Programme today:

9.00 Welcoming speeches

9. 45 Can entrepreneurship change the world?

10.00 Aalto climate anxiety groups

10.30 Workshops

11.30 Lunch & Climate Challenge

filming

12.30 What makes me happy?

12.45 Arts-based, multidisciplinary teaching

13.45 Co-teaching & ethics panel

14.30 Coffee break & Climate

Challenge filming

15.00 Aalto showcases

16.15 Aalto Online Learning

16.35 Wrap Up exercise

16.45 Closing of day 1

17.00 Campus tours

18.00 Dinner at Fat Lizard



























- Multidisciplinary digital learning in sustainability challenges flexible study paths to the working life.
- A collaboration project of 11 universities, funded by OKM and SITRA.

CLIMATE UNIVERSITY
goes Otaniemi
2-3 March 2020

"Innovations and Creativity in Climate Education" seminar

Aalto-yliopisto
Aalto-universite
Aalto University

Aalto Sustainability Hub

















































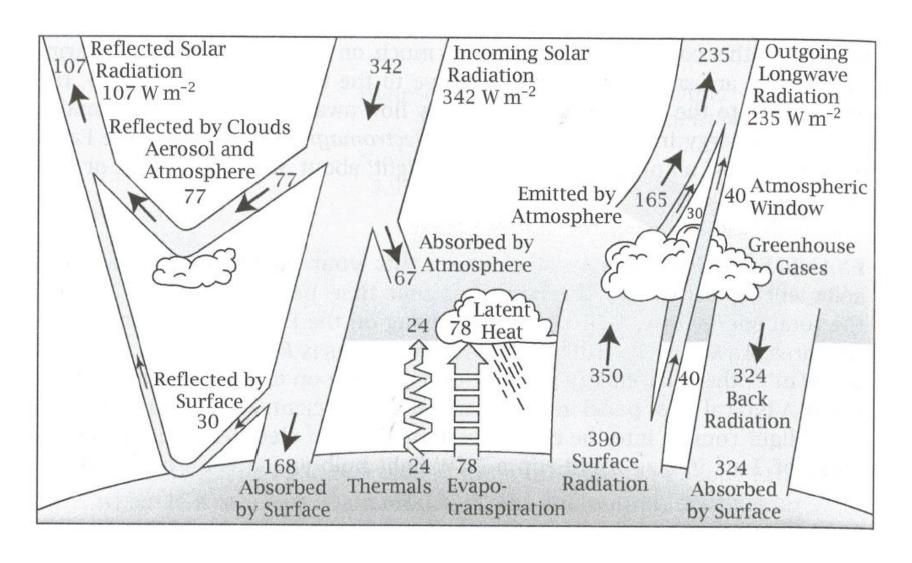




Climate University Seminar

Ari Koskelainen 2.3.2020





From Dill & Bromberg: Molecular Driving Forces, 2nd ed., Garland Science



Welcome to Climate University Laura Riuttanen Postdoctoral Researcher, Project Leader, University of Helsinki



























Teaching and learning for sustainable future

Laura Riuttanen
University of Helsinki
laura.riuttanen@helsinki.fi
@LRiuttanen



























We need a new generation with competences to tackle the challenges of climate change and the sustainability crisis.

















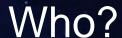












- 11 universities
- Funding from Ministry of Education and Culture 2018-2020 (70%), Finnish Innovation Fund Sitra (10%), universities (20%)





























- Online education on climate change and sustainability
- Workshops for university teachers
- Collaboration with schools and working life

















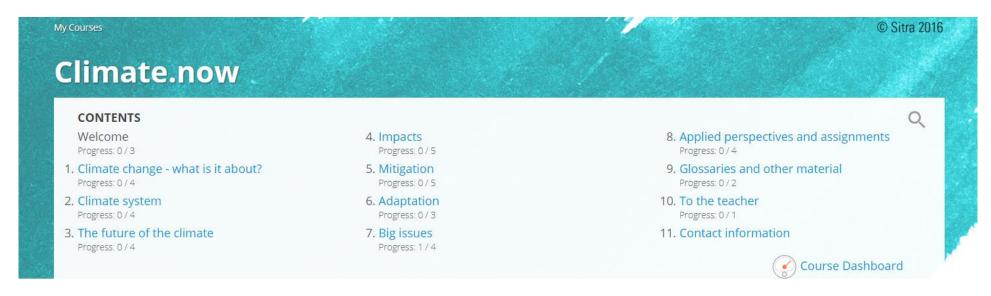








www.climatenow.fi www.ilmastonyt.fi



Welcome





Climate.now courses in universities

- University of Helsinki (course code ATM302)
- University of Eastern Finland (course code 3352703)
- University of Oulu (course code 766383A)
- LUT University (course code BH60A5900 and BH60A2601)
- University of Jyväskylä (course code BENA4036 and CEMY5120)
- Tampere University (course code FYS-3300)
- Aalto University (course code PHYS-E0580)
- Metropolia University of Applied Sciences
 - Many of these courses are also open via open university.



www.leadforsust.fi



Introduction

Welcome to the course Leadership for sustainable change!



