Marianne Steinmo

The Role of University-Industry Collaboration for Circular Innovation Processes

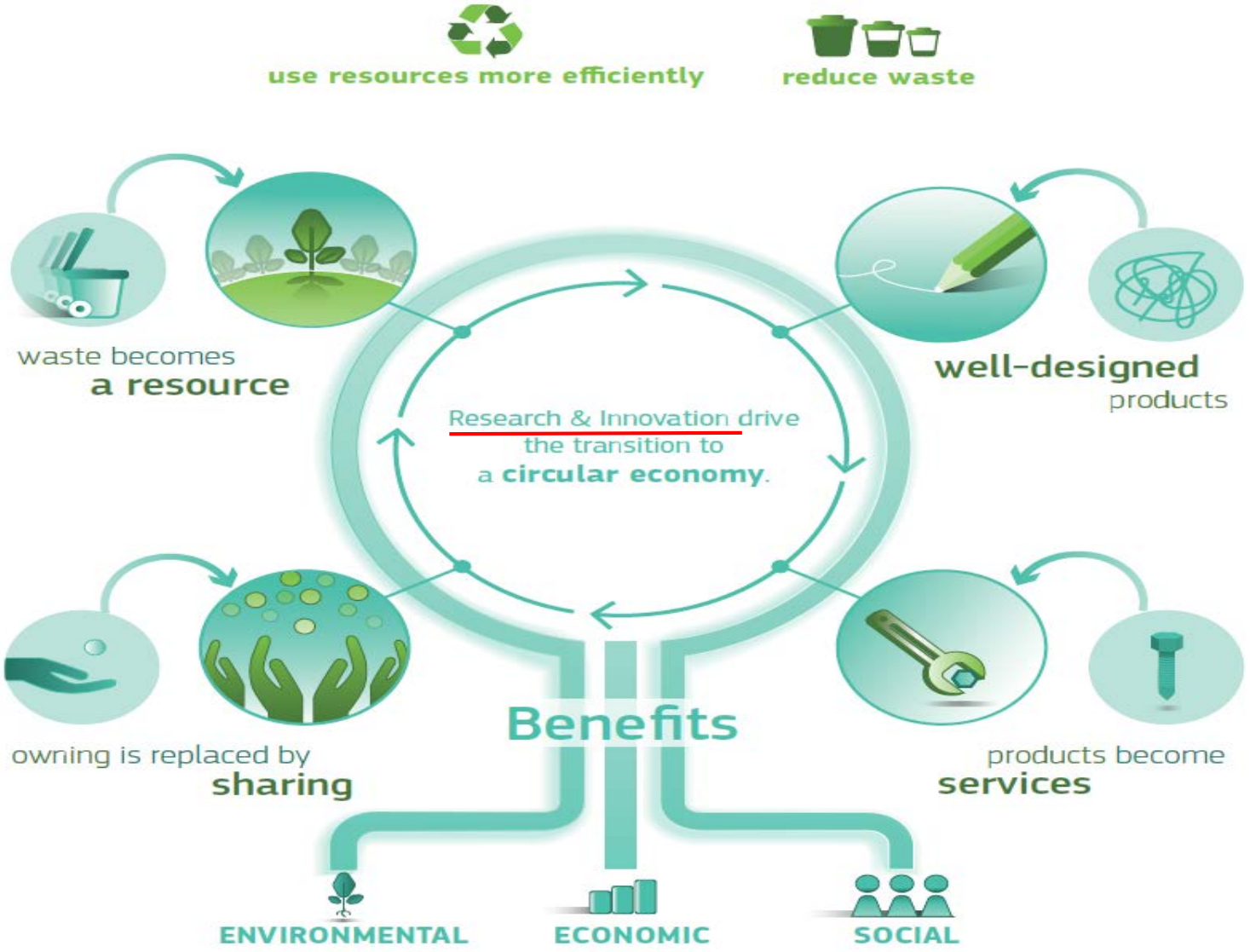
NORD University / BUSINESS SCHOOL

