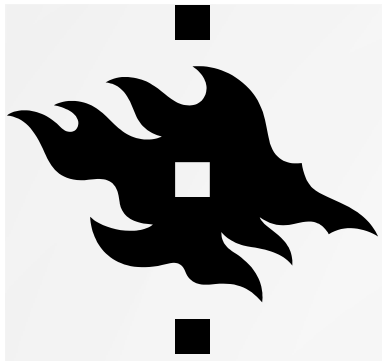




COLLABORATION MODEL

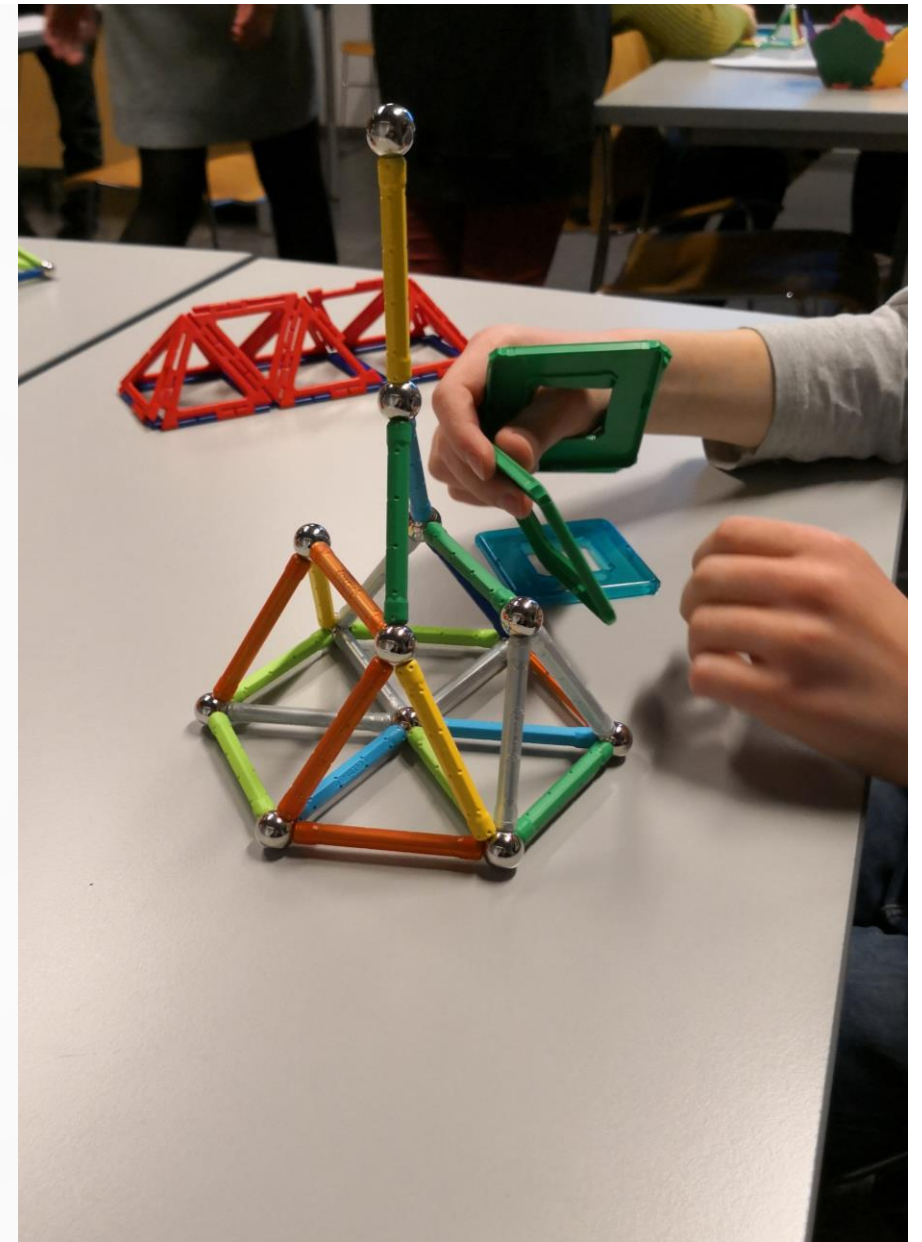
OONA KIVILUOTO
SCIENCE EDUCATION CENTRE
LUMA CENTRE FINLAND
UNIVERSITY OF HELSINKI

