

# CV – Professor Lars H. Smedsrud

## Personal information

|                               |   |      |      |
|-------------------------------|---|------|------|
| First name, Surname:          | Smedsrud, Lars Henrik   |      |      |
| Date of birth:                | October 15. 1969  | Sex: | male |
| Nationality:                  | Norwegian   |      |      |
| Researcher unique identifier: | <a href="https://orcid.org/0000-0001-7391-0740">orcid.org/0000-0001-7391-0740</a>                           |      |      |
| URL for personal website:     | <a href="https://www.uib.no/en/persons/Lars.H..Smedsrud">https://www.uib.no/en/persons/Lars.H..Smedsrud</a> |      |      |

## Education

| Year | Faculty/department - University/institution - Country                                  |
|------|--|
| 2000 | PhD, Physical Oceanography, Faculty of Natural Sciences, University of Bergen, Norway. |
| 1996 | Master of Science, Physical Oceanography, Geophysical Institute, University of Bergen. |

## Positions - current and previous

| Year      | Job title – Employer - Country   |
|-----------|--|
| 2019-2020 | <b>US-Norway Arctic Fulbright Chair</b> , UC San Diego, USA. This highly prestigious grant from the U.S.-Norway Fulbright Foundation given to outstanding Norwegian researchers was used to improve and facilitate US-Norway Arctic cooperation and expand my active research interests towards Greenland. |
| 2013 -    | <b>Professor</b> at the Geophysical Institute, University of Bergen, Norway.   |
| 2014-2023 | <b>Adjunct Professor (20%)</b> , Arctic geophysics, University Centre on Svalbard, Longyearbyen.   |
| 2004-2013 | <b>Researcher</b> at the Bjerknes Centre for Climate Research and Uni Research, Bergen.  |
| 2002-2004 | <b>Post Doc</b> at the Geophysical Institute, University of Bergen, Norway.  |
| 2001-2002 | <b>Researcher</b> , British Antarctic Survey, Cambridge, UK.   |

## Project management experience

| Year        | Project owner - Project - Role - Funder   |
|-------------|---|
| 2022-2026   | <b>Work Package Leader</b> : Climate Narratives – Norwegian Research Council  |
| 2019 - 2021 | University of Bergen: <i>Nordic Sea Synthesis</i> – <b>Project leader</b> - Bjerknes Centre.  |
| 2019-2021   | European Academies' Science Advisory Council: A sea of change: Europe's future in the Atlantic realm. <b>Assistant leader</b> - European Academies.   |
| 2019-2021   | <b>Ocean Work Package Leader</b> - <i>Norwegian Young Sea Ice Cruise (N-ICE2015)</i> . This was an international research expedition financed by the Norwegian Polar Institute. It involved several months of field work onboard a research vessel north of Svalbard. |
| 2014-2017   | University of Bergen – Bjerknes Centre for Climate Research: <i>Barents Sea Synthesis</i> – <b>Project leader</b> - funded by the Bjerknes Centre.  |

### Supervision of students and design of new courses

| Master's students  | Ph.D. students | University/institution - Country   |
|--|----------------|--|
| 8 + 1 ongoing  | 7 + 3 ongoing  | Geophysical Institute, University of Bergen, Norway,<br>MSc: UiB, UC San Diego and University Centre in Svalbard,<br>1 PhD worked at the Norwegian Polar Institute, 1 at the Nansen Center |
| <p>Recently, I designed the new interdisciplinary course "<b><i>Sustainable Arctic Energy Exploration and Development</i></b>" (5 ECTS) for PhD candidates and Master's students from the fields of for example energy transition and sustainability sciences at the University Centre at Svalbard, Norway. The course started in 2017 and ran in 2019 and 2021 with excellent student evaluation.</p> |                |  |