HighEFF

CenSES
Centre for Sustainable Energy Studies

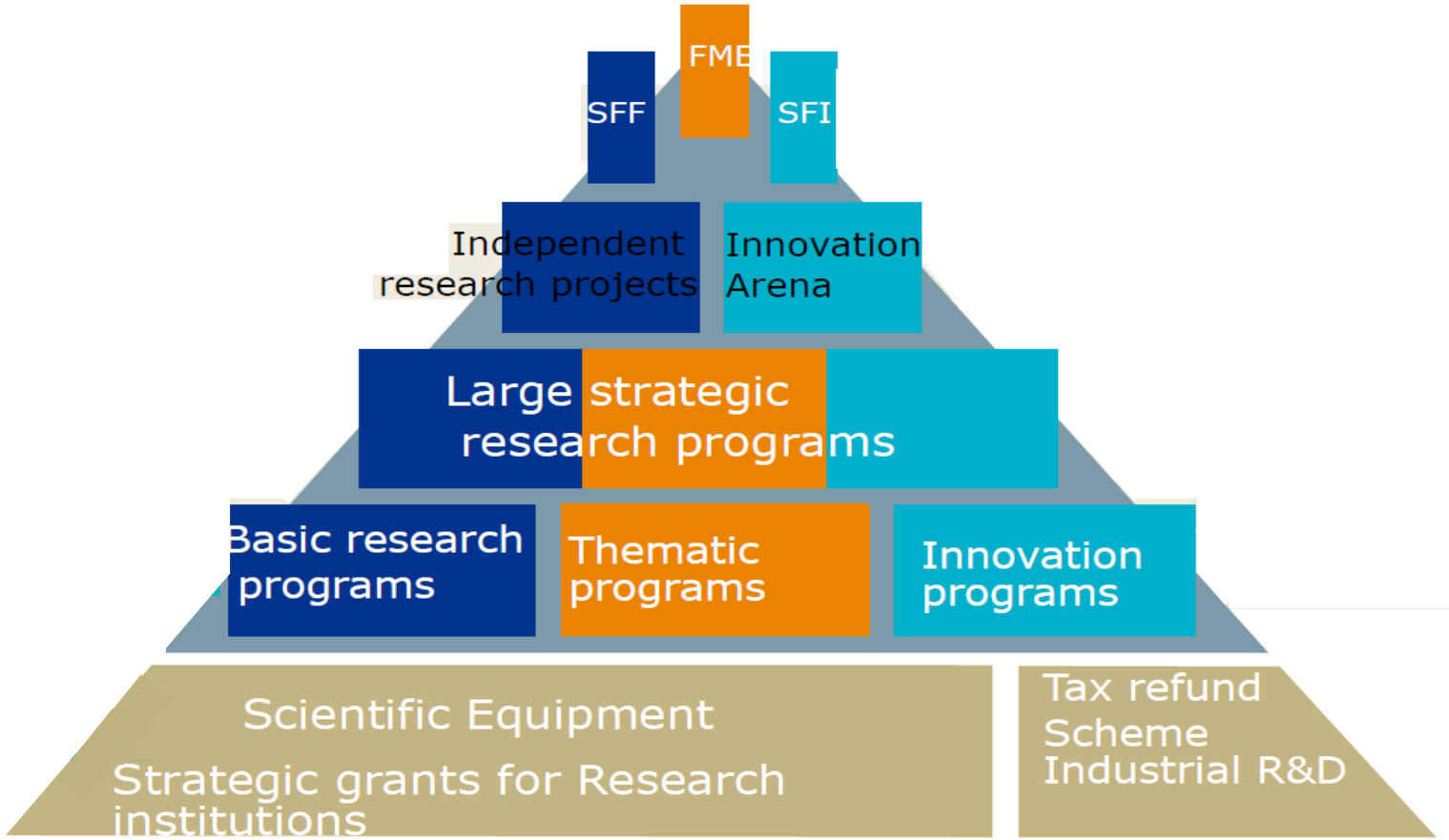
FME Forskningssenter for miljøvennlig energi