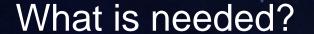


www.circularnow.fi www.kiertotalousnyt.fi



Introduction





Based on study of needs, 2019:

- Interdisciplinarity
- Holistic understanding
- Collaboration
- Data and science
- Science communication
- Values & ethics
- Consumer perspective



























Climate University new courses by 2020

Master level courses



"SystemsChange. now"

"Solutions.now"

"Climate data and statistics"

Bachelor level courses





"Sustainable. now"

Modifica tions / additions





A minor (e.g. 25 ECTS) can be formed out of these 5 ECTS courses



13.1.-6.3.2020
PROJECT COURSE FOR SOLVING
SUSTAINABILITY CHALLENGES

Solutions. now

Open MOOC course for Master level students

Read more & register: blogs.helsinki.fi/climateuniversity











Pilot course collaborators:

- City of Vantaa
- Micropolis
- ST1
- Partioaitta
- CGI
- Useless
- Esri Finland
- Neste













SUSTAINABLE. NOW

Piecing together the challenges of climate change and sustainability

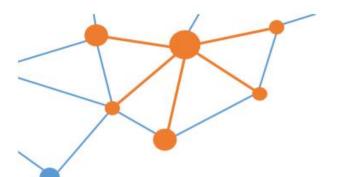
- 5 ECTS
- In Finnish & in English
- BSc level

Opiskelija hahmottaa ilmiölähtöisesti ilmastonmuutoksen ja kestävän kehityksen haasteista tulevat risteävät, osin ristiriitaiset, tavoitteet sekä tilanteen moniulotteisuuden.

Oppimistavoitteet

Kurssin suoritettuaan opiskelija tuntee ilmastonmuutoksen ja kestävän kehityksen eri tavoitteiden välisiä monitieteisiä yhteyksiä ja hahmottaa erilaisia työkaluja ongelmien ratkaisuun.

Opiskelija ymmärtää
positiivisuuden ja
ratkaisukeskeisyyden
merkityksen sekä yksilöillä
olevan globaalin vastuun
että systeemisen
muutostarpeen kautta.













SYSTEMS NOW

- 5 ECTS
- In English
- MSc level
- Prerequisities: Climate.now
 / Sustainable.now, or similar
 knowledge

Language of systems thinking

Systems thinking concepts and terminology in climate change and related global crises.

LEARNING OBJECTIVES

Analytical approach

Analytical approach to complex phenomena such as climate change, recognition of structures and basic level analysis of dynamic.

Confidence, expertise, belonging

Overcome unease of entering a foreign field of science, and instead considers themselves as a junior member of the expert community.





Statistical tools for climate and atmospheric science (5 ects)

- Introduction to open data and basic data handling
- Descriptive methods and basic tests
- Linear models
- Nonlinear models and other regression methods
- Time series analysis
- Multivariate methods
- Validating and reporting the results of statistical analysis









- Online materials open for everyone (CC-BY-SA)
- Impactful & solution oriented
- Science based
- Multidisciplinary collaboration
- Digicampus platform, linked to aoe.fi



























Coming workshops:

Climate science and law Kuopio 26,-27.5.2020

Climate University summary
Tampere Autumn 2020



























blogs.helsinki.fi/climateuniversity

Join us:
email-list
LinkedIn group
Twitter: @uni_climate
#ClimateUniversity

















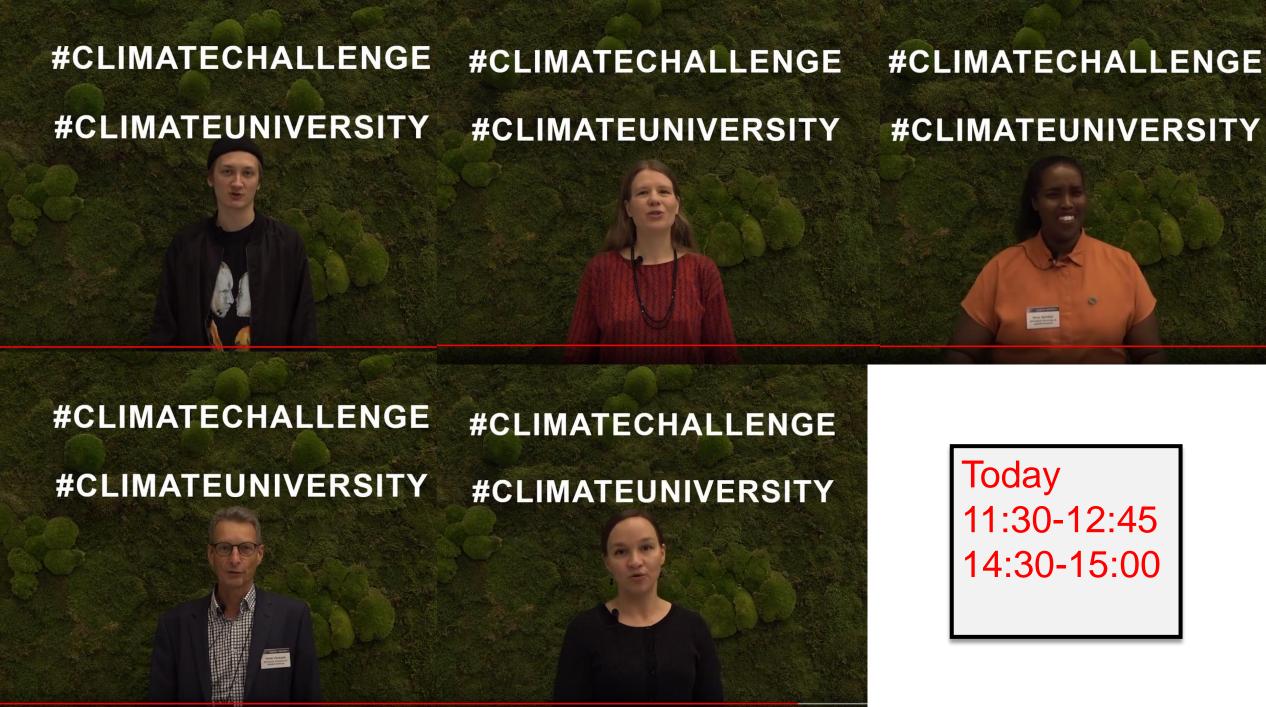












0:25

Climate education at Aalto University Sanna-Liisa Sihto-Nissilä Climate.now course teacher and Climate University project coordinator































Climate Education at Aalto University

PhD Sanna-Liisa Sihto-Nissilä Aalto University, School of Science

Innovations and Creativity in Climate Education seminar 2.3.2020, Dipoli, Otaniemi

Background

My background

- PhD in Atmospheric Physics, University of Helsinki
- MSc (Tech.) in Technical Physics, TKK/Aalto
- Now at Aalto and D-mat Ltd.
- First general Climate Change Course in Aalto in autumn 2014
- Survey: Climate education in Finnish universities, Sitra's publications 11/2015
- Project funded by Sitra: 10/2014–10/2016
 - Climate.now / Ilmasto.nyt material for open use in higher education



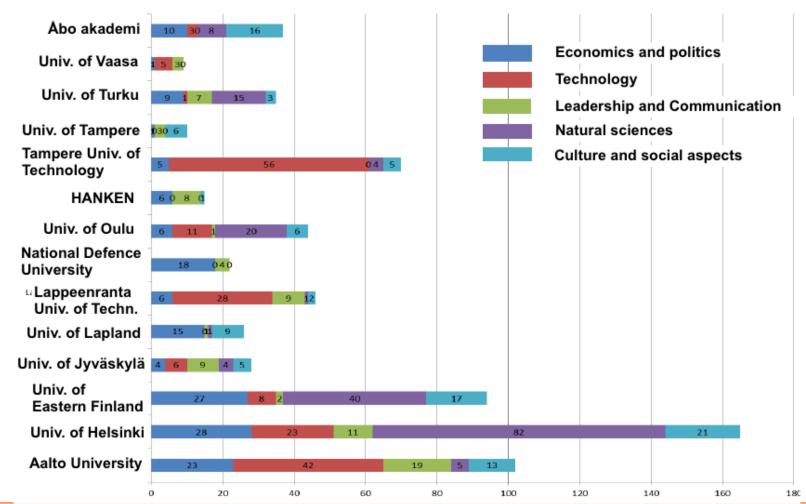


Survey: Climate education in Finnish universities

Climate change related courses in Finnish universities

Sitra's survey Nov 2015

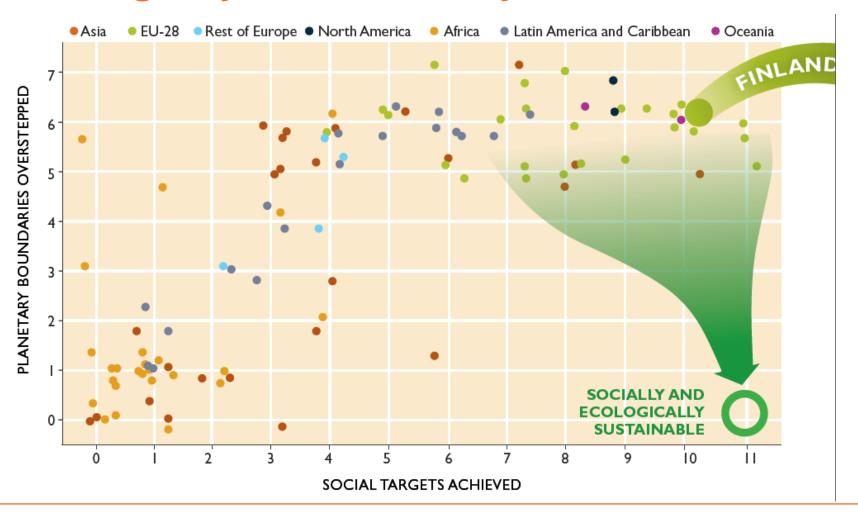
Climate change covered in all universities, but emphasis varies





