

Dr Erica Löfström – short Curriculum Vitae

My name is Erica Löfström and I work as a researcher at the Department of Psychology, where I work with Radical Innovation for Sustainable Futures, specializing in eco-visualization, provotyping (provocative prototyping), and the design of new solutions as part of participatory processes. My background in the cutting field between Computer Science (CS), and Science- and Technology Studies (STS), has allowed me to develop a new direction in environmental communication that involves Disruptive Communication and Eco-Visualization. In this new direction, art and design/interfaces are important ingredients. During the last few years, I have developed new co-design methodologies in addition to using existing ones. This is to meet the need for radical innovation and to achieve systemic changes to enable the transition to a low-carbon society. I continually carry out explorative research projects which actively involve end-users and other stakeholders by means of prototyping and *provotyping* as part of a method called vision workshops.

List of Key Achievements

- 1) Development of Disruptive Eco-visualizations as theory and method, and also co-development of two examples of such visualizations; <https://www.niyf.no/eco-visualization-2/>; <https://youtu.be/ebSCWvyLAYk>
- 2) Development of Vision Workshops Methodology, a co-design method consisting of 3 interdependent steps developed from scratch into a full project proposal which received funding from the Norwegian Research Council (NRF.no, Grant number: 302111), www.niyf.no
- 3) Development of PhD in eco-visualization for Zero Emission Neighborhoods as part of a research center which received > 18 Mill Euro www.zen.no, I am now the main supervisor of this PhD.
- 4) One of the main developers of the project SMARTEES, where I was also active as researcher and WP leader for WP6; <https://local-social-innovation.eu/contact/> ca 4 Mill Euro funding in total.
- 5) Further development of Provotyping as part of co-designing methods. This is one of the concepts and methods we have used as part of INCITE-DEM, an EU project which we recently were awarded funding for.

***CURRENT AND PREVIOUS POSITIONS**

2017	Researcher: Faculty of Social and Educational Sciences/Department of Psychology, Norwegian University of Science and Technology (NTNU)/Norway. https://www.ntnu.edu/psychology/ces
2016-2018	Associate Professor: Faculty of Information Technology and Electrical Engineering / Department of Computer Science, Norwegian University of Science and Technology (NTNU) /Norway
2011-2015	Senior Scientist: SINTEF, Dept of Building and Infrastructure, Trondheim/Norway
2009-2012	Postdoc: Department of Interdisciplinary Studies of Culture/Norwegian University of Science and Technology (NTNU)/Norway
2007-2008	Expert for the Swedish Energy Efficiency Inquiry: Swedish Government Office, via WSP, Stockholm/Sweden
2001-2001	Editorial Officer: Nokia Home Communications, Linköping/Sweden

Project Acquisition

Throughout my research career I have continually achieved competitive funding. Here is a table that presents the proposals that have been successful. The table involves a brief description of the projects and my role in these. Hopefully, this will illustrate my ability to develop research concept and achieve funding. Most of these projects involves external partners that I have successfully recruited for the proposals.

Name, Acronym and Project Period	Funding in Euro (ca) & Funding Agency	Description	My role in the proposal & project
INCITE-DEM - Inclusive Citizenship in a world in Transformation: Co-Designing for Democracy https://cordis.europa.eu/project/id/101094258/de 2023 - 2026	€ 2 988 838,75 HORIZON-CL2-2022-DEMOCRACY-01-02 - The future of democracy and civic participation	We will “challenge” democracy and use “provotypes” to stimulate for the co-development of new approaches on democracy and citizen participation as part of so called “Democracy Labs”. We also use Agent Based-Modelling as we did in the SMARTEES-project.	I developed the department of Psychologys part of the proposal, include... ing the “provotyping” approach for the proposal and I will carry out Provotyping training- workshops in the project.
CLEAN Cultures: An approach for innovative Climate Learning, Evaluation and Action in Neighborhoods https://www.cleancultures.org/ 2021-2024 (ongoing)	€ 6 900 000 JPI Climate, societal transformation in the face of climate change, with National NFR support for the Norwegian part of the project (NFR)	We are following up local understanding of climate change and grassroot approaches at a neighborhood level and supporting initiatives. We also make unconventional interventions based on disruptive communication and eco-visualization.	I developed the NTNU part of the project, and especially the unconventional neighborhood interventions. I recruited the partners for both Norwegian cases t. I am the P.I. in our 2 Norwegian cases.
NIYF, Nature In Your Face - Disruptive Climate Change Communication to Trigger Societal Transitions. Project number: 302111 2020 – 2024 (ongoing)	€ 1 300 000 Euro (12,9 MNOK) Norwegian Research Council, KLIMAFORSK program	This project is «my baby» and I have developed the methodology from scratch. It involves disruptive eco-visualization and vision workshops, and I am already working on an NFR proposal as a part II of this project.	In 2020, the main NIYF-project was awarded funding from the Norwegian Research Council and I now lead and coordinate this project. We have hired a postdoc, Kristoffer Fjællingsdal, who is working together with me in this project.
ENTRANCES: ENergy TRANSitions from Coal and carbon grant agreement ID: 883947 2020- 2023 (ongoing).	Total budget € 2 999 523,75 with Norways EU-contribution: € 282 500. HORIZON2020-EU.3.3.6.	We study the transition from Coal and Carbon to Renewables with pan-European cases.	I was part of the team that wrote our case descriptions and recruited the Norwegian partners for the proposal. I have a researcher role in relation to our Norwegian case, Stavanger.
Nature In Your Face: pilot study for Proof of Concept.	€ 50 000 (ca 0,5MNOK) Climate-KIC	In this project, we developed a Proof of Concept (PoC) which formed the basis of the	I developed this pilot project that later formed the seed for a full-scale

