

# CURRICULUM VITAE

## PERSONAL INFORMATION

Name	Myriel Vredenburg (née Horn)
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Nationality	German
Date of Birth	6 <sup>th</sup> September, 1990
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## EDUCATION

[10/2018]	<b>Dr. rer. nat. (Magna cum laude)</b> University of Bremen Department Physics/Electrical Engineering <i>Doctoral Thesis: Freshwater variability in the Arctic Ocean and the subarctic North Atlantic</i> POLMAR Graduation Graduation as associated PhD candidate in ArcTrain
[10/2012-02/2015]	<b>Master of Science (1.2/A)</b> Marine Environmental Sciences (Focus: Physics/Modelling) Carl von Ossietzky University Oldenburg, Germany <i>Master Thesis: Frontal analysis in the shelf region of the western North Atlantic</i>
[08-12/2013]	<b>Semester abroad</b> From Mountain to Fjord (1.0/A) Høgskulen i Sogn og Fjordane, Sogndal, Norway
[10/2009-10/2012]	<b>Bachelor of Science (1.4/A)</b> University of Applied Sciences Bremerhaven, Germany Maritime Technology (Focus: Marine Measuring Technology) <i>Bachelor Thesis: Front-detection using Sea Surface Temperature data in the subpolar North Atlantic</i>
[09/2002-07/2009]	<b>German Abitur (2.1/B)</b> Gymnasium Raabeschule Heidberg, Braunschweig, Germany Special subjects: Mathematics, Physics, English

## PROFESSIONAL EXPERIENCE

[Since 08/2018]

### **Research associate/ Post-doctoral researcher**

Alfred Wegener Institute Helmholtz-Center for Polar and Marine Research, Dept. Physical Oceanography of Polar Seas  
NERC-BMBF funded CAO program: Project APEAR (“Advection Pathways of nutrients and key Ecological substances in the Arctic”)  
*-Investigation of changes in the large-scale Arctic Ocean hydrography, circulation and pathways of nutrients and key ecological substances*  
*-Involvement in the planning and organisation of oceanographic tasks during MOSAiC (1-year sea ice drift experiment with RV Polarstern in the Central Arctic Ocean) and analysis of resulting hydrographic observations*  
*-Data synthesis and intensive quality control of Arctic Ocean hydrography and nutrients observations for publication in a data product*

[2019, 2021]

### **Peer-reviewer for scientific journals**

Atmospheric Science Letters, Frontiers in Marine Science

[02/2015-07/2018]

### **Research associate and PhD candidate**

Alfred Wegener Institute Helmholtz-Center for Polar and Marine Research, Dept. of Physical Oceanography of Polar Seas  
BMBF projects RACE and RACE II (“Regional Atlantic Circulation and global change”)  
*-Investigation of salt/freshwater changes in the Arctic Ocean and North Atlantic and atmospheric drivers*

[2011-2014]

### **Various student assistant jobs**

University of Bremen – Institute for Environmental Physics, Dept. Oceanography  
*-Participation in various expeditions with RV Maria S. Merian*  
*-Analysis of CTD/LADCP data in relation to fronts and eddies in the western subpolar North Atlantic Front-detection in the subpolar North Atlantic using satellite observations of Sea Surface Temperature*  
Carl von Ossietzky University Oldenburg – ICBM, Dept. Marine Sensors  
*-Empirical Orthogonal Function analysis of CDOM data*  
University of Bremen – Marum, Dept. Marine Technology  
*-Assistance in constructing parts of a Hybrid-ROV*  
*-Assistance in building a transmissometer network in the German North Sea*  
imare - Institute for Marine Resources GmbH  
*-Assistance in hosting the Conference “Marine Resources and Beyond”*

## TRAINING

- [10/2018] 5-days workshop on “Time series analysis” by Dr. Jonathan Lilly, Theiss Research, La Jolla, California
- [01/2018] 1-days workshop on “Introduction to LaTeX” by Prof. Dr. Dieter Wolf-Gladrow, Alfred Wegener Institute Helmholtz-Center for Polar and Marine Research, Bremerhaven, Germany
- [11/2017] 2-days workshop on “Leadership Skills” by Sabine Lerch, Training Coaching Mediation, Windach, Germany
- [06/2017] 2-days workshop on “The Art of Self-Presenting” by Dr. Saskia Schottelius, Communication training, Bonn, Germany
- [02/2017] 1-day workshop on “Project Management Basics” by Fischer & Friends, Ovelgoenne, Germany
- [11/2016] 3-days workshop on “How to publish in peer-reviewed journals” by Tress & Tress, Munich, Germany
- [06/2016] 2-days workshop on “Self- and Time Management” by Sabine Lerch, Training Coaching Mediation, Windach, Germany