Transition to a circular economy



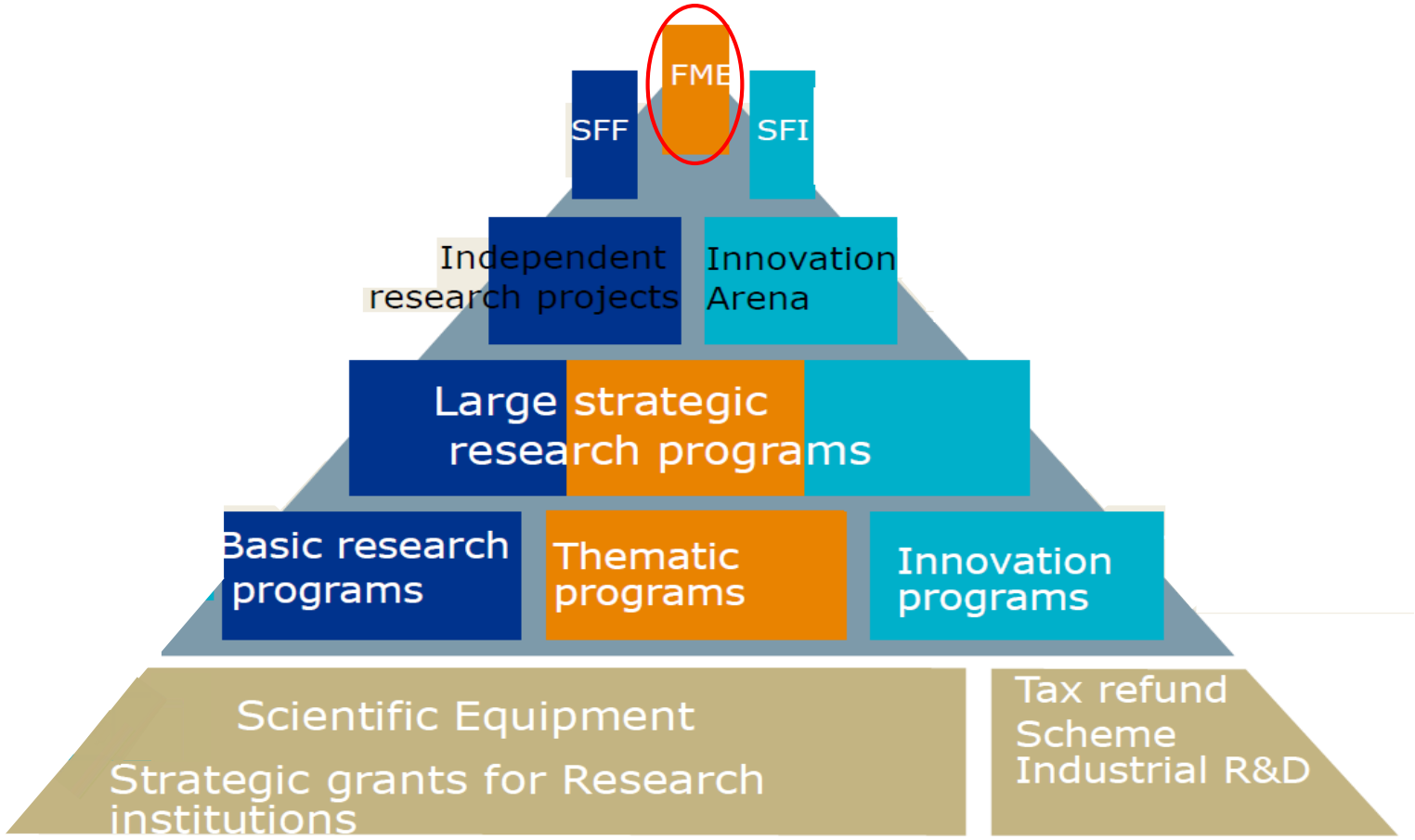
European Commission (2017)

