

Curriculum vitae for Dorte Søgaaard Schrøder

Dorte Søgaaard Schrøder
Hundige Strandvej 102B
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c/o Postboks 570, Greenland Climate Research Centre
Date of birth 02.02.81
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Recommendations/References: Attached
Languages: Danish (mother tongue), English (fluent)



EDUCATION

- 01.02.2010 – 21.11.2014** **Ph.d student at Greenland Institute of Natural Resources**, Greenland Climate Research Centre in Nuuk (Supervisor: Professor Søren Rysgaard and Ronnie N Glud) "Biological activity and calcium carbonate dynamics in Greenland sea ice".
- To expand the knowledge of the spatial and temporal events controlling the inorganic carbon dynamics in sea ice.
 - To assess the significance of calcium carbonate precipitation in different types of sea ice i.e. warm Subarctic sea ice, cold High Arctic sea ice, sea ice near the Greenland Ice Sheet, frost flowers and brine ski, and its possible role as sink or source for atmospheric CO₂.
 - To examine the factors controlling the sea ice algal and bacterial growth.
 - To investigate the influence of biotic and abiotic parameters for the air-sea CO₂ flux in a Subarctic fjord.
 - To assess the inter-annual and seasonal variation in biotic processes in a Subarctic fjord.
- Aug. 2007 - Jan. 2009** **MSc. student at Greenland Institute of Natural Resources**, Greenland Climate Research Centre in Nuuk (Supervisor: Professor Søren Rysgaard, Per Juel Hansen and Ronnie N Glud) "O₂ dynamics in artificial and natural sea ice: influence by algae, bacteria and physical processes"
- General marine ecology and microbiology, sea ice dynamics, climate change, biotic and abiotic processes, organic and inorganic nutrient dynamics
- Jan. 2006 - Apr. 2006** **BSc. Microbiology at KU NAT.** "Extremophilic bacteria from Ikka-columns in SW Greenland".
- General microbiology, molecular microbiology, enzyme production and activity assays, *Alishewanella* spp., *Rheinheimera* spp.
- Aug. 2005 – Jan. 2006** **Systembiology, DTU.** Courses approved: Human Biology and Human Microbiology.
- 2003 – 2005** **Department of Biology**, Faculty of Life Sciences, University of Aarhus, Studying two years of the BSc. degree of Biology.

WORK EXPERIENCE

- Okt 2016 – **Post. doc and Education Coordinator at Ilisimatusarfik and at The Greenland Institute of Natural Resources**
- July 2015 – Okt.2016 **Maternity leave**
- July 2014 – July 2015 **Education Coordinator** the aim is to enhance the skills in Arctic biology and environmental and health science and to strengthening the knowledge of the challenges and opportunities posed by climate change. We started offering five Arctic courses at master level in 2015 for student from Greenland, Denmark and Canada with a background in natural science/engineering in the area of environmental science, biology and chemistry at the Greenland Institute of Natural Resources. Furthermore, we aim to offer five courses in health science at master level in autumn 2016 for student from Greenland, Denmark and Canada with a background in Nursing, Health Research and Science, Social science and Medicine at the University of Greenland.
- Jan. 2013 – Nov. 2013 **Maternity leave**
- Jan. 2011- Okt. 2011 **Maternity leave**
- Jan. 2009 – Jan. 2010 **Research Scientist** at the Greenland Institute of Natural Resources. Responsible for the monthly sampling and laboratory analysis for the marine monitoring program, Nuuk Basis, assisted with data collection and analysis for the terrestrial monitoring program, BioBasis.
- General marine ecology, biological and physical oceanography, limnic and terrestrial ecosystems
- 2006 **Teaching assistant** at the Village of Natural Sciences - a part of the Danish Science Festival 2006

SKILLS

General:

- I am educated *cand.scient.* with specialty in Arctic marine ecosystems and have a Ph.D degree in Arctic biogeochemistry.
- I have a thorough understanding of the developing oil and mineral exploration in Greenland and I work close with the new department of Environment and Mineral Resources at the Greenland Institute of Natural Resources.
- I have worked at all levels of an experimental workflow; from planning, implementation, troubleshooting, and validation - to analysis, and reporting/publishing of results.
- I am motivated, and have strong experience in communication with all types of people and work in cross-functional project teams. I have solid experience in the coordination and planning of various types of projects and tasks, as well as in supervision and motivation of laboratory technicians, theme project-, undergraduate- and graduate students.
- I am diligent, responsible, well-organized, quality-focused, energetic and a very social person.
- Fluent in written and spoken English and Danish.

