 years I have worked for both the LUMA Centre (50 %) and the Unit of Chemistry Teacher Education, Department of Chemistry at University of Helsinki (50%).

I started as a Professor of Science education on 1st of May, 2020 (invited new position at University of Helsinki).

1) National LUMA Centre Finland at University of Helsinki:

-Jan 2014- Director of national LUMA Centre Finland (11 universities and 13 centres; LUMA promotes math, science and

technology education, <http://www.luma.fi>). Projects or tasks, e.g.:

- 1) National LUMA2020 programme for promoting math, science and technology education funded by Ministry of Education, Finland (2019-2020; 3,5 million euros)
- 2) LUMA Finland programme for promoting math, science and technology education funded by Ministry of Education, Finland (2014-2019; 37 projects; 5 million euros)
- 2) National LUMATIKKA in-service programme for math education funded by National Board of Education (2018-2020; about 2 million euros)
- 3) Director of international and national StarT LUMA -project and a chair of International Awards jury (<http://www.start.luma.fi>)
- 4) The chair of LUMA teacher education forum in Finland
- 5) International projects: e.g. LINKS, STEM Design and STEM
- 6) Chief of editor for international peer-reviewed journal, LUMAT (10 years; founder)
- 7) Director of national LUMAT science research forum and a chair of national advisory board

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-Jan 2017- Dec 2020 Director of the Science Education Centre at University of Helsinki (one centre of the 13 LUMA Centres; <https://www.helsinki.fi/en/science-education>): e.g.

Director of ChemistryLab Gadolin (one of 15th LUMA labs in Finland), Science Education Centre at University of Helsinki, Department of Chemistry, University of Helsinki since year 2008 (see: <https://www.luma.fi/en/news/2018/09/24/learn-everyday-chemistry-in-novel-ways-in-chemistrylab-gadolin/>)

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2) Teacher education and its' research:

-1st of May, 2020- Professor of Science Education, Department of Chemistry, Faculty of Science, University of Helsinki

-Dec 2008- April 2020, Professor, Research Director, the director of The Unit of Chemistry Teacher Education, University of Helsinki, Department of Chemistry, University of Helsinki (responsible of its' instruction (built 10 courses) and research) See in details: <https://blogs.helsinki.fi/kem-ope/en/>

-Sep 2017-2020 Vice Director, Math, physics and chemistry teacher education B.Sc. program, University of Helsinki, Faculty of Science, University of Helsinki and a member of a board

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3) Director of the following online courses (MOOCs) or forums:

-Teachers' Climate Change Forum (MOOC; in-service training, 2019-)  
- International Teachers' climate change forum (year 2016)  
<https://www.luma.fi/en/event/international-teachers-climate-change-forum/>

-Sustainable Energy (MOOC; youth; international); 2015-16:  
<https://www.luma.fi/en/news/2015/10/28/millennium-youth-course-sustainable-energy/>  
-Sustainable Energy in Education (MOOC; in-service training; international) 2015-16:  
<https://www.luma.fi/en/news/2015/12/09/sustainable-energy-in-education-mooc-starts-on-january/>

-Introduction to project-based learning through StarT (MOOC); 2018-19:  
<https://www.luma.fi/en/news/2018/09/28/our-new-international-online-courses-on-project-based-learning-are-open/>  
-Project-based learning and the theory behind it – create your own Project (MOOC) 2018-19:  
<https://www.luma.fi/en/news/2018/09/28/our-new-international-online-courses-on-project-based-learning-are-open/>  
-Chemistry as science and in society, 2020-  
-Math and Science in society, 2020-  
-Science Education, 2018-  
-Geosciences and sustainable future, 2023-

In Finnish:

-Tiede -ja teknologiakasvatuksen ohjauskurssi (opettajankoulutus) 2017-):  
<https://www.luma.fi/sanomat/2017/09/04/tukea-ja-ohjausta-tiede-ja-teknologiakasvatusaktiviteettien-toteuttamiseen-eri-puolilla-suomea/>

-Arjen ilmiöitä ja monialaisia projekteja LUMA-aineiden opetuksessa (LUMA SUOMI -kehittämisohjelma):  
<https://mooc.helsinki.fi/course/view.php?id=34>

-LUMA-aineiden opetusta lähiyityksessä (LUMA Suomi -kehittämishjelma):  
<https://mooc.helsinki.fi/course/view.php?id=109>

-LUMATIikka täydennyskoulutusohjelma ([www.luma.fi](http://www.luma.fi))  
-LUMAN LUMOA täydennyskoulutusohjelma ([www.luma.fi](http://www.luma.fi))

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#### 4. EDUCATION AND DEGREES

I have studied both sciences (chemistry (major), mathematics, physics and computer science) and education. In addition, competence to be a subject teacher at high school level.