Research projects funded by the Research council of Norway



Research council of Norway

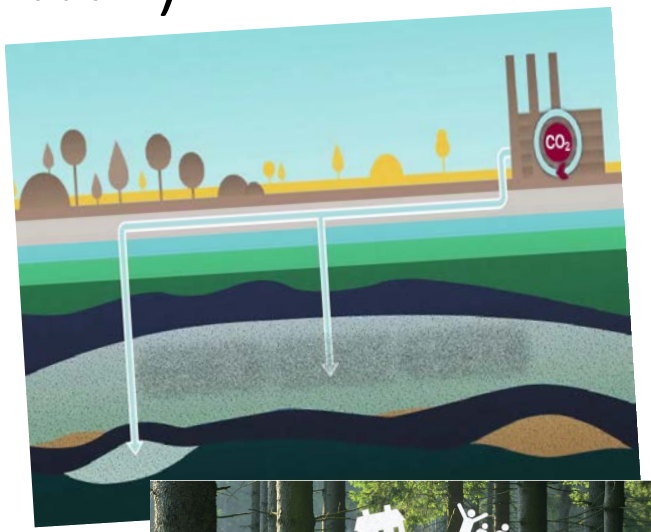
Research projects funded by the Research council of Norway



Research council of Norway

Norway's public Centres for Environment-friendly Energy Research (FME)

- Develop **competence** and **innovations** through **long term focus on research**
- Develop **national teams of research expertise** in the filed of environment friendly research



CENTRE FOR ENVIRONMENT-FRIENDLY ENERGY RESEARCH
The Research Council of Norway

The project

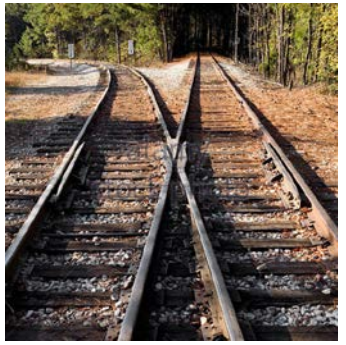
- Longitudinal study of six technological FME centres
  - 94 interviews (48 firms, 46 research partners)

  (2013, follow-up 2015)
- Annual reports, evaluation reports, newsletters
- Research team:
  - Associate prof. Thomas Lauvås
  - Associate prof. Marianne Steinmo
  - Professor Roger Sørheim
  - Associate prof. Ola Edvin Vie

Why should firms collaborate with public research organizations?

- Give firms access to **fundamental knowledge** and the possibility of conducting **high quality research**, essential for **innovations**

- **Challenging task** for firms to achieve successful external collaborations

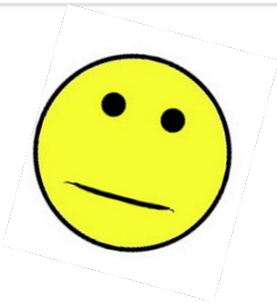


Conflicting institutional logics

	Academic science logic	Commercial science logic
Mission	Developing new knowledge that is publicly available	Solving concrete problems valued in the marketplace
Goal	Scientific progress	Financial returns
Research	Primarily basic research	Primary applied research and technological development
Use of results	Publications	Intellectual property rights (e.g. patents)
Working practices	Research freedom based on personal interests, long-term curiosity-driven research	Coordinated research according to the firm's needs. Short- and medium term outcomes
Motivation	Status in the scientific community	Higher financial returns

*"There are some **fundamental conflicts** between the industry and academia. The industry wants direct and applied results and development of the industry, whereas academics are more scientific oriented and have to leverage articles. There are many discussions about that, **but we always come to an agreement**"*

In the beginning of the collaboration..

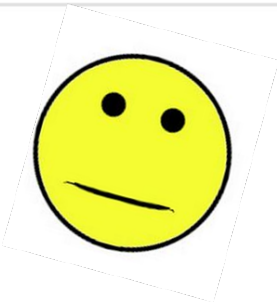


- **Low involvement**

"We didn't have the time or the resources to be very involved"

- **Low firm influence** on working tasks *"The initiative comes from the [research partners]"*

In the beginning of the collaboration..