## SEA-GOING EXPERIENCE

- [08-09/2018] **RV Tryoshnikov – Cruise TRANSDRIFT XXIV (lead: V. V. Ivanov & H. Kassens)**  
Siberian shelves & Central Arctic Ocean (7 weeks)  
*Shared responsibility for Underway-CTD measurements; Operating a microstructure probe for turbulence measurements; Recovery and deployment of several moorings; launching several buoys on/under the sea ice*
- [09-10/2016] **RV Polarstern – Cruise PS-101 (lead: A. Boetius)**  
Central Arctic Ocean (6 weeks)  
*Responsibility for Salinometer measurements, different CTD systems and water sampling for CFC, Tritium, Helium and Salinity measurements; Operating the CTD/LADCP-rosette; Recovery of two moorings*
- [08-10/2015] **RV Polarstern – Cruise PS-94 (lead: U. Schauer)**  
Central Arctic Ocean (8 weeks)  
*Responsibility for the multibeam-system and CFC water sampling; Operating different CTD systems; Turbulence measurements under the ice; Launching ice buoys; Deployment of two moorings*
- [05-06/2014] **RV Maria S. Merian – Cruise MSM-38 (lead: D. Kieke)**  
Subpolar North Atlantic (4 weeks)  
*Operating the CTD/LADCP-rosette; Water sampling; Recovery and deployment of moorings*

- [04-05/2013] **RV Maria S. Merian – Cruise MSM-27 (lead: D. Kieke)**  
Newfoundland Basin (2.5 weeks)  
*Operating the CTD/LADCP-rosette; Water sampling; Recovery and deployment of moorings*
- [06-07/2012] **RV Maria S. Merian – Cruise MSM-21/2 (lead: D. Kieke)**  
Subpolar North Atlantic (5 weeks)  
*Operating the CTD/LADCP-rosette; Water sampling; Recovery and deployment of moorings*

## TEACHING

- [2021] **Invited expert at Polar Oceanography Workshop**  
Potsdam Summer School  
*Attending Group discussions on the topic “The Oceans – from Coastline to High Seas” as an Expert for “The Cryosphere”*
- [2010-2012] **Tutor in physics** (2h/week)  
University of Applied Sciences Bremerhaven  
*Teaching 15 to 80 students in physics, preparation of exercises, assistance in reviewing the examine*

## INTERNATIONAL CONFERENCES

- [05/2022] **EGU General Assembly, hybrid, Vienna, Austria**  
Talk: “Upper Arctic Ocean hydrography during the year-round MOSAiC expedition in the context of historical observations”
- [05/2022] **ASOF Meeting, hybrid, Hafnarfjörður, Iceland**  
Talk: “Year-round upper Arctic Ocean hydrography during the MOSAiC ice drift experiment in the context of historical observations”
- [04/2022] **MOSAIC Science Conference, hybrid, Potsdam, Germany**  
Talk: “Upper Arctic Ocean hydrography during MOSAiC in the context of historical observations”
- [11/2021] **CAO Annual Science Meeting, virtual**  
Talk: “New Unified Arctic Ocean hydrography and biogeochemical data base: Identifying pathways of nutrients”
- [04/2021] **vEGU General Assembly, virtual**  
Talk: “Advective pathways of nutrients and key ecological substances in the Arctic”
- [05/2020] **EGU General Assembly, virtual**  
Talk: “Variability of Lagrangian pathways and coherent structures in the Arctic and its effect on the predictability of MOSAiC drift and material transport” (co-author)

- [04/2019] **ASOF Meeting, Copenhagen, Denmark**  
Talk: "Freshwater/salt fluxes and variability in the Arctic Ocean and subarctic North Atlantic"
- [04/2019] **EGU General Assembly, Vienna, Austria**  
Talk: "Drivers of freshwater/salt (co)variability in the Arctic Ocean and subarctic North Atlantic"  
Co-chair of the session: "OS1.2 - Changes in the Arctic Ocean, sea ice and subarctic seas systems: Observations, Models and Perspectives"
- [01/2019] **CAO Annual Science Meeting, Birmingham, UK**  
Talk: "Advective pathways of nutrients and key ecological substances in the Arctic"  
Co-convenor of the session: "ECR workshop"
- [06/2018] **POLAR Science Meeting, Davos, Switzerland**  
Poster: "Decadal covariability of Arctic and subarctic North Atlantic freshwater content"
- [04/2018] **EGU General Assembly, Vienna, Austria**  
Poster: "Decadal link of Arctic and subarctic North Atlantic freshwater variability" (first author), presented by co-author
- [09/2017] **YOUMARES 8, Kiel, Germany**  
Convener of the session: "The physics of the Arctic and Subarctic oceans in a changing climate"
- [05/2017] **National Oceanography Center POETS Seminar, Southampton, UK**  
Invited talk: "Linked freshwater variability of the Arctic Ocean and North Atlantic"
- [04/2017] **EGU General Assembly, Vienna, Austria**  
Poster #1: "Observed covariability of Arctic and North Atlantic freshwater content" (first author), presented by co-author  
Poster #2: "Under-ice turbulent microstructure and upper ocean vertical fluxes in the Makarov and Eurasian basins, Arctic Ocean, during late spring and late summer / autumn in 2015" (co-author)
- [03-04/2017] **Arctic Science Summit Week, Prague, Czech Republic**  
Poster: "Observed covariability of Arctic and North Atlantic freshwater content" (first author), presented by co-author
- [03/2017] **ASOF Meeting, Sopot, Poland**  
Talk: "Observed covariability of Arctic and North Atlantic freshwater content"
- [02/2017] **US CLIVAR Workshop "Arctic Change and its Influence on Midlatitude Weather and Climate", Washington, DC, USA**  
Poster: "North Atlantic soon flooded by Arctic freshwater?"