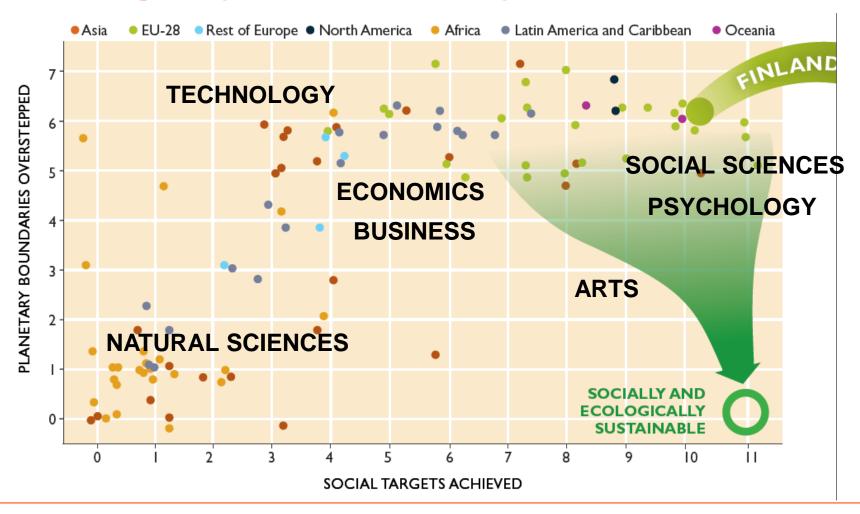


Challenge: Not a single country has achieved a high level of wellbeing in an ecologically sustainable way





Challenge: Not a single country has achieved a high level of wellbeing in an ecologically sustainable way





Why climate education for all university students?

- Empower and support the students in making the transition in our society that is inevitably needed and that is happening
- As climate change is the most pressing problem of our time, it must be reflected and shown in university level education

"The world state, where the climate crisis is real, must be the starting point of education."

Discussion participant in Timeout dialogue in Aalto Jan 2019





Sustainability is in the core of Aalto's new strategy

- Strategy 2021 and beyond: Shaping a sustainable future
- Aim is to integrate sustainability into all education at Aalto

We spark the game changers of tomorrow

Focus of development: Future-led learning









Sustainability in Aalto: Offerings for different learning needs

Baseline understanding



- For all bachelor students
 - Compulsory course(s)
 - Sustainability encounters in course assignments

Sustainability minors



- For those who want to make sustainability a key complementary competence
 - Domain specific S-knowledge
 - What has this discipline to contribute to sustainability?'
 - For both bachelor and master students





- For those who want to become sustainability experts (e.g. Creative Sustainability MA)
 - Systems view on sustainability and unsustainability
 - Challenge based teaching: 'How might we...'

Ability to translate and implement

Ability to relate and engage with Sustainability

Ability to challenge and transform



Aalto University

Climate change course in Aalto

- Climate.Now Basics of climate change and implications on technology and business
- Lectured in 2014, 2015, 2017, 2018, 2020
- Open for all Aalto students
 - 50-100 students each year
 - From all schools (ARTS, BIZ, CHEM, ELEC, ENG, SCI)
- Based on the Climate.now course concept
 - Climate.now MOOC material
 - Reflective learning diary
 - Group work: "your own climate project"

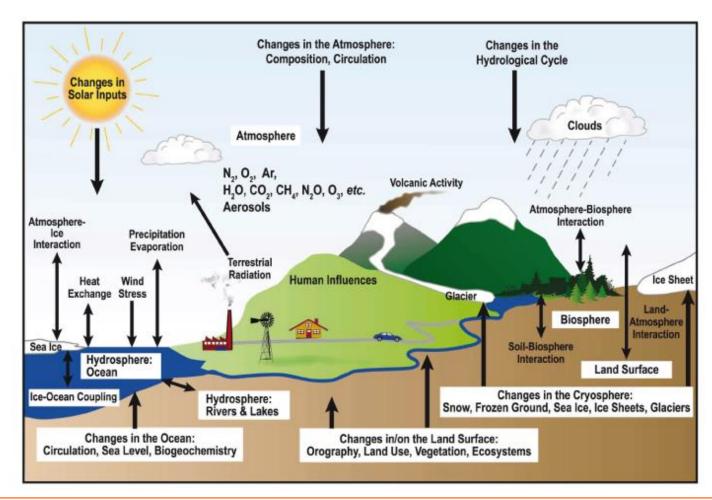




Climate change course in Aalto

- Climate change as a scientific phenomenon
- Mitigation
- Adaptation

With a scent of business + technology aspects by visiting lecturers







Feedback from students

"Group work was very nice, our group worked well. Having compulsory meetings was good."

Multidisciplinary group work!

"It gave a good amount of climate literacy. I think it will help me in the future. The online material worked really well for me and I liked the guest lecturers."

"It is really important that we have a general course about climate change."





Climate.now with educational games (Aalto Online Learning pilot, spring 2020)



Pilots

Ever

Vews

About V Publications

Submit Your Idea Now!

Pilot case

AALTO CLIMATE.NOW COURSE DEVELOPMENT WITH EDUCATIONAL GAMES

Developing and redesigning the Aalto Climate.now course to enable more flexible online learning and to increase the student engagement by using climate change educational games.