- The **firms expected more results**

"We do not have many benefits from the output"

*"I think there is very **little focus on product development** in [the collaboration]. The focus should have been much more commercially oriented and rooted in the industry"*

Over time..

- **Increased involvement** for several of the firms

  "We have understood that we have to engage more in the [collaboration]"

- Higher **firm influence** over time..

  "After collaborating for some time, the research partners said that they wanted us [the firm] to influence the research tasks"

Over time..

- Over time, the firms **understood that they needed to become more involved** to obtain benefits

*"We are **not 'baby birds'** sitting with open throats waiting to be fed by the [research partners]. Actually, we have to do something **to achieve the benefits** of the [collaboration]"*

*"When I say applied, it does not mean that our research are very different; **we do the same research, but** we work on research questions **that are more relevant for the industry partners**"*

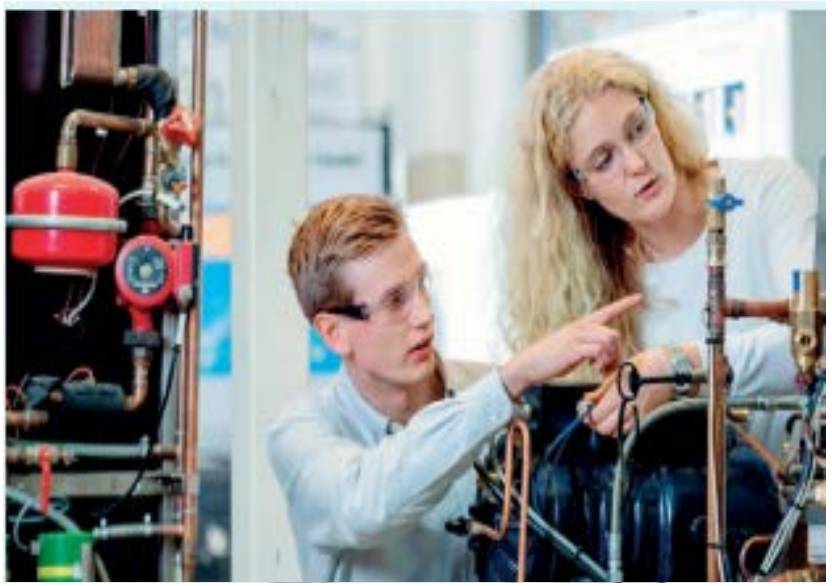
How was the collaboration improved?

- Increased interaction (formal and informal meeting arenas)
- Clarifications of expectations
- The partners became more aware of institutional differences
- Mutual understanding and trust
- Openness
- Mutual dependency and power balance

- Increased interaction (formal and informal meeting arenas)
- Clarifications of expectations
- The partners became more aware of institutional differences
- Mutual understanding and trust
- Openness
- Mutual dependency and power balance

- Increased interaction (formal and informal meeting arenas)
- Clarifications of expectations
- The partners became more aware of institutional differences
- Mutual understanding and trust
- Openness
- Mutual dependency and power balance

- Increased interaction (formal and informal meeting arenas)
- Clarifications of expectations
- The partners became more aware of institutional differences
- Mutual understanding and trust
- Openness
- Mutual dependency and power balance



- Increased interaction (formal and informal meeting arenas)
- Clarifications of expectations
- The partners became more aware of institutional differences
- Mutual understanding and trust
- Openness
- Mutual dependency and power balance

CenBio participants to the CenBio Strategic Days 2015 at the visit of the Statkraft Varme Waste-to-Energy plant in Heimdal.
Photo: CenBio.