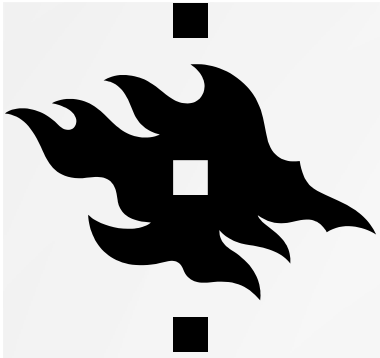




TOPICS OF MY TALK TODAY

1. Collaboration model and different stakeholders
2. Teacher unit and LUMA centre collaboration
3. Science education as part of teacher education
4. Collaboration with schools and families
5. Collaboration with industry
6. New projects
7. Planning collaboration





WE WORK TOGETHER AND SHARE IDEAS

LUMA Centre Finland is an umbrella organization for LUMA Centres in Finnish universities and university campuses.

All LUMA-centres are autonomic.

→ We all have different collaboration



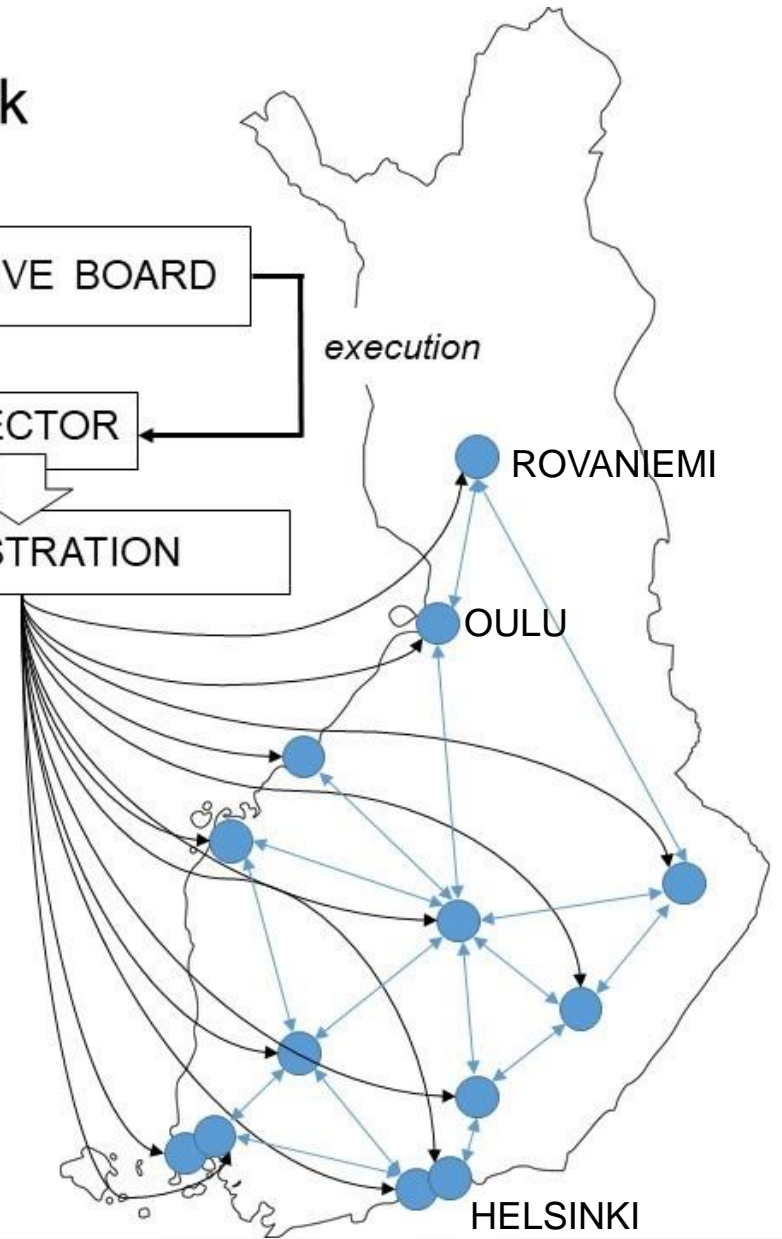
LUMA-network