Blended learning Online Textbooks and Automatic Assessment School of Arts Design and Architecture School of Business

School of Chemical Engineering School of Electrical Engineering School of Engineering School of Science 2019 2020





Current status of sustainability education in Aalto

- Climate change and sustainability mentioned on many (even all?) courses, the grand challenge is recognised
- Much of the research is directly linked to sustainability or climate change mitigation
- However, feedback from students and personnel:

Clear need for assessing climate issues on a deeper level during candidate/master education

There is considerable climate anxiety among the students; education needs to respond to that





Should the climate and sustainability teaching be integrated to the alreacy existing courses or taught as separate courses?

- We need both.
- Positive in integration approach:
 - Student can see his/her own field's role in creating solutions and adapting to climate change
- Shortcomings in integration approach:
 - Discipline based integration fails to take into account the multidisciplinary nature of climate change problem
 - The knowledge and expertise does not grow; the topic is mentioned on many courses, but handled only on a very general level
 - Implementation depends a lot on teacher's own interest and knowledge





Proposals for improving sustainability education in Aalto

- Support needed for teachers on how to integrate the theme on their courses (clear guidelines and training)
- Also separate courses on climate change, sustainability and ethical questions are needed
 - sustainability minor selectable to all students and/or obligatory course
- More cooperation among researchers and teachers across disciplines is needed
- More cross-disciplinary studies for students
- Student guidance in finding and selecting sustainability-related courses and minors
- Long-term perspective and vision for teaching





Take home messages

- University needs to provide deeper education in climate change and sustainability
 - World needs it, and students are requiring it
- Besides integration approach, specific courses on the topic are needed
- Special courses for climate change and sustainability enable multidisciplinary encounters between students
- Knowledge on climate change and sustainability as such gives confidence for students to keep the ambition high in working life





Thank you!



Sustainability at Aalto University *Meri Löyttyniemi*Senior Advisor, Sustainability





























Meri Löyttyniemi, Senior Advisor, Sustainability, Research Services

Welcome to Aalto & Otaniemi Helsinki University of Technology 1849 **University of Art & Design Helsinki** 1871 **Aalto University Helsinki School of Economics** 1911 **Aalto-yliopisto Aalto-universitetet**

Science and art together with technology and business

Aalto University in 2018

263 doctoral degrees,

1628 master's degrees,

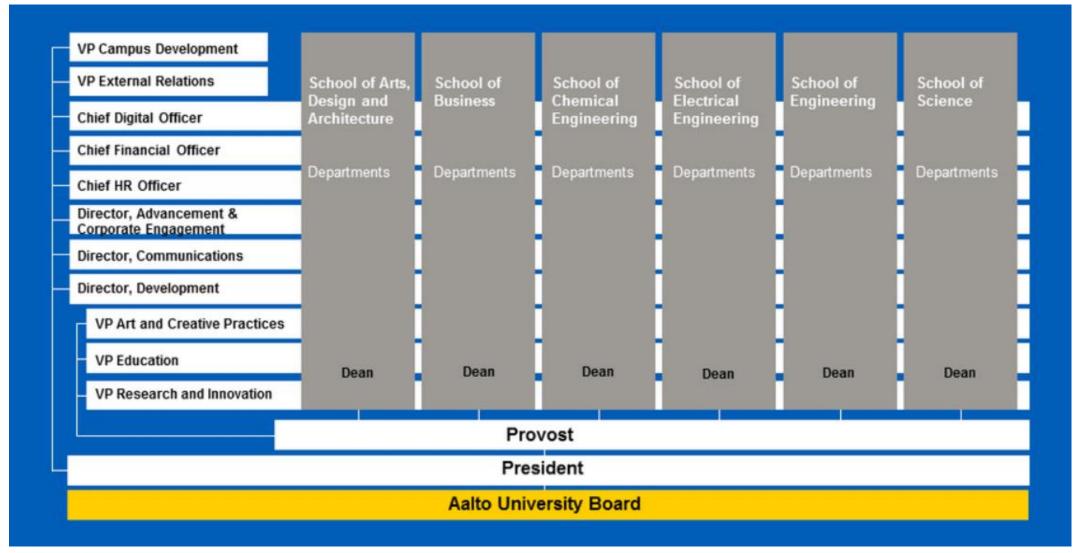
1218 bachelor's degrees

289 graduates from the MBA and EMBA programmes





Aalto organization - six schools





66

The task of universities is to educate game changers of the future, who are in a key position in the building of a more sustainable world.

