

# ALEXANDRA JAHN

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## ACADEMIC APPOINTMENTS

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- 01/2015 –** **Assistant Professor**, Dept. of Atmospheric & Oceanic Sciences, CU Boulder, USA  
**Fellow**, Institute of Arctic and Alpine Research, CU Boulder, USA  
On parental leave Fall 2015 and Spring 2020
- 2012 – 2014** **Project Scientist 1**, National Center for Atmospheric Research (NCAR), USA
- 2010 – 2012** **Advanced Study Program Postdoctoral Fellow**, NCAR, USA

## UNIVERSITY EDUCATION

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- 2004–2010** **PhD**, Dept. of Atmospheric & Oceanic Sciences at McGill University, Canada
- 1998–2004** **Diplom**, Dept. of Meteorology at the Free University of Berlin, Germany. Thesis work at Potsdam Institute for Climate Impact Research, Germany. Master of Science equivalent, includes undergraduate studies without separate degree
- 2001/02** **Exchange student**, Atmospheric Sciences, University of Washington, Seattle, USA

## FUNDED PROPOSALS (\$7.07 MILLION TOTAL, \$2.16 MILLION DIRECTLY TO JAHN AT CU)

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- 2019, NSF** **CAREER: Reducing the projection uncertainty for Arctic sea ice loss**, PI: **A. Jahn**, 2019–2024, \$819,991.
- 2019, NSF** **The Arctic Observing Network: Sustained Observations at the Davis Strait Gateway**, PI: C. Lee (UW), co-PIs: **A. Jahn**, Jason Gobat (UW), Kathleen M. Stafford (UW), collaborator: P. Myers (Univ. Alberta), 2019–2024, \$3,669,176, of that \$385,799 to Jahn.
- 2019, NSF** **Integrating Eocene Shark Paleoecology and Climate Modeling to reveal Southern Ocean Circulation and Antarctic Glaciation**, PI: S. Kim (UC - Merced), co-PIs: **A. Jahn**, M. Huber (Purdue), H. Scher (USC), 2019–2022, \$849,376, of that \$78,056 to Jahn.
- 2019, NASA** **Using a Satellite Simulator to Better Evaluate and Understand Arctic Sea Ice Melt**, Future Investigators in NASA Earth and Space Science and Technology (FINESST)<sup>a</sup>, PI: **A. Jahn**, Future Investigator: A. Smith, 2019–2021, \$90,000.
- 2018, NSF** **Timing and Paleoceanographic Impacts of the Onset of Arctic-Baffin Bay Throughflow**, PI: A. Jennings (CU), co-PIs: **A. Jahn**, J. Andrews (CU), J. Sepulveda (CU), T. Marchitto (CU), 2018–2021, \$668,325 to CU, of that \$133,666 to Jahn.
- 2016, NSF** **Carbon Isotope and geotracer-enabled Transient Climate Evolution of the Deglacial Ocean (C-iTRACE-O)**, PI: **A. Jahn**, co-PI: Z. Liu (Ohio State), 2016–2021, \$559,995, of that \$301,994 to Jahn.
- 2015, NSF** **Assessing the simulated Arctic freshwater system in CMIP5 models, the CESM large ensemble, and forced simulations**, PI: **A. Jahn**, co-PIs: M. Holland (NCAR), B. Tremblay (Columbia Univ), 2015–2020, \$411,251, of that \$351,004 to Jahn.

## FELLOWSHIPS AND AWARDS (\$244,500 TOTAL TO JAHN, EXCLUDING CAREER)<sup>b</sup>

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- 2019–2024** **NSF-CAREER award**
- 2012** **Christine Mirzayan Science & Techn. Policy Fellowship, National Academies**  
\$8500 in support over 3 months.

<sup>a</sup>FINESST supports graduate student designed and performed research projects, with a research mentor as PI.

<sup>b</sup>CAREER funding is included in the total under proposals

- 2010–2012**     **Advanced Study Program Postdoctoral Fellowship at NCAR**  
 Proposal-based fellowship for two years of self-directed postdoctoral research. \$150,000.
- 2006–2008**     **PhD Fellowship, German National Academic Foundation**  
 Proposal-based PhD fellowship from the German National Academic Foundation (Studienstiftung des deutschen Volkes). \$55,000.
- 2001–2002**     **Fulbright Travel Award and Exchange Fellowship from FU Berlin**  
 For studies at the University of Washington in Seattle, USA. \$15,000.
- 2001–2004**     **Student Fellowship, German National Academic Foundation**  
 Merit-based fellowship from the German National Academic Foundation (Studienstiftung des deutschen Volkes). \$16,000.

SUPERCOMPUTER GRANTS AWARDED (8.85 MILLION CORE HOURS TOTAL)

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- 2019**            **NCAR-CISL**, 100,000 core hours on NSF’s Cheyenne supercomputer for the project “CAREER: Reducing the projection uncertainty for Arctic sea ice loss”, 2019–2024, PI: **A. Jahn**.
- 2019**            **NCAR-CISL**, 200,000 core hours on NSF’s Cheyenne supercomputer for the project “Integrating Eocene Shark Paleoecology and Climate Modeling to reveal Southern Ocean Circulation and Antarctic Glaciation”, 2019–2022, PI: **A. Jahn**.
- 2018**            **NCAR-CISL**, 1.3 million core hours on NSF’s Cheyenne supercomputer for the project “Paleoceanographic Impacts of the Onset of Arctic-Baffin Bay Throughflow”, 2018–2021, PI: **A. Jahn**.
- 2016**            **NCAR-CISL**, 3.2 million core-hours on NSF’s Yellowstone & Cheyenne supercomputers for the project “Carbon Isotope and geotracer-enabled ocean simulations for present-day and the Last Glacial Maximum”, 2016–2021, PI: **A. Jahn**.
- 2016,17,18**     **NCAR-CISL**, 20,000 core hour classroom allocations on NSF’s Yellowstone & Cheyenne supercomputers in the fall semesters of 2016 & 2017 & 2018, to teach students in “Introduction to Physical Oceanography” how to use a supercomputer and run CESM, PI: **A. Jahn**.
- 2015**            **NCAR-CISL**, 3.5 million core hours on NSF’s Yellowstone & Cheyenne supercomputers for the project “Mechanisms leading to synchronous snowline depression throughout the northern North Atlantic during the Late Holocene”, 2015–2018, PI: G. Miller, co-PI: **A. Jahn**.
- 2015**            **NCAR-CISL**, 528,000 core hours on NSF’s Yellowstone & Cheyenne supercomputers for the project “Using Arctic freshwater tracers to assess changes and variability of the Arctic freshwater budget”, 2015-2020, PI: **A. Jahn**.