- Increased interaction (formal and informal meeting arenas)
- Clarifications of expectations
- The partners became more aware of institutional differences
- Mutual understanding and trust
- Openness
- Mutual dependency and power balance


Usefulness of research results
Knowledge integration processes
Involvement

Usefulness of research results


NORCOWE newsletter June 2017

l report
om Research Council Norway to NORCOWE under the FME support scl
it is time to highlight the results. The NORCOWE final report gives you
r achievements, publication lists and lists of scientific staff and studer
continue as a research network, and our website will still be operati

016 – Presentations covering all major topics of NORCOWE
e NORCOWE 2016, highlighting 7 years of NORCOWE research wit
ce on September 14-15 2016. The first day looked at the highlights
the impact of NORCOWE, while the second day took a more in-dep
ll as examinin the future of offshore wind and the major research

Knowledge transferring

- Participating
- Gathering research results and informing firm internally

Involvement

Usefulness of research results

Knowledge translating
- Influencing and suggesting research activities
- Discussing internally and involving firm personnel

Knowledge transferring

- Participating
- Gathering research results and informing firm internally

Involvement

Usefulness of research results

Knowledge transforming

- Co-creating knowledge

Knowledge translating

- Influencing and suggesting research activities
- Discussing internally and involving firm personnel

Knowledge transferring

- Participating
- Gathering research results and informing firm internally

"We work very closely with [the university-partner]. We are here [at the university] at least three times a week, so we have a close dialogue."

Involvement

Firm implications

- Be **involved** and **clarify expectations** with the university partners in the **early phases**
- Develop **personal relations and common understanding** towards collaborating partners by **active engaging** from the start
  - Give the researchers access to data and relevant cases
- **Integrate** the collaboration participation at **several levels** of the firm to **receive greater benefits** from the collaboration

Implications for researchers

- Be **proactive in contacting and engaging** firm partners **early** in the process
- Create **personal relationships**, discuss **desired outcomes** and **formulate common goals**
- Research centers that target long-term **basic research** and include **cash** contributions from **industry** partners might benefit from illustrating **some applied results early** to satisfy impatient industry partners

NORD University / BUSINESS SCHOOL

www.nord.no/en

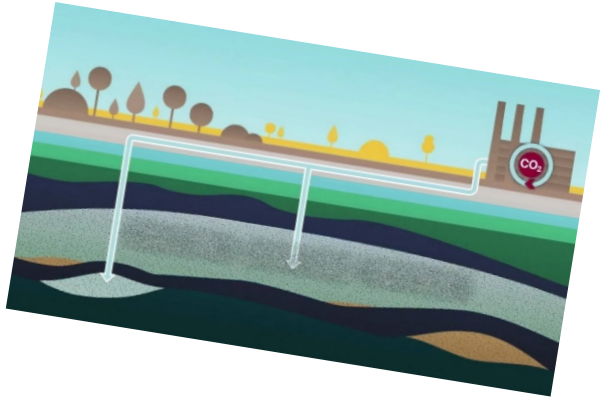
CENTRE FOR ENVIRONMENT-FRIENDLY ENERGY RESEARCH

The Research Council of Norway

sfi Centre for Research-based Innovation

The Research Council of Norway

"Many have said that this is <u>impossible</u>… but we have showed that it is actually <u>possible</u>"



References

- Jakobsen, S. and Steinmo, M (2016) The role of proximity dimensions in the development of innovations in coopetition: a longitudinal case study, International Journal of Technology Management (Vol. 71, No. 1/2, 2016)
- Steinmo, & Rasmussen. (2016) How firms collaborate with public research organizations: The evolution of proximity dimensions in successful innovation projects. Journal of Business Research, 69(3), 1250-1259
- Steinmo, M. (2015) Collaboration for Innovation: A Case Study on How Social Capital Mitigates Collaborative Challenges in University–Industry Research Alliances. Industry and Innovation, 1-28.
- Lauvås, T., Steinmo, M and Vie O. E. (2016) Aiming at innovation in university industry collaboration: How firm representatives accomplish knowledge integration through transferring, translating and transforming activities, work in progess.

Contact

- Marianne Steinmo (marianne.steinmo@nord.no) or
- Thomas Lauvås (thomas.a.lauvas@nord.no)