proposal



execution



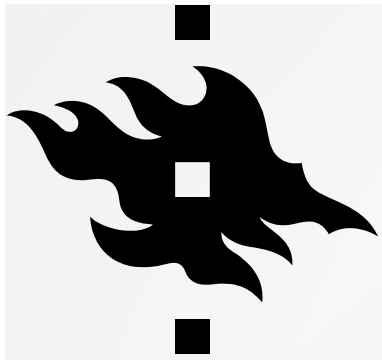


COLLABORATION MODEL OF SCIENCE EDUCATION CENTRE

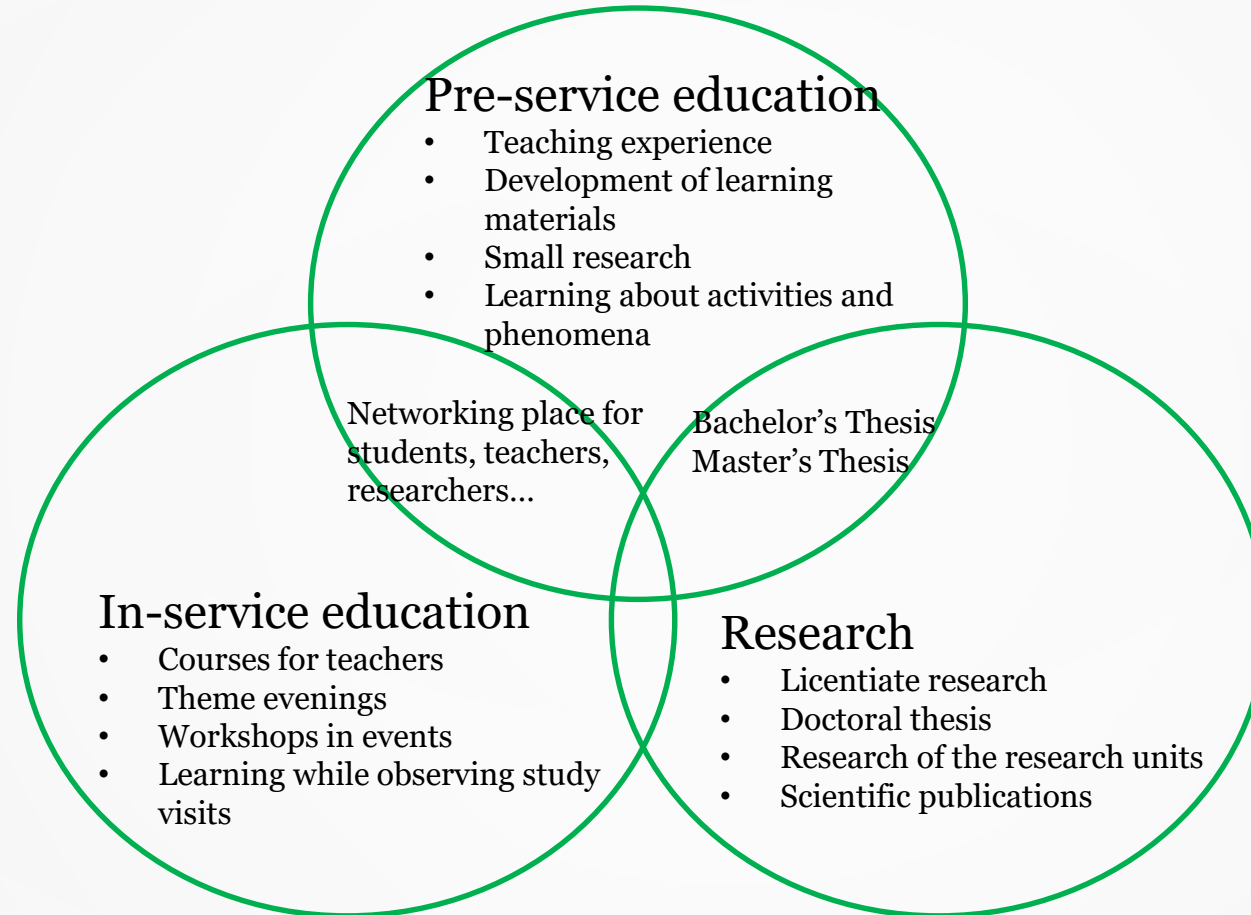
We collaborate with schools, in-service teachers, pre-service teachers, university researchers, families and industry by doing

- Free-of-charge study visits for **schools**
- Science birthday parties with **families**
- Science clubs, summer camps and fairs
- In-service and pre-service **teacher** training
- Projects with **industry**
- Academic research for **University**

As a small country (population about 5,5 million) we trust in collaboration.