REFEREED PUBLICATIONS

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**40 total published**

**7 under review**

**10 first authored by Jahn, 5 first authored by direct advisees of Jahn**

**ResearcherID: C-6545-2008, ORCID iD:0000-0002-6580-2579**

**Web of science** h-index = 23; 1,617 citations.

**Google Scholar** h-index = 26; 2,328 citations.

<sup>1</sup> = Jahn as primary advisor for student or postdoc

<sup>2</sup> = Jahn as secondary advisor/mentor for student or postdoc

## Published/Accepted

40. **2021:** He, C., Z. Liu, B. L. Otto-Bliesner, E.C. Brady, C. Zhu, R. Tomas, P.U. Clark, J. Zhu, **A. Jahn**, S. Gu, J. Zhang, J. Nusbaumer, D. Noone, H. Cheng, Y. Wang, M. Yan, Y. Bao, Hydroclimate footprint of pan-Asian monsoon water isotope during the last deglaciation, *Scientific Advances*, 7, doi:10.1126/sciadv.abe2611.
39. **2020:** **Jahn, A.** and **R. Laiho**<sup>1</sup>, Forced Changes in the Arctic Freshwater Budget Emerge in the Early 21st Century, *Geophysic. Res. Lett.*, 47, doi:10.1029/2020GL088854, *Press release*, *Press coverage*, Nature Climate Change Research Highlight, GRL Commentary.
38. **2020:** **Smith, A.**<sup>1</sup>, **A. Jahn**, M. Wang, Seasonal transition dates can reveal biases in Arctic sea ice simulations, *The Cryosphere*, 14, 2977–2997, doi:10.5194/tc-14-2977-2020.
37. **2020:** **DeRepentigny, P.**<sup>1</sup>, **A. Jahn**, M. Holland, **A. Smith**<sup>1</sup>, Arctic Sea Ice in Two Configurations of the Community Earth System Model Version 2 (CESM2) During the 20<sup>th</sup> and 21<sup>st</sup> Centuries, *J Geophys Res-Oceans*, 125, doi:10.1029/2020JC016133.
36. **2020:** Gu, S.<sup>2</sup>, Z. Liu, D.W. Oppo, J. Lynch-Stieglitz, **A. Jahn**, J. Zhang, L. Wu, Assessing the potential capability of reconstructing glacial Atlantic water masses and AMOC using multiple proxies in CESM, *Earth and Planetary Science Letters*, 541, 116294, doi:10.1016/j.epsl.2020.116294.
35. **2020:** SIMIP Community (including **P. DeRepentigny**<sup>1</sup> and **A. Jahn**), Arctic Sea Ice in CMIP6, *Geophys. Res. Lett.*, 47, doi:10.1029/2019GL086749, *Press coverage*.
34. **2020:** **DeRepentigny, P.**<sup>1</sup>, **A. Jahn**, L. B. Tremblay, R. Newton, S. Pfirman, Increased transnational sea ice transport between neighboring Arctic states in the 21st century. *Earth's Future*, 8, doi:10.1029/2019EF001284. *Press release*, *Press coverage*.
33. **2019:** England, M.<sup>2</sup>, **A. Jahn**, L. Polvani, Non-uniform contribution of natural variability to recent Arctic sea-ice loss, *J. Climate*, 32, 4039–4053, doi:10.1175/JCLI-D-18-0864.1.
32. **2019:** Gu, S.<sup>2</sup>, Z. Liu, J. Lynch-Stieglitz, **A. Jahn**, J. Zhang, K. Lindsay, L. Wu, Assessing the Ability of Zonal  $\delta^{18}\text{O}$  Contrast in Benthic Foraminifera to Reconstruct Deglacial Evolution of Atlantic Meridional Overturning Circulation, *Paleoceanography and Paleoclimatology*, 34, 800–812, doi:10.1029/2019PA003564.
31. **2019:** Gu, S.<sup>2</sup>, Z. Liu, **A. Jahn**, J. Rempfer, J. Zhang, F. Joos, Modelling neodymium isotopes in the ocean component of the Community Earth System Model (CESM1), *Journal of Advances in Modeling Earth Systems*, 11, 624–640. doi:10.1029/2018MS001538.
30. **2019:** Eyring, V., P. Cox, G. Flato, P. Gleckler, G. Abramowitz, P. Caldwell, W. Collins, B. Gier, A. Hall, F. Hoffman, G. Hurtt, **A. Jahn**, C. Jones, S. Klein, J. Krasting, L. Kwiatkowski, R. Lorenz, E. Maloney, G. Meehl, A. Pendergrass, R. Pincus, A. Ruane, J. Russell, B. Sanderson, B. Santer, S. Sherwood, I. Simpson, R. Stouffer, M. Williamson, Taking climate model evaluation to the next level, 9, 102–110, *Nature Climate Change*, doi:10.1038/s41558-018-0355-y.
29. **2019:** **Smith, A.**<sup>1</sup>, **A. Jahn**, Definition differences and internal variability affect the simulated Arctic sea ice melt season, *The Cryosphere*, 13, 1–20, doi:10.5194/tc-13-1-2019.
28. **2018:** **Zhong, Y.**<sup>1</sup>, **A. Jahn**, G. H. Miller, A. Geirsdottir, Asymmetric Cooling of the Atlantic and Pacific Arctic during the Past Two Millennia: A Dual Observation-Modeling Study, 45, *Geophys. Res. Lett.*, doi:10.1029/2018GL079447.
27. **2018:** **Jahn, A.**, Reduced probability of ice-free summers for 1.5 °C compared to 2.0 °C warming, *Nature Climate Change*, 8, 409–413 doi:10.1038/s41558-018-0127-8. *Press release*, *Press coverage*.
26. **2017:** Zhu, J., Z. Liu, E. Brady, B. Otto-Bliesner, S. Marcott, J. Zhang, X. Wang, J. Nusbaumer, T. Wong, **A. Jahn**, D. Noone, Investigating the direct meltwater effect in terrestrial oxygen-isotope paleoclimate records using an isotope-enabled Earth system model, *Geophys. Res. Lett.*, 44, doi:10.1002/2017GL076253.
25. **2017:** Pendleton, S.L., G. Miller, R. A. Anderson, S. E. Crump, **Y. Zhong**<sup>1</sup>, **A. Jahn**, A. Geirsdottir, Episodic Neoglacial expansion and rapid 20th Century retreat of a small ice cap on Baffin Island, Arctic Canada, *Climate of the Past*, 13, 1527–1537, doi:10.5194/cp-2017-27.
24. **2017:** Zhang, J., Z. Liu, E. C. Brady, **A. Jahn**, K. Lindsay, D. W. Oppo, P. U. Clark, S. A. Marcott, Asynchronous warming and  $\delta^{18}\text{O}$  evolution of deep Atlantic water masses during the last deglaciation, *Proc Natl Acad Sci USA*, doi:10.1073/pnas.1704512114.