2019		full-scale project. We explored the use of disruptive climate change communication to involve children as co-designers of plastic-neutral solutions for Kristiansund.	project, Nature In Your Face (NIYF).
SMARTEES: Social innovation Modelling Approaches to Realizing Transition to Energy Efficiency and Sustainability (grant agreement 763912, 2018-2022	€ 4 000 000 (3 988 038NOK) HORIZON2020-EU.3.3.6	This project was the first one I worked with when I joined the Department of Psychology. In this project we used Agent Based Modelling (ABM) to understand and illustrate cases of Transition to Energy Efficiency and Sustainability.	I was an active part of developing and writing this proposal, including getting partners. We (Department of Psychology) coordinated the project, and I was the WP-leader (WP6, Social Inclusion) and also responsible for 3 project cases.
FME-center ZEN (Zero Emission Neighborhoods Project number: 257660) 2017-ongoing	18 000 000 Euro ((176 MNOK)	The Research Center was a large and interdisciplinary and it built on the previous research center ZEB (Zero-Emission Buildings).	While working at the Department of Computer Science I was part of the team developing the NTNU/SINTEF proposal for the FME-center ZEN. As part of this, I developed a PhD on Eco-visualization which I am now the main supervisor of. I also recruited partners for ZEN.
Social Priming: Supporting Social Interaction in Care Environments Project number: 247769. 2015-2016	92 000 Euro ENERGIX-program Norwegian Research Council	In this project we co-developed social gaming concepts to fight loneliness amongst the elderly together with seniors at care homes.	The project Social Priming was developed together with a SINTEF colleague and we carried out the project together as planned.
BEVISST: Bevisste strategier for oppslutning om bærekraftig oppgradering i boligselskaper (Project number: 217619) 2012-2015	(2,1MNOK, NFR, Norwegian Research Council, ENERGIX program.	We studied how decision on ambitious energy upgrades were made in co-ownerships in Norway. We used cases in Norway to study.	While I was in my final year of my postdoc, I was offered a position as senior researcher at SINTEF, Building and Infrastructure. At SINTEF, I developed and applied for funding for a project together with two colleagues, BEVISST. My part of the project involved user studies on smart- grids and meters.
Personal Postdoc-fun	€ 180 000 ca	After my PhD, I applied for a personal postdoc scholarship to pursue my	After a brief negotiation period with NTNU and the Swedish Research council,

MetKit: the Metabolism of the Kitchen (project id: 2009-01383_Formas) 2010 – 2011	Swedish Research Council/Formas	research on visualization and user behavior. I had also applied for a postdoc position at NTNU, KULT, to explore participatory processes in a low-carbon neighborhood. I ended up getting both these, and managed to do two PhDs “in one”.	I managed to transfer the personal postdoc stipend money into the NTNU system, which enabled me to do both projects during my thereby slightly extended postdoc period at NTNU.
Eco-Visualization study on Iceland 2005	€ 15 000 Swedish Research Council	An investigation on whether visible natural resources (geothermal heating) may influence the Icelanders perception of the use and value of nature and natural resources.	During my PhD, I applied for and received extra funding for a three-month research stay on Iceland to explore my idea to use eco-visualization as a means to create user-awareness. I carried out the project as planned.

Education

- 2008** **PhD: Visualizing energy in households.** Part of the interdisciplinary Swedish national research school *Energy Systems*. A cooperation between KTH Royal Institute of Technology, the Ångström Laboratory, Chalmers University and Linköping University. Dept of Technology and Social Change, Linköping University, Sweden
- 2003** **Pedagogics for Academics** *Passed with distinction. Department of Teacher Education, Stockholm University, Sweden.
- 2002** **Double Master of Science Degrees**
- Department of Computer Science, Linköping University, Sweden.
 - Information- and Media Science/Informatics, Linköping University, Sweden.
- 2001** **Bachelor of Science Degree**
- Information- and Media Science/Informatics, Department of Information- and Media Science/Informatics, Linköping University, Sweden.
- 1999** **Journalism for Academics**
- Department of Journalism, Stockholm University, Sweden.