### Other relevant professional experiences

| Year                                  | Description - Role   |
|---------------------------------------|--|
| <b>INSTITUTIONAL RESPONSIBILITIES</b> |  |
| 2020-                                 | <b>Leader of the Physical Oceanography research group</b> at the Geophysical institute UiB   |
| 2014-                                 | <b>Leader of the Polar Science Network</b> at the University of Bergen. This network aims at increasing interdisciplinary collaboration between polar researchers at research institutions in Bergen. My responsibility as leader of the network also involved important representation duties in national and European contexts.  |
| 2013-2017                             | <b>Coordinating PI and co-leader:</b> Bjerknes Centre Research Group: Atmosphere, Cryosphere & Ocean. Research leader of the group in 2016.  |
| <b>COMMISSIONS OF TRUST</b>           |  |
| 2015-2021                             | <b>Member of the CliC Scientific Steering Group</b> (Climate and the Cryosphere, World Climate Research Programme). This network connects the leading experts in the cryosphere and climate research fields and coordinates modelling activities world-wide. It also arranges scientific workshops as well as stakeholder-meetings and provides strategic advice for international institutions like the United Nations. |
| 2020-                                 | <b>Member of Scientific Advisory Board</b> for the Arctic Ice Project:<br><a href="https://www.arcticiceproject.org/">https://www.arcticiceproject.org/</a>  |
| 2014-2021                             | <b>Coordinating Chair of Arctic ECRA</b> (European Climate Research Alliance). ECRA coordinates climate research in Europe and is a vibrant platform for development of European polar research projects. ECRA is active in providing science-to-policy advice for policy-makers in Europe and to update them on Arctic research and health effects of climate change.   |
| 2002-2018                             | <b>Editorial work, Guest Editor:</b> <i>Forum for Research on Ice Shelf Processes, Annals of Glaciology, Oceanography</i>  |
| 2016-2019                             | <b>Reviewer for international funding agencies:</b> (US) National Science Foundation, Australian Research Council (ARC) and Swiss National Science Foundation.   |
| 2001–                                 | <b>Reviewer for international scientific journals:</b> <i>Nature, Science, Nature Climate Change, Journal of Geophysical Research, Deep Sea Research, The Cryosphere, Geophysical Research Letters, Ocean Science, Annals of Glaciology, Journal of Climate.</i>   |

**Publication statistics:** 60 papers in international peer reviewed journals as of May 2023.

# 10-year track record – Lars Henrik Smedsrud

I am an innovative Polar physical oceanographer with a broad international and interdisciplinary network. My competence is in polar oceans, sea ice and ice sheets, and I want to understand large-scale processes and use my knowledge to contribute towards solving the present climate challenges. I understood many years ago that to do this, I need to learn more about people's behavior and choices, and about processes in policy and law. Therefore, I decided to cooperate outside my disciplinary boundaries with scholars from social science and the humanities who share my interest in the Arctic and polar regions. This broadening of my network coincided with my appointment as a leader for the polar science network at the University of Bergen. I extended the speaker base by for example inviting a speaker who talked about religious beliefs connected to the Aurora. I also have an enthusiastic drive for teaching and communicating climate dynamics and successfully ran an Arctic sustainability course suggesting solutions on renewable energy on Svalbard over three summers. I have been leading large research projects for more than a decade with robust scientific outputs.

## Publication statistics

- 60 papers in international peer reviewed journals as of May 2023. h-index of 36 (Google Scholar).
- Contributing author in the *Special Report on the Ocean and Cryosphere in a Changing Climate* (SROCC), 2019. IPCC Special Report on *Ocean and Cryosphere Climate Change*. Summary for Policy Makers. Chapter 3: *Polar Regions*: Coordinating Lead Authors: Michael Meredith & Martin Sommerkorn. 11 Lead Authors.
- Contributing author in Arctic Monitoring and Assessment Programme, 2017. *Snow, Water, Ice and Permafrost in the Arctic (SWIPA) 2017*. Arctic Monitoring and Assessment Programme (AMAP), Oslo, Norway. xiv + 269 pp. Chapter 5.
- Over 100 public outreach stories in Norwegian and International press, see personal web page.

## 1. Ten influential papers

In my field senior authors are the first authors. \* my PhD student was first author