23. **2017:** Sanderson, B., Y. Xu, C. Tebaldi, M. Wehner, B. O'Neill, **A. Jahn**, A. Pendergrass, F. Lehner, W. Strand, L. Lin, R. Knutti, J.-F. Lamarque, Community Climate Simulations to assess avoided impacts in 1.5°C and 2°C futures, *Earth Syst. Dynam.*, 8, 827–847, doi:10.5194/esd-8-827-2017.
22. **2017:** Zhu, J., Z. Liu, E. Brady, B. Otto-Bliesner, J. Zhang, D. Noone, R. Tomas, J. Nusbaumer, T. Wong, **A. Jahn**, C. Tabor, Reduced ENSO Variability at the LGM Revealed by an Isotope-enabled Earth System Model, *Geophys. Res. Lett.*, 44, doi:10.1002/2017GL073406.
21. **2017:** Otto-Bliesner, B. L., **A. Jahn**, R. Feng, E. C. Brady, A. Hu, M. Löffverström, Amplified North Atlantic warming in the late Pliocene by changes in Arctic gateways, *Geophys. Res. Lett.*, 44, doi:10.1002/2016GL071805.
20. **2016:** **Jahn, A.**, J. E. Kay, M.M. Holland, D. M. Hall, How predictable is the timing of a summer ice-free Arctic?, *Geophys. Res. Lett.*, 43, 9113–9120, doi:10.1002/2016GL070067. *Press release, Press coverage.*
19. **2016:** Notz, D., **A. Jahn**, M. Holland, E. Hunke, F. Massonnet, J. Stroeve, B. Tremblay, M. Vancoppenolle, The CMIP6 Sea-Ice Model Intercomparison Project (SIMIP): Understanding sea ice through climate-model simulations, *Geophys. Mod. Develop.*, 9, 3427–3446, doi:10.5194/gmd-9-3427-2016.
18. **2016:** Otto-Bliesner, B., E. Brady, J. Fasullo, **A. Jahn**, L. Landrum, S. Stevenson, N. Rosenbloom, A. Mai, G. Strand, Climate Variability and Change since 850 C.E.: An Ensemble Approach with the Community Earth System Model (CESM), *Bull. Am. Meteorol. Soc.*, 97(5), 735–754, doi:https://doi.org/10.1175/BAMS-D-14-00233.1.
17. **2016:** Ilicak, M., H. Drange, Q. Wang, R. Gerdes, Y. Aksenov, D. Bailey, M. Bentsen, A. Biastoch, A. Bozec, C. Böning, C. Cassou, E. Chassignet, A. C. Coward, B. Curry, G. Danabasoglu, S. Danilov, E. Fernandez, P. G. Fogli, Y. Fujii, S. M. Griffies, D. Iovino, **A. Jahn**, T. Jung, W. G. Large, C. Lee, C. Lique, J. Lu, S. Masina, A. J. G. Nurser, C. Roth, D. S. y Mélia, B. L. Samuels, P. Spence, H. Tsujino, S. Valcke, A. Voldoire, X. Wang, S. G. Yeager, An assessment of the Arctic Ocean in a suite of interannual CORE-II simulations. Part III: Hydrography and fluxes, *Ocean Modelling*, 100, 141–161, doi:10.1016/j.ocemod.2016.02.004.
16. **2016:** Wang, Q., M. Ilicak, R. Gerdes, H. Drange, Y. Aksenov, D. A Bailey, M. Bentsen, A. Biastoch, A. Bozec, C. Böning, C. Cassou, E. Chassignet, A. C. Coward, B. Curry, G. Danabasoglu, S. Danilov, E. Fernandez, P. G. Fogli, Y. Fujii, S. M. Griffies, D. Iovino, **A. Jahn**, T. Jung, W. G. Large, C. Lee, C. Lique, J. Lu, S. Masina, A.J. G. Nurser, B. Rabe, C. Roth, D. S. y Mélia, B. L. Samuels, P. Spence, H. Tsujino, S. Valcke, A. Voldoire, X. Wang, S. G. Yeager, An assessment of the Arctic Ocean in a suite of interannual CORE-II simulations. Part II: Liquid freshwater, *Ocean Modelling*, 99, 86–109, doi:10.1016/j.ocemod.2015.12.009.
15. **2016:** Wang, Q., M. Ilicak, R. Gerdes, H. Drange, Y. Aksenov, D. A Bailey, M. Bentsen, A. Biastoch, A. Bozec, C. Böning, C. Cassou, E. Chassignet, A. C. Coward, B. Curry, G. Danabasoglu, S. Danilov, E. Fernandez, P. G. Fogli, Y. Fujii, S. M. Griffies, D. Iovino, **A. Jahn**, T. Jung, W. G. Large, C. Lee, C. Lique, J. Lu, S. Masina, A.J. G. Nurser, B. Rabe, C. Roth, D. S. y Mélia, B. L. Samuels, P. Spence, H. Tsujino, S. Valcke, A. Voldoire, X. Wang, S. G. Yeager, An assessment of the Arctic Ocean in a suite of interannual CORE-II simulations. Part I: Sea ice and solid freshwater, *Ocean Modelling*, 99, 110–132, doi:10.1016/j.ocemod.2015.12.008.
14. **2015:** **Jahn, A.**, K. Lindsay, X. Giraud, N. Gruber, B. L. Otto-Bliesner, Z. Liu, E. C. Brady, Carbon isotopes in the ocean model of the Community Climate System Model (CESM), *Geophys. Mod. Develop.*, 8, 2419–2434, doi:10.5194/gmd-8-2419-2015.
13. **2015:** Swart, N. C., J. C. Fyfe, E. Hawkins, J. E. Kay, **A. Jahn**, Influence of internal variability on Arctic sea-ice trends, *Nature Climate Change*, 5, 86–89, doi:10.1038/nclimate2483.
12. **2014:** Tilmes, S., **A. Jahn**, J. E. Kay, M. M. Holland, J.-F. Lamarque, Can regional climate engineering save the summer Arctic Sea Ice?, *Geophys. Res. Lett.*, 41(3), doi:10.1002/2013GL058731.
11. **2013:** **Jahn, A.** and M. M. Holland, Implications of Arctic sea ice changes for North Atlantic deep convection and the meridional overturning circulation in CCSM4-CMIP5 simulations, *Geophys. Res. Lett.*, 40, 6, 1206–1211, doi:10.1002/grl.50183.
10. **2012:** **Jahn, A.**, Y. Aksenov, B. A. de Cuevas, R. Gerdes, S. Häkkinen, E. Hansen, C. Herbaut, M.-N. Houssais, M. Karcher, C. Lique, A. Nguyen, P. Pemberton, L. de Steur, D. Worthen, J. Zhang, Arctic freshwater - How robust are model simulations?, *J Geophys Res-Oceans*, 117, doi:10.1029/2012JC007907.