FELLOWSHIPS, AWARDS AND PRIZES

- 2009-2012** **Postdoc: Department of Interdisciplinary Studies of Culture/Norwegian University of Science and Technology (NTNU)/Norway**
- 2003** **Telecom City Prize Award for Best Master Thesis in Informatics/Sweden**
- 2016** **Best Paper Award, Review of Systems and Technologies for Smart Homes and Smart Grids** (co-author). *Energies* Volume 9. (5),

Dissemination

I have led symposiums and workshops at international conferences and continue to do so. I continually supervise both master students and PhDs. In addition, I continually participate in public debates and discussions on climate change and have had especially good response when I talk to young people and children. As examples of my outreach activities, please see the Nature In Your Face website, www.niyf.no, and for instance <https://www.nrk.no/innlandet/over-300-interesserte-i-miljoennlige-boliger-pa-moystad-okotun-i-hamar-1.16319787> and <https://gemini.no/2021/08/skal-provosere-fram-klimaengasjement/>.

Scientific Production

In addition to my PhD, I have continually written papers in peer-reviewed conferences, books and journals. Here is a list of the 10 most relevant publications together with a short description of their content (for full references and additional details, please see enclosed cv and papers, attachments).

10 Publications (selection of total 66):
1. Löfström & Fjællingsdal (2022) Provotyping and Eco-visualization: Disruptive Workshops to Question Status Quo and Co-design Solutions. In: Disruptive Environmental Communication. Springer Nature 2022 ISBN 978-3-031-17164-2. p. 91-103
2. Lobaccaro, G, Carlucci and Löfström (2016) Journal paper, Title: A Review of Systems and Technologies for Smart Homes and Smart Grids Publishing: Energies 2016; Volum 9.(5) - This paper was awarded the 2016 Energies Best Paper Award (Category 2), please see: 10.3390/en9050348
3. Klöckner, Löfström (2022) What Is Disruptive Communication, and Why Might It Be Necessary? In: Disruptive Environmental Communication. Springer Nature 2022 ISBN 978-3-031-17164-2. p. 1-17
4. Dahl and Löfström (2018) Journal Paper, Title: Supporting Social Interaction in Care Environments: Exploring Stakeholder Perspectives on the Potential of Interactive Technology, International Journal of Human-Computer Interaction, Taylor & Francis, Exploring (with end-users) the potential of interactive technology (games) to support social interaction. DOI: https://doi.org/10.1080/10447318.2018.1426897
5. Löfström, E, Richter, I. and Nesvold, I.H. (2021) Journal paper, special Issue Title: Disruptive Communication as a Means to Engage Children in Solving Environmental Challenges: a Case Study on Plastic Pollution. Publishing: Frontiers in Psychology, "People- Environment Studies: Promoting Sustainable Places and Behaviors", DOI: https://doi.org/10.3389/fpsyg.2021.635448
6. Löfström, E, Klöckner, C.A, and Nesvold, I.H. (2020) Journal paper, special issue Title: Nature In Your Face-Disruptive Climate Change Communication and Eco-visualization as part of a Garden-Based Learning Approach involving primary school children and teachers in co-creating the future Publishing: Frontiers in Psychology, 18 December 2020. DOI: https://doi.org/10.3389/fpsyg.2020.568068 .
7. Klöckner & Löfström (2022) Book: Disruptive Environmental Communication. Springer Nature 2022 (ISBN 978-3-031-17164-2) 164 p. Psychology and Our Planet.

8. Löfström, E, Palm, J and Gullberg (2012) Journal paper, Title: Environmental Behaviour, International Encyclopedia of Housing and Home, p. 92-98, Elsevier, ISBN: 9780080471716
9. Löfström, E and Palm, J (2012) Journal paper, Title: Energy Saving, International Encyclopedia of Housing and Home, p. 87-91, Elsevier, ISBN: 9780080471716
10 Sommer, Löfström & Klöckner (2022) Activist Art as a Motor of Change? How Emotions Fuel Change. Disruptive Environmental Communication. Springer Nature 2022 ISBN 978-3-031-17164-2. p. 43-56

Pedagogic and Teaching Experience

I have teaching experience in product design, interaction design, Science- and Technology Studies (STS), Environmental Communication, Experts- in Teams courses, and in Eco-visualization, co-design- and workshop methods. In addition to my previous teaching and tutoring experience, I have taken a qualification course for teaching as part of my PhD in Sweden, and I have also studied pedagogy specifically. I also have experience with student-active teaching strategies and digital teaching.

I continually supervise both Master Students and PhDs.