Professional:

- **Marine Ecology techniques:** CTD, primary and bacterial production, inorganic nutrients (silicate, phosphate, nitrate, ammonium), dissolved organic carbon and nitrogen, dissolved, total inorganic carbon, total alkalinity, O₂, δO¹⁸, plankton row.

REFEREE ACTIVITY

- Natural Sciences and Engineering Research Council of Canada (NSERC)
- Geophysical Research Letters

RESEARCH CRUISES AND STAYS ABROAD

2012 (10 month)	Godthåbsfjord project: Monitoring different parameters at three stations in the fjord to describe the influence of glacier runoff and biology on the $p\text{CO}_2$ dynamic in the fjord. This project was performed with input from a broad field of scientist from the Greenland Climate Research Center, GCRC.
2012 (14 days)	Field course at Arctic station in Qeqertarsuaq, NW Greenland: Team of PhD students participated in a field course where the main goal was to describe the fate of the Arctic spring bloom in a peer reviewed paper.
2012 (21 days)	Sea ice campaign in Daneborg, NE Greenland. Team of international scientist researches sea ice dynamics (21 days).
2010 (4 month)	Seasonal sea ice campaign in Kapisillit, SW Greenland. Measurement of the temporal and spatial variability of abiotic and biotic parameters in a Subarctic fjord sea ice.
2010 (8 days)	Sea ice campaign in Kapisillit, SW Greenland: Team of international scientist collaborating to answer questions about the sea ice related CO_2 pump.
2009 (Monthly sampling)	The MarinBasis monitoring program, SW Greenland. Monthly sampling of biotic and abiotic parameters in a glacier influenced fjord (from 2005 -)
2009 (2 days)	Assistant on BioBasis on Nuukbasic, SW Greenland: Monitoring different climate parameters on land and in two freshwater lakes.
2008 (3 month)	Seasonal sea ice campaign in Malene Bight, SW Greenland. Biotic and abiotic processes in Subarctic sea ice.
2008 (2 days)	Seasonal sea ice campaign in Kobbefjord, SW Greenland. Biotic and abiotic processes in Subarctic sea ice.

BIBLIOGRAPHIC DATA:

- 13 published published peer review papers, 199 citations, H-factor 10 (September 2017)
- 2 reports (non-reviewed)
- 3 outreach products

PUBLICATIONS

Peer reviewed

Accepted:

1. Juul-Pedersen T, Arendt KE, Mortensen J, Blicher ME, Søgaard DH, Rysgaard S (2015) Seasonal and interannual phytoplankton production in a sub-arctic fjord (Godthåbsfjord) connected to the Greenland Ice Sheet. *Mar Ecol Prog Ser* 524:24-38, doi:10.3354/meps11174
2. Barber DG, Ehn JK, Pucko M, Rysgaard S, Papakyriakou T, Deming J, Galley R, Søgaard DH (2014) Frost flowers on young Arctic sea ice: The climatic, chemical and microbial significance of an emerging ice type. *Journal of Geophysical Research: Atmospheres* 119:593-612, doi:10.1002/2014JD021736
3. Geilfus N-X, Galley R, Hare A, Wang F, Søgaard DH, Rysgaard S (2013) Ikaite and gypsum crystals observed in an experimental sea ice facility (SERF) and in newly formed sea ice NE Greenland. *Geophysical Research Letter*. 40:1-6, doi:10.1002/2013GL058479
4. Sørensen LS, Jensen B, Glud R, McGinnis DF, Sejr M, Sievers J, Søgaard DH, Tison JL, Rysgaard S (2014) Parameterization of atmosphere-surface exchange of CO₂ over sea ice. *The Cryosphere* 8:853-866, doi:10.5194/tc-8-853-2014
5. Kaartokallio H, Søgaard DH, Norman L, Rysgaard S, Tison JL, Delille B, Thomas DN (2013). Short-term variability in bacterial abundance, cell properties, and incorporation of leucine and thymidine in subarctic sea ice. *Aquatic Microbial Ecology* 71:57-73, doi:10.3354/ame01667
6. Søgaard DH, Thomas DN, Rysgaard S, Glud RN, Norman L, Kaartokallio H, Juul-Pedersen T, Geilfus NX (2013). The relative contributions of biological and abiotic processes to the carbon dynamics in subarctic sea ice. *Polar Biol*, doi: 10.1007/s00300-013-1396-3
7. Rysgaard S, Søgaard DH, Cooper M, Pućko M, Lennert K, Papakyriakou TN, Wang F, Geilfus NX, Glud RN, Ehn J, McGinnis DF, Attard K, Sievers J, Deming J, Barber D (2013) Ikaite crystal distribution in winter sea ice and implication for CO₂ system dynamics. *The Cryosphere* 7:707-718, doi: 10.5194/tc-7-707-2013
8. Rysgaard S, Mortensen J, Juul-Pedersen T, Sørensen LL, Lennert K, Søgaard DH, Arendt KE, Blicher ME, and Sejr MK (2012) High air-sea CO₂ uptake rates in nearshore and shelf areas of Southern Greenland: Temporal and spatial variability. *Marine Chemistry* 128-129: 26–33
9. Long M.H, Koopmans D, Berg P, Rysgaard S, Glud R, Søgaard DH (2011) Oxygen exchange and ice melt measured at the ice-water interface by eddy correlation. *Biogeosciences*. 9:1957-1967, doi:10.5194/bg-9-1-2012
10. Søgaard DH, Hansen PJ, Rysgaard S, Glud RN (2011). Growth limitation of three Arctic sea ice algae: effect of salinity, pH and inorganic carbon availability. *Polar Biol* DOI: 10.1007/s00300-011-0976-3
11. Søgaard DH, Kristensen M, Rysgaard S, Glud RN, Hansen PJ, Hilligsøe KM (2010) Autotrophic and heterotrophic activity in Arctic first-year sea ice: seasonal study from Malene Bight, SW Greenland. *Mar Ecol Prog Ser* 419:31-45
12. Meire L, Søgaard DH, Mortensen J, Meysman D, Soetaert K, Juul-Pedersen T, Blicher M, Rysgaard S, Sejr M, Arendt K, Glud RN (2015) Glacial meltwater and primary production are drivers of strong CO₂ uptake in fjord and coastal waters adjacent to the Greenland Ice Sheet. *Biogeosciences* 12:2347-2363, doi:10.5194/bg-12-2347-2015
13. Sievers J, Sørensen LL, Papakyriakou T, Sejr M, Søgaard DH, Barber D, Rysgaard S (2015) Winter observations of CO₂ exchange between sea ice and the atmosphere in a coastal fjord environment. *The Cryosphere Discuss* 9:45-75, doi:10.5194/tcd-9-45-2015

Unpublished publication:

Søgaard DH, Glud RN, Rysgaard S, Jody Deming (in prep) A comparative study of biotic- and abiotic-induced oxygen and inorganic carbon dynamics in meter thick winter and young thin polynya ice. *Mar Ecol Prog Ser*

Publications (Rapports)

1. Thomas Juul-Pedersen, Søren Rysgaard, Paul Batty, John Mortensen, Anja Retzel, Rasmus Nygaard, AnnDorte Burmeister, Dorte H. Søgaard, Winnie Martinsen, Mikael K. Sejr, Martin E. Blicher, Dorte Krause-Jensen, Peter B. Christensen, Núria Marbà, Birgit Olesen, Aili L. Labansen, Lars M. Rasmussen, Lars Witting, Malene Simon and Fernando Ugarte (2010) *The MarinBasis*

programme. In: Jensen LM and Rasch M (eds.) Nuuk Ecological Research Operations, 3rd Annual Report, 2009 National Environmental Research Institute, Aarhus University, Denmark.