9. **2012: Jahn, A.**, K. Sterling, M. M. Holland, J. E. Kay, J. A. Maslanik, C. M. Bitz, D. A. Bailey, J. Stroeve, E. C. Hunke, W. H. Lipscomb, D. A. Pollak<sup>2</sup>, Late 20th century simulation of Arctic sea ice and ocean properties in the CCSM4, *Journal of Climate*, 25(5), 1431–1452, doi:10.1175/JCLI-D-11-00201.1.
8. **2012: Vavrus, S.**, M. M. Holland, **A. Jahn**, D. A. Bailey, J. A. Maslanik, B. Blazey, Simulation of the 21st century Arctic climate in the CCSM4, *Journal of Climate*, Vol. 25(8), 2696–2710, doi:10.1175/JCLI-D-11-00220.1.
7. **2012: Jochum, M.**, **A. Jahn**, S. Peacock, D. Bailey, J. Fasullo, J. Kay, S. Levis, B. Otto-Bliesner, True to Milankovitch: Glacial Inception in the new Community Climate System Model, *Journal of Climate*, 25(7), 2226–2239, doi:10.1175/JCLI-D-11-00044.1.
6. **2011: Proshutinsky, A.**, Y. Aksenov, J. Clement-Kinney, R. Gerdes, E. Golubeva, D. Holland, G. Holloway, **A. Jahn**, M. Johnson, E. Popova, M. Steele, E. Watanabe, Recent advances in Arctic Ocean studies employing models from the Arctic Ocean Model Intercomparison Project, *Oceanography*, 24(3), 102–113, doi:10.5670/oceanog.2011.61.
5. **2011: Kay, J. E.**, M. M. Holland, **A. Jahn**, Interannual to Multidecadal Arctic Sea Ice Extent Trends in a Warming World, *Geophys. Res. Lett.*, 38, L15708, doi:10.1029/2011GL048008.
4. **2010: Jahn, A.**, B. Tremblay, R. Newton, M. M. Holland, L. A. Mysak, I. A. Dmitrenko, A tracer study of the Arctic Ocean’s liquid freshwater export variability, *J Geophys Res-Oceans*, 115, C07015, doi:10.1029/2009JC005873.
3. **2010: Jahn, A.**, B. Tremblay, L. A. Mysak, R. Newton, Effect of the large-scale atmospheric circulation on the variability of the Arctic Ocean freshwater export, *Climate Dynamics*, 34, 201–222, doi:10.1007/s00382-009-0558-z.
2. **2008: Tjallingii, R.**, M. Claussen, J.-B. W. Stuut, J. Fohlmeister, **A. Jahn**, T. Bickert, F. Lamy, U. Röhl, Coherent high- and low-latitude control of the northwest African hydrological balance, *Nature Geoscience*, 1, 670–675, doi:10.1038/ngeo289.
1. **2005: Jahn, A.**, M. Claussen, A. Ganopolski, V. Brovkin, Quantifying the effect of vegetation dynamics on the climate of the Last Glacial Maximum, *Climate of the Past*, 1, 1–7, doi:10.5194/cp-1-1-2005.

### Under Review/Submitted

- 2021: Horvath, A.**, J. Stroeve, R. Balaji, **A. Jahn**, Arctic sea ice melt onset favored by an atmospheric pressure pattern reminiscent of the North American-Eurasian Arctic Dipole Pattern, under review in *Climate Dynamics*.
- 2021: Gu, S.**, Z. Liu, D.W. Oppo, J. Lynch-Stieglitz, **A. Jahn**, J. Zhang, K. Lindsay, L. Wu, Remineralization dominating the  $\delta^{13}\text{C}$  decrease in the mid-depth Atlantic during the last deglaciation, under review in *Earth and Planetary Science Letters*.
- 2021: Ford, H.**, N. Burls, R. Caballero-Gill, A. Federov, D. Hodell, P. Jacobs, **A. Jahn**, A reversed carbon isotope gradient and Pacific deep water formation during the mid-Pliocene warm period, under review at *Nature Geoscience*.
- 2021: Zanowski, H.**<sup>1</sup>, **A. Jahn**, M. Holland, Arctic Freshwater in CMIP6: Declining Sea Ice, Increasing Ocean Storage and Export, under review at *J Geophys Res-Oceans*.
- 2021: Fasullo, J. T. J. F.** Lamarque, C. Hannay, N. Rosenblum, S. Tilmes, **P. DeRepentigny**<sup>1</sup>, **A. Jahn**, C. Deser, Spurious Late Historical-Era Warming in CESM2 and other CMIP6 climate simulations driven by prescribed biomass burning emissions, under review in *Science Advances*.
- 2021: Gu, S.**, Z. Liu, C. Ng Hong, J. Lynch-Stieglitz, J. F. McManus, M. Spall, **A. Jahn**, C. He, L. Lingwei, Y. Mi, W. Lixin, Intensified AMOC Interior Pathway of Glacial North Atlantic Intermediate Water due to Open Ocean Convection, submitted to *Science*.
- 2021: A. Crawford, J. Stroeve, A. Smith**<sup>1</sup>, **A. Jahn**, Dramatic Lengthening of Arctic Open-Water Periods by 2100 in CMIP6 Models, submitted to *Nature Communications*.

### In preparation

- 2021: Smith, A.**<sup>1</sup>, **A. Jahn**, C. Burgard, D. Notz, Improving model-satellite comparisons of sea ice melt onset with a satellite simulator, in preparation for *The Cryosphere*.

**2021: DeRepentigny, P.<sup>1</sup>, A. Jahn**, M. Holland, J. Fassulo, J.-F. Lamarque, C. Hannay, D. Bailey, Biomass burning emissions affect simulated Arctic sea ice loss in some CMIP6 models, in preparation for *Scientific Advances*.

## CITABLE DATASETS

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**2020: Smith, A.<sup>1</sup>, A. Jahn**, Arctic sea ice seasonal transition metrics from coupled climate model simulations, 1979-2013, doi:10.18739/A2C53F235.

**2020: A. Jahn**, Arctic Ocean freshwater fluxes and storage from simulations with the Community Earth System Model version 1.1 (CESM1.1), doi:10.18739/A2CC0TT8X.

**2018: Zhong, Y<sup>1</sup>, Jahn, A.**, G. H. Miller, A. Geirsdottir, Land use and volcanic forcing files for past2k CESM simulation, doi:10.5281/zenodo.1304427.

**2017: Pendleton, S., G.H. Miller, R.A. Anderson, S.E. Crump, Y. Zhong<sup>1</sup>, A. Jahn**, A. Geirsdóttir: Age determination and glacier model for a small ice cap on Baffin Island, doi:10.1594/PANGAEA.881156.

## BLOG POSTS AND OTHER NON-REFEREED PUBLICATIONS (WITH LINKS)

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**2017: Corwin, L., Harvey, P., K., S., Graf, J., Ellingson, E., Bhattacharya, A., Birsoy, B., Casagrand, J., Emery, N., Fillmann, C., Foley, T., Guild, N., Jahn, A., Lee, M., Pao, L., Power, J., Chasteen, S.** (2017), Course-based Undergraduate Research Experiences: Advancing CU Boulder's Strategic Goals, CU Academic Futures white paper.

**2017: A. Jahn**, Die Zukunft des Arktischen Meereises, Invited expert guest post for the German Year of the Ocean.

**2016: A. Jahn**, How predictable is the first ice-free Arctic summer? Guest Blogpost at CarbonBrief.

**2012: Massonnet, F., and A. Jahn**, Observational needs for sea ice models: CliC white paper.

**2010: Jahn, A.**, Modeling the variability of the liquid freshwater export from the Arctic Ocean, PhD thesis, 194 pages, McGill University, Canada.

**2005: Jahn, A.**, Theories and Modeling of Glacial-Interglacial Cycles and Glacial Inception, Center for Climate and Global Change Research (C2GCR) Report No. 2005-1, 57 pages, McGill University, Montreal, Canada.