Ilkka Niemelä, Aalto University President





Aalto is committed to SDG Accord

since Feb 2018



Align all our sectors with the Sustainable Development Goals



Aim to involve all key stakeholder groups



Collaborate
across cities,
countries and
continents with
other signatory
institutions



Share our learning with local and global communities



Report
annually on
our
contribution
to the SDGs







Mission of Aalto Sustainability Hub

- To create a world-class research and learning environment focused on sustainability and circular economy
- To bring new understanding of the systemic solutions needed for a sustainable future

In addition, responsibility for advancing sustainability in Aalto's all operations





Aalto University

Aalto Sustainability Hub (ASH)

Board and Academic director

Members from all Aalto Schools, Academic Director *Minna Halme* as chair

VP Research
Ossi
Naukkarinen







Advisory board

Representatives of society

Academic

Better world through research

Learning for sustainability

Management, Networks, Impact

Strategy, targets
Campus as living lab,
stakeholders

Reporting & communications

Global societal engagement in collaboration with Aalto Global Impact (not funded by ASH)

Aalto Sustainability Hub comprises of over 500 members

Hub staff

Meri Löyttyniemi 100%

Paula Schönach will start 1 April 2020 +student trainees **Emma Sairanen** 80% & **Aino Saarelainen** 40% for AaltoSDG mobile app



Aalto Sustainability Hub

Sustainability highlights during 2019

- Sustainability Science Days –conference 2019; EU impact and large number of scientific tracks
- Aalto Living strategy 2021-30; ASH central contribution in all phases
- Plenty of events, visits and sustainability actions











Upcoming strategy 2021-2030





A Targets to be defined during 2020 for research, education, campus and outreach

Climate-related actions

- Aalto signed the Climate letter & Ilmastoveivi
- National Climate panel 2020-23; Aalto members prof. Peter Lund, Ari Ekroos & Jarek Kurnitski
- Continuing our work with cities of Helsinki & Espoo
 - **Smart & Clean Foundation**
 - Helsinki Climate partners / Ilmastokumppanit
 - Espoo & SDGs
- Participation in Climate Leadership Coalition and FIBS
- Sitra Erätauko dialogue on climate education Jan'19
- Climate-KIC pioneers & Noora Jaakkola's thesis
- Climate strikes in Otaniemi, spring & fall'19
- Climate-smart guidelines for NUAS coming May 2020





















Coming up and comms







Ohjelma

13.00 Tervetuloa, opetuksesta vastaava vararehtori Petri Suomala ja piispa Kaisamari Hintikka

Tilaisuuden tarkoitus, yliopistopappi Jenny Vainio

13.05 Tuoko teknologia toivoa? Ilmastonmuutoksen hillintä globaalista ja kansallisesta näkökulmasta

Pauliina Kainulainen

Ohjelma, ilmoittautumiset 14.4. mennessä: aalto.fi/fi/tapahtumat/ilmasto-muuttuu-millaisia-ovat-tulevaisuuden-toivon-nakokulmat



Sustainability communications

Aalto Sustainability Hub

- Looking for collaboration? Contact us or check <u>people.aalto.fi</u>, <u>research.aalto.fi</u>
- Follow us in Twitter and Facebook @AaltoASH
- Aalto Sustainability -email a) internally b) for external stakeholders
 - Internally 1-10 messages a week (only to @aalto.fi email) Events, research, collaboration
 - External newsletter once a month to your email, subscriptions emma.2.sairanen@aalto.fi

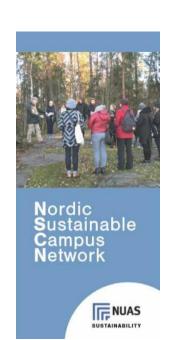
National Finnish SD-forum – Suomen keke-foorumi since 2008

More info and how to join the national mailing list: <u>bup.fi/forum-for-sdgs-in-finland/</u>

NSCN - for Nordic universities sustainability professionals since 2011

- Chaired and coordinated by Aalto, KTH will take the lead soon
- Join the mailing list as an individual or as an institution; meri.loyttyniemi@aalto.fi
- www.aalto.fi/nscn





Thank you...

and let's take a group picture!

Aalto Sustainability Hub

aalto.fi/sustainability







Can entrepreneurship change the world?

Minna Halme

Director of Aalto Sustainability Hub,

Professor





























Is entrepreneurship good per se?

Is change beneficial per se?