1. **L.H. Smedsrud**, A. Brakstad, E. Madonna, M. Muilwijk, S. K. Lauvset, C. Spensberger, A. Born, T. Eldevik, H. Drange, E. Jeansson, C. Li, A. Olsen, Ø. Skagseth, D. A. Slater, F. Straneo, K. Våge & M. Årthun. Nordic Seas Heat Loss, Atlantic Inflow, and Arctic Sea Ice cover over the last century *Reviews of Geophysics* (2022), 59, e2020RG000725, doi: 10.1029/2020RG000725
2. Hoke, W., T. Swierczynski, P. Braesicke, K. Lochte, L. Shaffrey, M. Drews, H. Gregow, R. Ludwig, J. E. Ø. Nilsen, E. Palazzi, G. Sannino, **L. H. Smedsrud**, and the ECRA network (2019). The European Climate Research Alliance (ECRA): Collaboration from bottom-up, *Advances in Geosciences*, 46, 1–10, doi.org/10.5194/adgeo-46-1-2019
3. Onarheim\*, I., T. Eldevik, **L. H. Smedsrud**, and J. Stroeve (2018) Seasonal and regional manifestation of Arctic sea ice loss, *J. Climate*. 31, 12, 4917-4932, doi:10.1175/JCLI-D-17- 0427.1
4. **L. H. Smedsrud**, M. H. Halvorsen, J. C. Stroeve, R. Zhang, and K. Kloster (2017) Fram Strait sea ice export variability and September Arctic sea ice extent over the last 80 years. *The Cryosphere*, 11, 65-79, 2017, <http://www.the-cryosphere.net/11/65/2017/> doi:10.5194/tc-11-65-2017
5. Onarheim\*, I., T. Eldevik, M. Årthun, R.B. Ingvaldsen, **L. H. Smedsrud** (2015) Skillful prediction of Barents Sea ice cover, *Geophysical Research Letters* 42 (13), 5364-5371
6. Onarheim\*, I. H., **L. H. Smedsrud**, R. B. Ingvaldsen, and F. Nilsen (2014). Loss of sea ice during winter north of svalbard. *Tellus A* 66 (23933), doi:10.3402/tellusa.v66.23933.
7. Zygmontowska\*, M., P. Rampal, N. Ivanova, and **L. H. Smedsrud** (2014) Uncertainties in arctic sea ice thickness and volume: new estimates and implications for trends. *The Cryosphere* 8, 705 – 720.
8. Langehaug, H. R. and. Geyer, F., **L. H. Smedsrud**, and Y. Gao (2013). Arctic sea ice decline and ice export in the CMIP5 historical simulations. *Ocean Modelling* 71, 114–126. doi: 10.1016/j.ocemod.2012.12.006.

9. **Smedsrud, L. H.**, I. Esau, R. B. Ingvaldsen, T. Eldevik, P. M. Haugan, C. Li, V. S. Lien, A. Olsen, A. M. Omar, O. H. Otterå, B. Risebrobakken, A. B. Sandø, V. A. Semenov, and S. Sorokina (2013). The role of the Barents Sea in the Arctic climate system. *Reviews of Geophysics* 51, doi:10.1002/rog.20017.
10. Årthun\*, M., T. Eldevik, **L. H. Smedsrud**, R. Ingvaldsen, and Ø. Skagseth (2012). Quantifying the influence of Atlantic heat on Barents Sea ice variability and retreat. *J Climate* 25, 4736-4743. doi:10.1175/JCLI-D-11-00466.1.

## **2. Organisation of international scientific and science for policy conferences in the field of the applicant**

**2019 Ice-Ocean Workshop at Scripps Institute of Oceanography**, UC San Diego, USA. Main organizer, in collaboration with the Norwegian Embassy. 35 international delegates.

**2019 + 2017 European Climate Research Alliance (ECRA) General Assembly**, Arctic Climate Programme Chair, 60 participants, Brussels, Belgium.

**2019 World Climate Research Programme: Townhall Meeting: *Bridging Science and Society***, 100 participants (for example city planners, climate experts, wine farmers), San Francisco, USA. Part of American Geophysical Union Fall Meeting – science education and communication.

**2018 International forum for Arctic Observations and Modelling Synthesis** conference. Local host, 80 international participants, Bergen Norway.

## **3. Invited presentations to international conferences or international advanced schools**

**2020:** “Arctic Climate Change in a Nutshell” Engineering & Climate Change (Stanford, USA)

**2019:** “Arctic Climate Change – Probably the most visible consequence of Global Warming” invited speaker European Climate Research Alliance (ECRA) General Assembly (Brussels, Belgium)

**2018:** “Arctic Sea ice loss – causes and consequences” Summer School: Natural Resource Management in a Rapidly Changing Arctic (Fairbanks, Alaska, USA)

**2017:** “Arctic Sea ice loss – two distinct patterns” Keynote speaker EGU (Wien, Austria)

**2015:** “The Barents Sea Ocean cooler” Forum for Arctic Modelling and Observation Synthesis School (FAMOS, Cape Cod, USA)

## **4. Major contributions to the early careers of excellent researchers**

My PhD students have all finished their work on time and found positions in academia or industry after their PhD. I mentored them to take Post Doc periods abroad (for example at British Antarctic survey) and supported them to start permanent jobs in academia. Two of my former PhDs have now permanent positions at research centers, one has a permanent position at the Geophysical institute. One other student started a successful career as renewable energy consultant, and one works in the navy. I also actively support my MSc students to get into doctoral training or secure a job in industry.