**2004: Jahn, A.**, Atmosphere-Vegetation Feedback in the Climate System of the Last Glacial, Diplom thesis, 129 pages, Free University of Berlin, Germany.

## SCIENTIFIC PRESENTATIONS

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### Invited Scientific Presentations (37 total invitations, 35 given)

#### **Quantifying the prediction uncertainty of an ice-free Arctic using large ensembles**

**10/2020:** Webinar talk at the CLIVAR Large Ensemble Working group sea ice mini-symposium

#### **Update on the Sea Ice Model Intercomparison project (SIMIP) for CMIP6**

**12/2019:** AGU talk in the session "Cryosphere Changes: Integrative Research and Synthesis" - declined due to parental leave.

**02/2019:** Webinar talk at the IARPC webinar series of the Sea Ice and Modeling Teams.

#### **Assessing the predictability and probability of a summer ice-free Arctic**

**09/2020:** Seminar in the Department of Meteorology and Atmospheric Sciences at Penn State, USA, virtual seminar - postponed to February 2021 due to illness in September 2020.

**11/2018:** Keynote before the ESSS Poster Conference hosted by the Atmospheric and Oceanic Sciences Department at CU Boulder, Boulder, USA.

**11/2018:** Seminar in the Atmospheric Science department seminar series at Colorado State University, Fort Collins, USA.

**10/2018:** Seminar in the INSTAAR seminar series at CU Boulder, Boulder, USA.

#### **Boundary forced predictability and the challenges of internal variability**

**08/2018:** Talk at the NSF-funded CESM Polar Modeling Workshop at NCAR, Boulder, USA.

### **Observed recent Arctic sea ice change, Arctic climate projections**

**05/2018:** Talks/lectures<sup>c</sup> at the International Polar Climate Summer School in Nanjing, China.

### **Assessing the prediction uncertainty of Arctic sea ice and ocean projections**

**05/2018:** Seminar at in the Global Modeling and Assimilation Office seminar series at NASA Goddard, Maryland, USA.

### **Simulated Arctic sea ice and ocean change**

**04/2018:** Keynote talk at the Arctic System Change workshop at NCAR, Boulder, USA.

### **Positive feedbacks from Arctic Ocean Sea Ice**

**11/2017:** Talk at the CU Center for the Study of Origins Symposium on “The Coldest Centuries in 8000 Years: The Little Ice Age Causes and Human Consequences.”, Boulder, USA.

### **Understanding and reducing errors in sea ice projections from global climate models**

**10/2017:** Keynote talk at the workshop on “Improved satellite retrievals of sea-ice concentration and sea-ice thickness for climate applications” in Hamburg, Germany.

### **Climate Modeling, Arctic sea ice projections, Sea ice Model Assessment**

**07/2017:** Talks/lectures<sup>c</sup> at the Connaught Summer Institute in Arctic Science: Atmosphere, Cryosphere, and Climate, Alliston, ON, Canada.

### **The Sea Ice Model Intercomparison project**

**06/2017:** Talk at the CLIVAR/CliC/SCAR Southern Ocean Regional Panel 12th session, Boulder, USA.

### **Isotope modeling**

**05/2017:** Talk at the Proxy System modeling and data assimilation in paleosciences workshop, Louvain-la-Neuve, Belgium.

### **Climate Science and Climate Projection**

**05/2017:** Talk at the CU Climate and Health workshop, Boulder, USA.

### **Impacts of Arctic freshwater on AMOC**

**03/2017:** Seminar in the Cryospheric and Polar Processes Seminar at NSIDC, Boulder, USA.

### **Influence of internal variability on Arctic sea ice simulations**

**02/2017:** Talk at the Santa Fe Climate Conference, NM, USA.

### **Challenges for assessing sea ice simulations from climate models against observations**

**01/2017:** Talk at the 2017 AMS meeting in Seattle, WA, USA.

### **Isotope modeling with the CESM**

**08/2016:** Talk at the 2016 CESM tutorial at NCAR, Boulder, USA.

### **Using large ensemble simulations to assess Arctic sea ice simulations and predictability**

**06/2016:** Talk in the Large Ensemble session at the 2016 CESM workshop, Breckenridge, USA.

### **How predictable is the timing of a summer ice-free Arctic?**

**05/2016:** Talk at the SEARCH SSC meeting in Boulder, USA.

**04/2016:** Seminar at the Institute for Meteorology at the Free University of Berlin, Germany.

### **Internal variability limits the predictability of a summer ice-free Arctic**

**12/2014:** Talk at the fall AGU meeting in San Francisco, USA.

### **Using models to study Arctic climate variability and change**

**01/2014:** Seminar at the Institute for Arctic and Alpine research (INSTAAR) in Boulder, USA.

### **Carbon isotopes in the CESM**

**08/2013:** Talk at the “Isotopes of Carbon, Water, and Geotracers in Paleoclimate Research” conference in Bern, Switzerland.

### **Large Scale Modeling Data Needs**

**06/2013:** Plenary talk at the CliC Sea ice Modeling & Observing workshop in Tromso, Norway.

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<sup>c</sup>Also listed under other teaching

### **Global Impacts of Arctic sea-ice changes**

**04/2012:** Talk at the International Polar year (IPY) conference in Montreal, Canada.

### **Assessing future changes in the Arctic Ocean**

**04/2012:** Seminar in the Dept. of Atmospheric & Oceanic Sciences, McGill University, Canada.

**01/2012:** Seminar at the Alfred Wegener Institute for Polar & Marine Science (AWI), Germany.

**09/2011:** Seminar in the Dept. of Physics & Astronomy at Howard University, Washington DC, USA.

### **The Polar Regions: An area of active research for decades to come**

**06/2011:** Talk at the IUGG conference in Melbourne, Australia.

### **Variability and change in the Arctic Ocean**

**04/2011:** Seminar at Woods Hole Oceanographic Institution, USA.

**03/2011:** Seminar in the Dept of Environment and Geography, University of Manitoba, Canada.

### **A tracer study of the Arctic Ocean's liquid freshwater export variability**

**09/2010:** Seminar in the CGD seminar series at NCAR, Boulder, USA.

**06/2010:** Seminar at the Alfred Wegener Institute for Polar & Marine Science (AWI), Germany.

**06/2010:** Talk at the CMOS conference in Ottawa, Canada.

### **Contributed Scientific Presentations**

(presenting author other than the first author indicated by \*.)