2. Thomas Juul-Pedersen, Kristine E. Arendt, John Mortensen, Søren Rysgaard, Dorte H Sjøgaard, Anja Retzel, Rasmus Nygaard, AnnDorte Burmeister, Mikael K. Sejr, Martin E. Blicher, Dorte Krause-Jensen, Núria Marbà, Anissa Merzouk, Aili L. Labansen, Ole Geertz-Hansen, Tenna Boye and Malene Simon(2012) The MarinBasis programme. In: Jensen LM and Rasch M (eds.) Nuuk Ecological Research Operations, 5nd Annual Report, 2012 National Environmental Research Institute, Aarhus University, Denmark.

CONFERENCES AND WORKSHOPS

- 2014 Climate change teaching in Greenland. Teaching about climate change to local high school teachers.
- 2012 PhD course in NW Greenland. Presentation of results from the sea ice campaign in Kapisillit, SW Greenland, Oral presentation.
- 2011 GCRC annual meeting in Svendborg.
- 2011 Mini-Conference. GreenCycles II Defrost. High latitude trace gas exchange: the role of ocean-land interactions.
- 2010 Workshop on sea ice processes at the Greenland Institute of Natural Resources in Nuuk.
- 2010 International Polar Year – Oslo Science Conference. Presentation of results from the sea ice campaign in Malene Bight, SW Greenland, oral presentation.
- 2011 Netice. Workshop to establish permanent collaboration in sea ice research between universities and research institutes across the Nordic region.

FUNDING RECEIVED

1. Sjøgaard DH (2015) Post doc stipendium - Ice mélange dynamics near the tidewater outlet glacier Jakobshavn Isbræ, NW Greenland. Funded by the Danish government – 1,197,749 DKK
2. Arendt KE, Sjøgaard DH (2014) Funding to a master student in Arctic Marine Ecology. Funded by the Government of Greenland (IIKNN) - 53,000 DKK
3. Sørensen LL, Sjøgaard DH, Iacozza J, Bøggild CE, Ackren M, Pelaudeix C, Fritt-Rasmussen J, Wegeberg S (2014) Education of next generation of Arctic researchers. Funded by Uarctic – 462,900 DKK
4. Koskinen H, Lauri A, Sørensen LL, Sjøgaard DH (2014) Climate change teaching in Greenland to local high schools. Funded by Nordplus Horizontal 2014 – 104,126 DKK
5. Sjøgaard DH, Blicher ME, Arendt KE, Juul-Pedersen T, Mortensen J (2012) Research project describing the influence of glacier run off and biological processes on the air-sea CO₂ flux. Funded by the Government of Greenland (IIKNN) – 100,000 DKK
6. Sjøgaard DH (2010) Travel grant. Funded by Netice – 30,000 DKK
7. Sjøgaard DH (2010) Grant for stay in Oslo. Funded by IPY Conference, APECS – 8,000 DKK

8. Sjøgaard DH (2010) PhD scholarship. Funded by the Commission for Scientific Research in Greenland (KVUG) – 2,015,779 DKK
9. Sjøgaard DH (2007) Master project grant. Funded by Oticon - 12,000 DKK
10. Sjøgaard DH (2007) Master project grant. Funded by Knud Højgaard Foundation - 17,000 DKK
11. Sjøgaard DH (2007) Travel grant – master project. Funded by Nordlys – 24,600 DKK

RELEVANT COURSES (MSc and Ph.d-level)

- Assistant professors course
- Environmental impact assessment (EIA) and strategic environmental assessment (SEA). University of Greenland (PhD level)
- Written and oral presentation skills for environmental scientists. RUS Roskilde (PhD level)
- Communication skills. University of Greenland (PhD level)

STATISTICS

Solid experience in basic statistical tests, using the program 'R', to evaluate experimental data.

PERSONAL REFERENCES

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