- [04/2016] **EGU General Assembly, Vienna, Austria**  
Poster #1: "Multidecadal link between Arctic Ocean and Subpolar North Atlantic freshwater anomalies" (first author), presented by co-author  
Poster #2: "Extensive under-ice turbulence microstructure measurements in the central Arctic Ocean in 2015" (co-author)
- [02/2016] **Ocean Sciences Meeting, New Orleans, LA, USA**  
Invited Poster: "Freshwater variability in the Arctic Ocean and Subpolar North Atlantic: a Comparison from the 1990s to Present"
- [11/2015] **FAMOS Meeting, Hyannis, MA, USA**  
Poster: "Link between multidecadal freshwater anomalies in the Arctic Ocean and the subpolar North Atlantic"

## PEER-REVIEWED PUBLICATIONS

Campos, C. & **Horn, M.** (2018)\*. The Physical System of the Arctic Ocean and Subarctic Seas in a Changing Climate. In: *Jungblut, S., Liebich, V., Bode, M. (eds) YOUMARES 8–Oceans Across Boundaries: Learning from each other* (pp. 25-40). Springer, Cham. [https://doi.org/10.1007/978-3-319-93284-2\\_3](https://doi.org/10.1007/978-3-319-93284-2_3). (\* **shared first authorship**)

Schulz, K., [...], **Vredenburg, M.** (2021). On the along-slope heat loss of the Boundary Current in the Eastern Arctic Ocean. *Journal of Geophysical Research: Oceans*, 126.2, e2020JC016375. <https://doi.org/10.1029/2020JC016375>.

Rabe, B., [...], **Vredenburg, M.**, et al. (2022). Overview of the MOSAiC expedition: Physical oceanography. *Elementa: Science of the Anthropocene*, 10 (1): 00062. <https://doi.org/10.1525/elementa.2021.00062>.

Bienhold, C., [...], **Vredenburg, M.**, et al. (in revision). Effects of sea ice retreat and ocean warming on the Laptev Sea continental slope ecosystem (1993 vs 2012). *Frontiers in Marine Sciences*.

Kong, X., [...], **Vredenburg, M.**, et al. (under review). The composition of chromophoric dissolved organic matter in Central Arctic surface waters during the MOSAiC expedition depends on regional rather than seasonal differences. *Elementa: Science of the Anthropocene*.

## OUTREACH

**Horn, M.** (2017). "Pot hitting in the Arctic Ocean – in search of hydrothermal vents", ArcTrain Blog: <https://arctrain.de/pot-hitting-in-the-arctic-ocean-in-search-of-hydrothermal-vents/>

## GRANTS AND AWARDS

[04/2019]	Travel support for attending the ASOF Meeting, Copenhagen, Denmark (585 €)
[02/2017]	Travel support for attending the US CLIVAR Workshop, Washington, DC (694 \$)
[11/2015]	Travel support for attending the FAMOS Meeting, Hyannis, MA (1690 €)
[08-12/2013]	ERASMUS Scholarship for semester abroad (1800 €)
[08/2013]	Mobility grant of the University of Oldenburg for semester abroad (500 €)
[07/2009]	Award of the German Physical Society for outstanding performance in the school subject physics (1 year membership for free)

## OTHER SKILLS

<b>Languages</b>	German:	mother tongue
	English:	fluent
	Italian:	elementary
	Latin:	elementary
	Norwegian:	beginner
<b>Computing</b>	MS Word/Excel/PowerPoint:	advanced
	MATLAB:	advanced
	LaTeX:	intermediate
	Ocean Data Viewer:	intermediate