LUMA LABS ACTS AS AN ENVIRONMENT FOR EDUCATION AND RESEARCH



New pedagogical innovations and solutions

Research resources like data and ideas





SCIENCE EDUCATION CENTRE AS PART OF TEACHER TRAINING

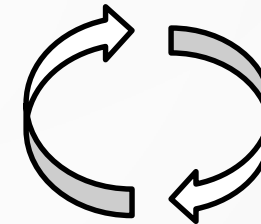
Discipline-specific studies are organized together with faculty, subject teacher unit and Science Education Centre

1st semester

- ✓ Observing and assisting with the instruction
- ✓ Remodeling a work instruction

5th semester

- ✓ Models and visualization
- ✓ A small study and modelling in pairs



2nd semester

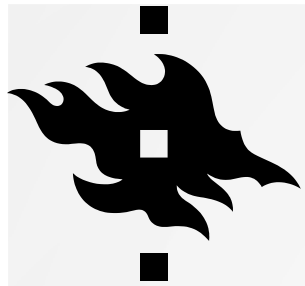
- ✓ Production of materials, instruction in groups
- ✓ A small study

Thesis

- ✓ Bachelor's
- ✓ Master's

3rd semester

- ✓ Instruction in pairs
- ✓ Sustainability, concepts, phenomenons



COLLABORATION WITH SCHOOLS AND FAMILIES

- Free of charge study visits
- Science birthday parties
- Science clubs, summer camps and fairs
- In-service teacher training
- Pre-service teacher training
- Material development & lending
- Academic research



STUDY VISITS

Children and youth learn and grow interest

Pre-service teacher as an instructor

New pedagogical innovations

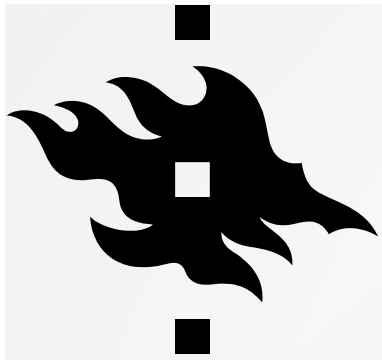
In-service teacher learns new methods

Academic research for the University

Industry gains attraction

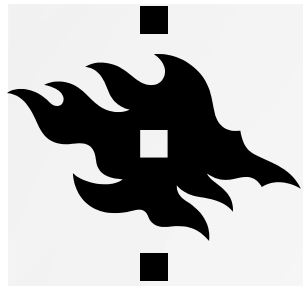
COLLABORATION WITH INDUSTRY

- The forms of collaboration are agreed upon with each company every three years and a collaboration contract is comprised
- In addition to expertise, the company can support the promotion of science education by donating equipment and materials.
- The development of relevant forms of collaboration is promoted collaboratively through work in steering groups of development work groups.



COLLABORATION WITH INDUSTRY

Collaboration model	Description
Participating in steering group	Planning of operations, participating in the evaluation of the operations, participation in thesis as a specialist
Working life gallery	Making videos of different career choices
Collaborative experiments	New ideas that usually take inspiration from real life industry
Collaborative events	Workshops, family events
Visits for company personnel	Getting to know activities
Visits for teachers	In-service and pre-service teachers explore industry
Company-based exhibit space	Companies showcase their innovations and research



NEW COLLABORATION PROJECTS



- LUMA in Society – In-service teacher training program
- Chemistry Now – Online courses for high schoolers
- Teachers' Climate Change Forum 2019 – MOOC & Summer camp
- Zau-clubs together with Zonta International
- Global Challenges – summer course for high schools students
- **LUMA2020** – Government funded project learning and networking program



to tighten our LUMA network, collaboration & share more.

- Goal is to form a nation wide network for development.
- 161 schools got accepted to the program
- Pre-schools, comprehensive schools, high schools, vocational schools, hobby schools, small educational businesses
- Co-design
- Learning community



PLANNING COLLABORATION TOGETHER

1. Work together with your colleague in pairs or in small groups.
2. Write down on paper different stakeholders/schools/organizations/government/media/research centers and other parties you have collaboration with or you would like to have collaboration with.
3. Make a plan – write or draw a collaboration plan
 - In what way does the collaboration benefit both parties?
 - What are the possible challenges?
 - What is the common goal you and your partners have? How we reach the goal together by doing collaboration?