Presentations where neither Jahn nor her direct advisees were presenting author are not included

<sup>1</sup> = Jahn as primary advisor for student or postdoc

<sup>2</sup> = Jahn as secondary advisor/mentor for student or postdoc

### **Is There a Forced Signal in the Recent Reduced Rate of Arctic Sea Ice Loss?**

**12/2020: DeRepentigny, P<sup>1</sup>, A. Jahn, M. Holland, M. Mills, S. Tilmes, J. Fasullo,** Talk at the virtual AGU 2020 conference

### **Realism of simulated internal variability in Arctic sea ice**

**12/2020: Wyburn-Powell, C.<sup>1</sup>, A. Jahn, M. England,** Poster at the virtual AGU 2020 conference

### **Global Intermediate Water Evolution during the Last Deglaciation in C-iTRACE**

**12/2020: Zanowski, H.<sup>1</sup>, A. Jahn, S. Gu, Z. Liu, T. Marchitto,** Poster at the virtual AGU 2020 conference

### **Forced Changes in the Arctic Freshwater Budget Emerge in the Early 21st Century**

**12/2020: A. Jahn, R. Laiho<sup>1</sup>** Talk at the virtual fall 2020 AGU meeting.

**06/2020: A. Jahn, R. Laiho<sup>1</sup>** Lightning talk at the PCWG summer virtual 2020 CESM workshop.

### **Detecting Arctic sea ice melt onset with a satellite simulator**

**06/2020: A. Smith<sup>1</sup>, A. Jahn, C. Burgard,** Lightning talk at the PCWG summer virtual 2020 CESM workshop.

### **Arctic Freshwater Storage and Export in CMIP6 models**

**10/2020: H. Zanowski<sup>1</sup>, A. Jahn, M. Holland,** Talk in the virtual fall 2020 ATOC colloquium series.

**09/2020: H. Zanowski<sup>1</sup>, A. Jahn, M. Holland,** Invited virtual seminar at the National Center for Atmospheric Research.

**09/2020: H. Zanowski<sup>1</sup>, A. Jahn, M. Holland,** Invited virtual seminar at the Institute of Arctic and Alpine Research, Univ. of Colorado Boulder.

**09/2020: H. Zanowski<sup>1</sup>, A. Jahn, M. Holland,** Invited virtual seminar at the British Antarctic Survey.



- 09/2020: H. Zanowski<sup>1</sup>, A. Jahn**, M. Holland, Invited virtual seminar at the University of Rhode Island.
- 06/2020: H. Zanowski<sup>1</sup>, A. Jahn**, M. Holland, Talk at the virtual summer PCWG 2020 CESM workshop.
- 02/2020: H. Zanowski<sup>1</sup>, A. Jahn**, M. Holland, Poster at the 2020 Ocean Sciences meeting, San Diego, USA

#### **Arctic Freshwater Storage and Export in CESM2-CAM6 and CESM2-WACCM6**

- 02/2020: H. Zanowski<sup>1</sup>, A. Jahn**, M. Holland, Talk at the Winter PCWG meeting, Boulder, USA

#### **Seasonal transitions of Arctic sea ice over the satellite era in CMIP6 models**

- 05/2020: A. Smith<sup>1</sup>, A. Jahn**, M. Wang, [Virtual Display](#) at the virtual EGU 2020 meeting.
- 02/2020: A. Smith<sup>1</sup>, A. Jahn**, M. Wang, Talk at the Winter PCWG meeting, Boulder, USA
- 12/2019: A. Smith<sup>1</sup>, A. Jahn**, M. Wang, Poster at the the 13th Annual Earth System and Space Science Poster Conference, Boulder, USA

#### **Changes in Arctic sea ice in the CESM2 over the 20th and 21st centuries**

- 05/2020: P. DeRepentigny<sup>1</sup>, A. Jahn**, M. Holland, **A. Smith<sup>1</sup>**, [Virtual Display](#) at the virtual EGU 2020 meeting.
- 02/2020: P. DeRepentigny<sup>1</sup>, A. Jahn**, M. Holland, **A. Smith<sup>1</sup>**, Talk at the Winter PCWG meeting, Boulder, USA
- 12/2019: P. DeRepentigny<sup>1</sup>, A. Jahn**, M. Holland, **A. Smith<sup>1</sup>**, Poster at the the 13th Annual Earth System and Space Science Poster Conference, Boulder, USA
- 09/2019: P. DeRepentigny<sup>1</sup>, A. Jahn**, M. Holland, **A. Smith<sup>1</sup>**, Poster at the ESM Summer School 2019, Bad Aibling, Germany.
- 08/2019: P. DeRepentigny<sup>1</sup>, A. Jahn**, Poster at the IGS Sea ice Symposium: Sea Ice at the Interface, Winnipeg, Canada.
- 08/2019: P. DeRepentigny<sup>1</sup>, A. Jahn**, Talk at the 2019 SIMIP Workshop, Winnipeg, Canada.

#### **No Scenario Impact on Arctic September Sea Ice in CESM2**

- 09/2019: P. DeRepentigny<sup>1</sup>, A. Jahn**, Poster at the ESM Summer School 2019, Bad Aibling, Germany.
- 08/2019: P. DeRepentigny<sup>1</sup>, A. Jahn**, Poster at the 2019 CESM Polar Modeling Workshop, Boulder, USA.

#### **Increased Transnational Sea Ice Transport Between Neighboring Arctic States in the 21<sup>st</sup> Century**

- 08/2019: P. DeRepentigny<sup>1</sup>, A. Jahn**, B. Tremblay, R. Newton, S. Pfirmann, Talk at the IGS Sea ice Symposium: Sea Ice at the Interface, Winnipeg, Canada. *Awarded honorable mention for student presentation*
- 07/2019: P. DeRepentigny<sup>1</sup>, A. Jahn**, B. Tremblay, R. Newton, S. Pfirmann, Talk at the 27th IUGG conference, Montreal, Canada.

#### **Identifying drivers of Arctic sea ice internal variability**

- 08/2019: A. Jahn**, Talk at the IGS Sea ice Symposium: Sea Ice at the Interface, Winnipeg, Canada.
- 07/2019: A. Jahn**, Talk at the 27th IUGG conference, Montreal, Canada.
- 05/2019: A. Jahn**, Talk at the 15th AMS Conference on Polar Meteorology and Oceanography, Boulder, USA.

#### **Processes Driving the Arctic Sea Ice Open Water Period**

- 08/2019: A. Smith<sup>1</sup>, A. Jahn**, M. Wang, Talk at the IGS Sea ice Symposium: Sea Ice at the Interface, Winnipeg, Canada.
- 05/2019: A. Smith<sup>1</sup>, A. Jahn**, M. Wang, Talk at the 15th AMS Conference on Polar Meteorology and Oceanography, Boulder, USA. *Won most outstanding student presentation award.*

### **Predictability and probability of a summer ice-free Arctic**

**07/2019:** A. Jahn, Poster at the Large Ensembles Workshop, Boulder, USA.

### **Non-uniform contribution of internal variability to recent Arctic sea ice loss**

**05/2019:** M. England<sup>2</sup>, A. Jahn\*, L. Polvani, 15th AMS Conference on Polar Meteorology and Oceanography, Boulder, USA

**02/2019:** M. England<sup>2</sup>, A. Jahn\*, L. Polvani, CESM PCWG winter meeting, Boulder, USA.

### **Future Sea-Ice Decline Predicted to Bring the Arctic Nations Closer Together**

**05/2019:** P. DeRepentigny<sup>1</sup>, A. Jahn, B. Tremblay, R. Newton, S. Pfirmann, Talk at the 15th AMS Conference on Polar Meteorology and Oceanography, Boulder, USA. *Won outstanding student presentation award.*

**02/2019:** P. DeRepentigny<sup>1</sup>, B. Tremblay, R. Newton, S. Pfirmann, A. Jahn, Talk at the 2019 CESM PCWG meeting, Boulder, USA.