It is the focus of entrepreneurship and direction of change that matter





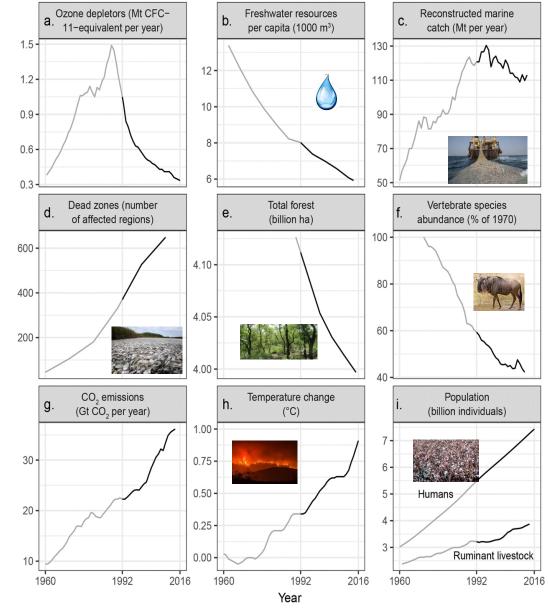
Challenge: Liveability of the earth

Loosing what we want to keep, by-producing what we don't want

Source: World Scientists' Warning to

Humanity: A Second Notice

BioScience. 2017;67(12):1026-1028. doi:10.1093/biosci/bix125

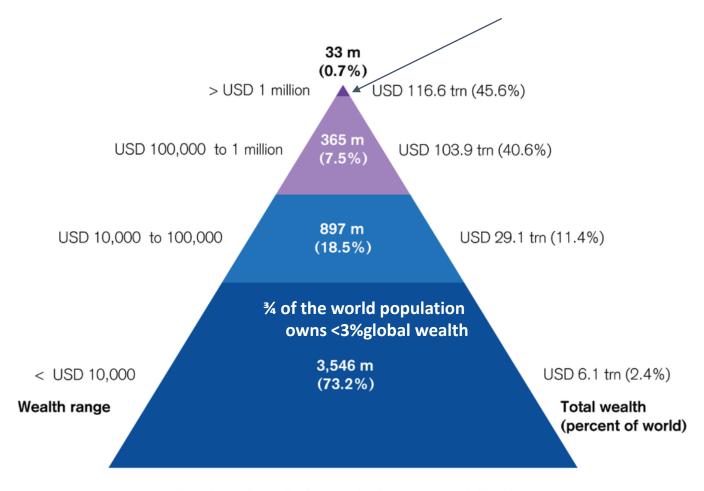




The richest 1% owns half of global wealth

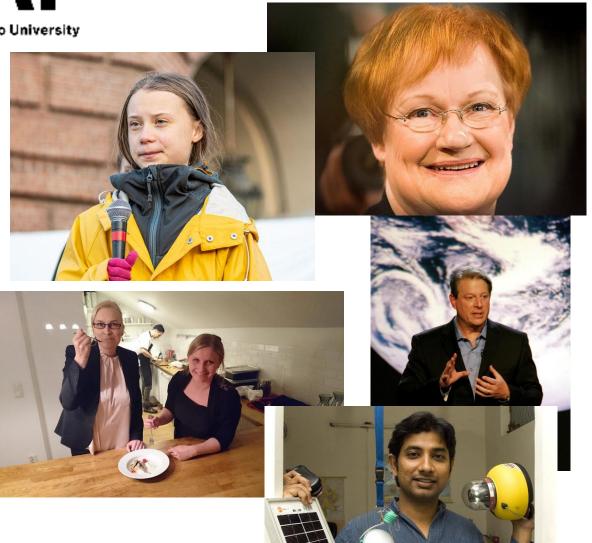
Challenge: Increasing inequality

Source: James Davies, Rodrigo Lluberas and Anthony Shorrocks, Credit Suisse Global Wealth Databook 2016



Number of adults (percent of world population)





Entrepreneurship is not for business people only. It gets manifested in many places.

Social/sustainability entrepreneurship

What is it?

 (Economic) activity to pursue social/sustainability goals and implement change toward sustainability

Who are social/sustainability entrepreneurs?

• Individuals who try to solve social/sustainability problems using entrepreneurial skills and means





Aalto

Sustainability

You can also be a (social) intrapreneur

- Social intrapreneurship acting entrepreneurially inside a large organization to achieve social or environmental aims
- For social intrapreneurs lack of resources is a rule rather than an exception
- Resource scarcity in a rich organization = Lack of time, financing and support
- The bricolage solution "making do with what is at hand" is a useful concept for understanding how social entrepreneurs and intrapreneurs mobilize (often scarce) resources
- May require use of private life roles & networks & free time & working underground if expect resistance from superiors
- The intrapreneurship paradox wanted and not wanted
 - Tolerance of bricolage from the organization
- Recognize and provide legitimacy to bricolage type of arrangements



Guidance for entrepreneurs working for sustainability causes

- Be true to your desired outcomes
- Set something in motion (inspiration comes from action and not vice versa)
- Get from sympthoms to the problems finding the root causes & tackling them



Every challenge

Is an opportunity





Never doubt that a small group of thoughtful, committed citizens can change the world. Indeed, it is the only thing that ever has.

~ Margaret Mead ~

More information

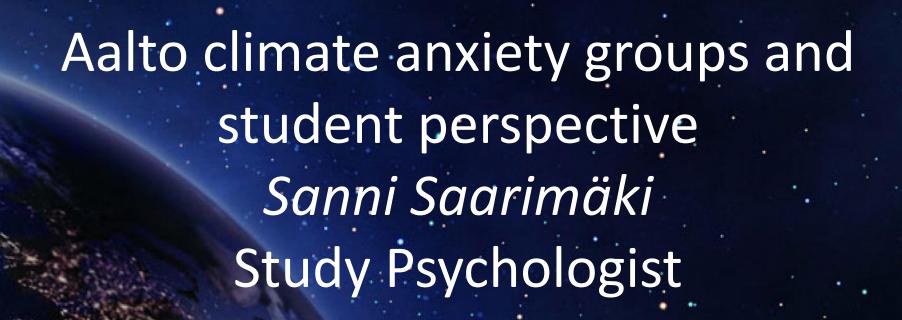
Professor Minna Halme minna.halme@aalto.fi

http://sustainability.aalto.fi

http://sub.aalto.fi

https://people.aalto.fi/index.html?language=english#minna_halme

































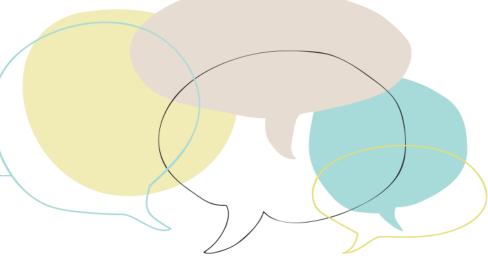
Dealing with climate anxiety – How to support students?