-Nov 2005. Ph.D., Chemistry: Chemistry Education, University of Helsinki, Department of Chemistry

-1995-1999. Education studies, University of Helsinki, Department of Applied Sciences of Education (59 credit units, ov, sivulaudatur in Finnish)

-Jan 1990. Phil. Lic, Organic Chemistry, University of Oulu, Department of Chemistry, Finland (research at SFU, Vancouver, Canada, three grants for it)

-Oct 1986. M.Sc., Chemistry: Chemistry Teacher Education Program, University of Oulu, Department of Chemistry, Finland (\*competence to teach chemistry in high school and in adult education; in addition studied math, physics and computing science)

- Year 2017. Mentoring program for directing skills

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#### 5. PREVIOUS PROFESSIONAL APPOINTMENTS

I have worked in teacher education at University of Helsinki since 1997 and in LUMA activities since 2003. Before it I have worked at Simon Fraser University, Canada (visiting research fellow in chemistry) and about six years at high school level (teaching chemistry, mathematics and physics) in Finland:

- Jan 2010- Dec 2016 Director of the LUMA Centre of University of Helsinki, Faculty of Science

-2004-2016. Director of the National Chemistry Education Centre, Kemm, University of Helsinki, Department of Chemistry

-Jan 2014-Dec 2009. Coordinator, LUMA Centre, University of Helsinki

-Aug 2001-Nov 2008. Senior Lecturer, Chemistry Teacher Education Unit, University of Helsinki, Department of Chemistry

-Aug 1999-Jul 2001. Research Fellow, Centre for Research and Development in Pedagogy of Mathematical Sciences, Department of Teacher Education, University of Helsinki, Finland (Research grant from Neste Oy Foundation)

-Aug 1997-Jul 1999. Lecturer in Chemistry and Physics Didactics, Department of Teacher Education, University of Helsinki, Finland

-Aug 1988-Jul 1991. Visiting Research Fellow, Simon Fraser University, Dept. of Chemistry, B.C., Canada (Grants from Finnish Culture Foundation, Neste Oy Foundation, and Kemira Oy Foundation)

-Since 1997- In-Service Trainer for Chemistry Teachers and Elementary Teachers, University of Helsinki, Finland

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#### 6. SOME CONFIDENTIAL POSTS

Some examples

-2023- a member of advisory board of Science Centre, Arktikum, University of Lapland

-2020-2023. Finnish UNESCO group, Ministry of Education and Culture.

-2010-19. Finland's representative of the ALLEA (ALL European Academies) core group and working group on Science Education.

-2018-19. A member of the group "New senior secondary school", Ministry of Education, Finland

-2018-19. A member of the national curriculum group for senior secondary level, National Board of Education, Finland

-2017-. A member of the board of math, physics and chemistry teacher education program, Faculty of Science, University of Helsinki

-2018-. A member of the development group of subject teacher education at University of Helsinki

-2019-. Member of the delegation, Research Foundation of the University of Helsinki (Helsingin yliopiston Tiedesäätiön tieteellinen valtuuskunta)

-2015-2021. Member of the Board of URSA Astronomical Association. Since 2021 a member of the nomination board.

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Before year 2019, e.g.

-2010-2013. Finland's representative of Thematic working group on math, science and technology, European Commission

-2009-2018. Member of the Board of Directors, Research Foundation of the University of Helsinki (Helsingin yliopiston Tiedesäätiön hallitus)

-2015-2018 . Member of national working group on the quality of math and science teacher education in Finland

-2014-2015. Member of the national curriculum group, National Board of Education, Finland

-2010-2013. The Chair of National LUMA (math, science and technology) Advisory board (Kansallinen LUMA-neuvottelukunta)

-2010-2016. Member of the Studia Generalia Advisory Board (Studia Generalia –toiminnan tieteellinen ohjausryhmä),

-2010-15 Chair of the Steering Group of the Millennium Youth Camp and the operational director of the Camp (<http://www.helsinki.fi/luma/english/millennium-youth-camp> )

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## **7. SOME HONOURS AND ACKNOWLEDGEMENTS**

Altogether 17 honours and awards, for example:

-2023 Nokia Recognition Award, Nokia Foundation (see: <https://www.luma.fi/en/news/2022/11/23/nokia-foundation-grants-professor-maija-aksela-a-recognition-award/#:~:text=Nokia%20Foundation%20granted%20Maija%20Aksela%20a%20recognition%20award,grant%20scholarships%20and%20awards%20totaling%20around%20400%2C000%20euros>)

-2022 In Favor of Chemistry Award, Finnish Chemical Society  
(In Finnish: <https://suomalaisenkemistienseura.fi/kemian-hyvaksi-palkinto-professori-ft-maija-akselalle/>)

-2018 International Award for StarT Project, LUMA Centre Finland (the director of the project):  
<https://www.luma.fi/en/news/2018/10/22/luma-centre-finland-wins-an-international-stem-education-award/>

-2013. Founding member of Teachers' Academy, University of Helsinki (see: [http://www.helsinki.fi/opettajienakatemia/eng/academy\\_members.html](http://www.helsinki.fi/opettajienakatemia/eng/academy_members.html) )

-2012. 1st University in Society Award for Finland's Science Education Centre, LUMA (the Director of the Centre; see: <http://www.helsinki.fi/luma/english/award-impact> )

-2011. A member of Finnish Academy of Technology (TTA)

-2010. J. V. Snellman Prize, University of Helsinki (the director of the LUMA Centre)

-2009. The State Award for Public Information (the director; three webmagazines, Jippo, Luova and Kreativ of the LUMA Centre)

-2005. 1st Scientist of Year. The Finnish Union of Experts in Science.

-1995. Teacher of Year in Mathematics and Science. The Finnish Association of Teachers of Mathematics, Physics, Chemistry and ICT (First time award was given to a chemistry teacher at senior high school in Finland)

see all in details:

<https://tuhat.halvi.helsinki.fi/portal/fi/activities/searchall.html?searchall=Maija%20Aksela>

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