**12/2018:** P. DeRepentigny<sup>1</sup>, B. Tremblay, R. Newton, S. Pfirmann, A. Jahn, Poster at the 2018 AGU conference, Washington DC, USA.

**11/2018:** P. DeRepentigny<sup>1</sup>, B. Tremblay, R. Newton, S. Pfirmann, A. Jahn, Poster at the ESSS Poster Conference at CU Boulder, Boulder, USA. *Won best overall poster award*

### **Arctic freshwater modeling work at CU Boulder**

**08/2018:** A. Jahn, R. Laiho<sup>1</sup>, P. DeRepentigny<sup>1</sup>, Oral talk at the Arctic Freshwater Dynamics Workshop at Lamont-Doherty, New York, USA.

### **Arctic Sea Ice Melt Season Length in the CESM Large Ensemble**

**11/2018:** A. Ahlert<sup>1</sup>, A. Jahn, Poster at the ESSS Poster Conference at CU Boulder, Boulder, USA. *Won the poster award in the Snow and Ice category*

**06/2018:** A. Ahlert<sup>1</sup>, A. Jahn, Poster at the POLAR2018 meeting, Davos, Switzerland

### **Scenario Uncertainty for Arctic Freshwater Projections**

**06/2018:** R. Laiho<sup>1</sup>, A. Jahn, Poster at the 23rd CESM workshop, Boulder, USA

### **Reduced probability of Arctic ice-free summers for 1.5 °C compared to 2 °C warming**

**04/2019:** A. Jahn, Poster at the EGU 2019 meeting, Vienna, Austria

**04/2018:** A. Jahn, Poster at the Arctic System Change workshop at NCAR, Boulder, USA.

### **For Arctic summer sea ice, staying at 1.5 °C global warming matters**

**06/2018:** A. Jahn, Talk at the POLAR2018 meeting, Davos, Switzerland

**01/2018:** A. Jahn, Talk at the PCWG meeting, Boulder, USA

### **Assessing the impact of internal variability on comparisons of sea ice thickness with satellite derived products**

**08/2019:** A. Jahn, K. Dochen<sup>1</sup>, D. Hall, Poster at the IGS Sea ice Symposium: Sea Ice at the Interface, Winnipeg, Canada

**06/2018:** A. Jahn, K. Dochen<sup>1</sup>, D. Hall, Talk at the POLAR2018 meeting, Davos, Switzerland

**12/2017:** A. Jahn, K. Dochen<sup>1</sup>, D. Hall, Talk at the AGU fall meeting, New Orleans, USA

### **Will future sea-ice decline bring the Arctic Nations closer together?**

**06/2018:** P. DeRepentigny<sup>1</sup>, B. Tremblay, R. Newton, S. Pfirmann, A. Jahn, Poster at the 23rd CESM workshop, Boulder, USA

**12/2017:** P. DeRepentigny<sup>1</sup>, B. Tremblay, R. Newton, S. Pfirmann, A. Jahn, Poster at the 11th Annual Earth System and Space Science Poster Conference, Boulder, USA

### **Detecting Changes in the Arctic Freshwater Budget**

**06/2018:** R. Laiho<sup>1</sup>, A. Jahn\*, Poster at the POLAR2018 conference, Davos, Switzerland

- 04/2018: R. Laiho<sup>1</sup>, A. Jahn**, Poster at the 48th International Arctic Workshop, Boulder, USA
- 12/2017: R. Laiho<sup>1</sup>, A. Jahn**, Poster at the 11th Annual Earth System and Space Science Poster Conference, Boulder, USA
- 06/2017: R. Laiho<sup>1</sup>, A. Jahn**, Poster at the 22nd CESM Workshop, Boulder, USA
- 02/2017: R. Laiho<sup>1</sup>, A. Jahn**, Talk at the 2017 winter CESM PCWG Meeting, Boulder, USA

**What Models and Satellites Tell Us (and Don't Tell Us) About Arctic Sea Ice Melt Season Length**

- 12/2017: A. Ahlert<sup>1</sup>, A. Jahn**, Talk at the AGU fall meeting, New Orleans, USA

**Modeling North Atlantic Sea Ice and Circulation Changes during the Last 2ka**

- 10/2017: Y. Zhong<sup>1</sup>, G. Miller, A. Jahn, A. Geirsdottir**, Talk at the ANATILS meeting, Boulder, USA

**How the Timing of Melt and Freeze Onset Impacts Arctic Sea Ice Cover**

- 12/2017: A. Ahlert<sup>1</sup>, A. Jahn**, Poster at the 11th Annual Earth System & Space Science Poster Conference, Boulder, USA
- 08/2017: A. Ahlert<sup>1</sup>, A. Jahn**, Poster at the International Glaciological Society "Polar Ice, Polar Climate, Polar Change" Conference, Boulder, USA

**A summer ice-free Arctic by the end of the 21st century? A question of future emissions**

- 08/2017: A. Jahn**, Talk at the International Glaciological Society meeting "Polar Ice, Polar Climate, Polar Change" in Boulder, USA

**Assessing ocean circulation changes at the LGM using radiocarbon simulations with the iCESM**

- 06/2017: A. Schroeder<sup>1</sup>, A. Jahn**, Poster at the CESM workshop, Boulder, USA
- 05/2017: A. Schroeder<sup>1</sup>, A. Jahn**, Poster at the Proxy System modeling and data assimilation in paleosciences workshop, Louvain-la-Neuve, Belgium

**Definitions Matter: Arctic Sea Ice Melt and Freeze Onset**

- 06/2017: A. Ahlert<sup>1</sup>, A. Jahn**, Poster at the summer CESM workshop, Boulder, USA
- 03/2017: A. Ahlert<sup>1</sup>, A. Jahn**, Poster at the Polar Prediction Workshop, Bremerhaven, Germany
- 02/2017: A. Ahlert<sup>1</sup>, A. Jahn**, Talk at the winter PCWG CESM workshop, Boulder, USA

**Predictability of Arctic sea ice under different emission scenarios**

- 03/2017: A. Jahn**, Talk at the Polar Prediction workshop, Bremerhaven, Germany

**A Past2K run with CESM**

- 03/2017: Y. Zhong<sup>1</sup>, G. Miller, A. Jahn, A. Geirsdottir**, Talk at the CESM Paleoclimate WG meeting, Boulder, USA

**Assessing sea ice melt season characteristics in the CESM Large Ensemble**

- 12/2016: A. Ahlert<sup>1</sup>, A. Jahn**, Poster at the 2016 Earth & Space Science Student Poster conference, Boulder, USA.
- 11/2016: A. Ahlert<sup>1</sup>, A. Jahn**, Poster at the FAMOS workshop, Woods Hole, USA.
- 06/2016: A. Ahlert<sup>1</sup>, A. Jahn**, Poster at the 21st CESM Workshop, Breckenridge, USA.

**The Journey to a New ATOC Major: What do we want our students to learn?**

- 10/2016: Nigro, M.A., D. Brown, A. Jahn\*, N. Lovenduski, J.K. Lundquist**, Poster at the 2016 TRESTLE Annual Meeting, Boulder, USA.