Study psychologist Sanni Saarimäki, Aalto University sanni.saarimaki@aalto.fi

Climate change and students

- Why should we care about emotions related to the climate change? For example:
 - Emotions related to climate change are common and very human – individuals shouldn't be left alone to deal with that
 - Emotions can be energy for actions if one finds ways to channel it, but too heavy emotional burden and feeling that there is nothing one can do to make situation better can cause one to freeze or get stuck
 - Emotions and career choices?
 - The way we deal (or not deal) with difficult emotions can affect learning, creativity and motivation





Questions to ask... (first) from yourself

- How would you or students wish that climate change and emotions related to it would be taken account in every day talks (friends and family, working life, politics, media, etc)?
- What kind of emotions, thoughts and bodily reactions can climate crisis cause in students or in you?
- What causes climate anxiety and what can make it worse?
- What have you or students tried to do to deal with those feelings (no matter if it helped or not)?
 - What helps with difficult feelings and emotions related to climate and environmental crises? Why?



Example: Climate change and emotions – Workshops for Aalto students

This group workshop is specifically aimed for Aalto students. We will focus on emotions and thoughts, concerning climate change and environmental crises, and how to live with that burden. Are there ways to maintain your own balance and resilience, and be mindful, whilst trying to cope with a constant stream of bad news and a feeling that so much more needs to be done? Together, we will create a safe place for sharing thoughts, connecting with others and finding our own ways face the emotions caused by the climate threat. The workshop consists of group discussions on specific themes as well as mindfulness-based practices.

However, we will not be teaching one another how to live in an eco-friendly way or argue what actions should be taken to solve climate change. This means you can join the workshop without fear of judgement, no matter what your personal views or actions concerning these issues are, as long as you remain nonjudgmental towards others as well.

The workshop is led by study psychologists Sanni Saarimäki and Merita Petäjä. Language is English.

When: 23.4.2020, at 9.00-11.00 (at Otakaari 1).

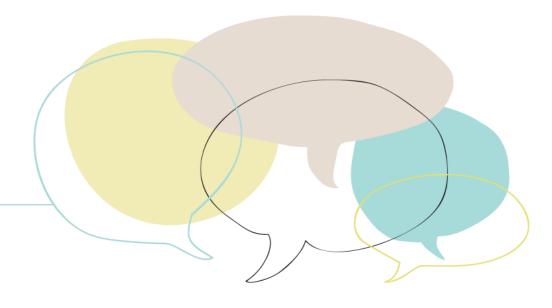
Sign up by e-mail (sanni.saarimaki@aalto.fi). Deadline for sign-up: 16.4.2020



Questions or comments?:

sanni.saarimaki@aalto.fi

Thank you!



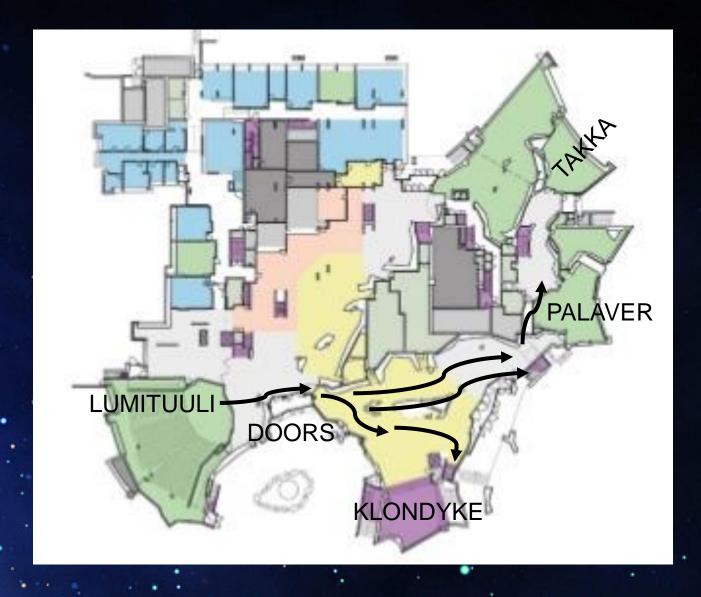


Parallel workshops: 10.30-11.30

Awareness-based climate education and co-creation, PALAVER

Coping with climate anxiety, TAKKA

1,5 Degrees Lifestyle Puzzle, KLONDYKE





























Vegan buffet lunch at SIEF
11.30-12.30

Climate Challenge filming 11.30-12.45