**Internal variability in the Arctic freshwater budget as simulated by the CESM Large Ensemble**

- 02/2018: R. Laiho<sup>1</sup>, A. Jahn, Talk at the Ocean Sciences meeting, Portland, USA  
11/2016: R. Laiho<sup>1</sup>, A. Jahn, Poster at the FAMOS workshop, Woods Hole, USA  
06/2016: R. Laiho<sup>1</sup>, A. Jahn, Poster at the 21st CESM workshop, Breckenridge, USA

**Studies of the AMOC strength in future and paleo simulations with the CESM**

- 05/2016: A. Jahn, M. Holland, B. Otto-Bliesner, Poster at the Workshop on Connecting Paleo and Modern Oceanographic Data to Understand AMOC over Decades to Centuries, Boulder, USA

**How predictable is the timing of a summer ice-free Arctic?**

- 11/2016: A. Jahn, J. Kay, M. Holland, D. Hall, Poster at the FAMOS workshop, Woods Hole, USA  
04/2016: A. Jahn, J. Kay, M. Holland, D. Hall, Talk at the EGU meeting in Vienna, Austria

**Sea ice simulations for the Last Millennium - the role of internal versus forced variability**

- 06/2016: A. Jahn, Poster at the 21st CESM workshop, Breckenridge, USA  
04/2016: A. Jahn, Poster at the EGU meeting, Vienna, Austria

**Influence of internal variability on sea ice predictability**

- 02/2016: A. Jahn, J. Kay, M. Holland, D. Hall, Talk at the CESM PCWG winter meeting, Boulder, USA  
12/2015: A. Jahn, J. Kay, M. Holland, D. Hall, Poster at the AGU fall meeting, San Francisco, USA

**Investigating the mechanisms leading to synchronous snowline depression throughout the northern North Atlantic during the Late Holocene using the CESM**

- 10/2015: A. Jahn, Talk at the ANATILS (Abrupt North Atlantic Transitions: Ice, Lakes, Sea) workshop, Boulder, USA

**The Sea ice model intercomparison project for CMIP6**

- 02/2015: A. Jahn, Talk at the CliC SSG meeting, Boulder, USA  
02/2015: A. Jahn, Talk at the CESM Polar Climate WG meeting, Boulder, USA.

**Uncertainty in predictions of Arctic sea ice**

- 09/2014: A. Jahn, M. Holland, J. Kay, Poster at the Royal Society meeting, Buckinghamshire, UK.  
06/2014: A. Jahn, M. Holland, J. Kay, Poster at the CESM meeting, Breckenridge, USA.

**Simulated carbon isotope distributions in the ocean model of the CESM**

- 09/2014: A. Jahn, Keith Lindsay, Esther Brady, Bette Otto-Bliesner, Zhengyu Liu, Nicolas Gruber, Xavier Giraud, Oral presentation in the CGD Research Reports seminar series at NCAR, USA.  
06/2014: A. Jahn, Keith Lindsay, Esther Brady, Bette Otto-Bliesner, Zhengyu Liu, Nicolas Gruber, Xavier Giraud, Oral presentation at the CESM workshop, Breckenridge, USA.  
05/2014: A. Jahn, Keith Lindsay, Esther Brady, Bette Otto-Bliesner, Zhengyu Liu, Nicolas Gruber, Xavier Giraud, Oral presentation at the 2nd PMIP3 meeting, Namur, Belgium.

**Arctic sea ice in the CESM large ensemble**

- 01/2014: A. Jahn, M. Holland, J. Kay, Oral presentation at the Polar Climate WG winter meeting, Boulder, USA.

**The isotope enabled CESM**

- 05/2014: A. Jahn, Keith Lindsay, Esther Brady, Synte Peacock, Jiaxu Zhang, Bette Otto-Bliesner, Zhengyu Liu, Poster at the 2nd PMIP3 meeting, Namur, Belgium.  
10/2012: A. Jahn, Keith Lindsay, Esther Brady, Synte Peacock, Jiaxu Zhang, Bette Otto-Bliesner, Zhengyu Liu, Oral presentation at the AOMIP/FAMOS workshop, Woods Hole, USA.

## **Implications of Arctic sea ice changes for North Atlantic deep convection and the MOC**

**02/2013: A. Jahn**, M. Holland, Oral presentation at the CESM Polar Climate WG meeting, Boulder, USA.

## **Carbon isotopes in the iCESM**

**12/2014: A. Jahn**, Keith Lindsay, Esther Brady, Bette Otto-Bliesner, Zhengyu Liu, Nicolas Gruber, Xavier Giraud, Poster at the 2014 fall AGU meeting, San Francisco, USA.

**03/2014: A. Jahn**, Keith Lindsay, Esther Brady, Bette Otto-Bliesner, Zhengyu Liu, Nicolas Gruber, Xavier Giraud, Oral presentation at the 2014 spring Paleo WG meeting, Boulder, USA.

**02/2014: A. Jahn**, Keith Lindsay, Esther Brady, Bette Otto-Bliesner, Zhengyu Liu, Nicolas Gruber, Xavier Giraud, Poster at the 2014 AGU Ocean Sciences meeting, Honolulu, USA.

**08/2013: A. Jahn**, Keith Lindsay, Esther Brady, Bette Otto-Bliesner, Zhengyu Liu, Nicolas Gruber, Xavier Giraud, Oral presentation at the 2013 CESM tutorial, Boulder, USA.

**06/2013: A. Jahn**, Keith Lindsay, Esther Brady, Bette Otto-Bliesner, Zhengyu Liu, Nicolas Gruber, Xavier Giraud, Oral presentation at the CESM Paleo Climate WG meeting, Breckenridge, USA.

**01/2013: A. Jahn**, Keith Lindsay, Esther Brady, Bette Otto-Bliesner, Zhengyu Liu, Nicolas Gruber, Xavier Giraud, Oral presentation at the CESM Ocean Modeling WG meeting, Boulder, USA.

**11/2012: A. Jahn**, Keith Lindsay, Esther Brady, Bette Otto-Bliesner, Zhengyu Liu, Nicolas Gruber, Xavier Giraud, Oral presentation at the SynTraCe workshop, Providence, USA.

**10/2012: A. Jahn**, Keith Lindsay, Esther Brady, Bette Otto-Bliesner, Zhengyu Liu, Nicolas Gruber, Xavier Giraud, Oral presentation in the CGD Research Reports at NCAR, Boulder, USA.

## **21st century Arctic September sea-ice extent: concentration, trends, and variability**

**04/2012: A. Jahn**, M. Holland, J. Kay, Poster at the IPY conference, Montreal, Canada.

## **Data needs for sea ice models**

**02/2013: A. Jahn**, Oral presentation at the CliC Steering Committee Meeting, Potsdam, Germany.

**11/2011: A. Jahn**, Oral presentation at the CliC sea ice workshop, Boulder, USA.

## **How robust are model results of the seasonal cycle of Arctic freshwater export?**

**11/2011: A. Jahn**, Oral presentation at the AOMIP workshop, Woods Hole, USA.

## **Late 20th century simulation of Arctic sea-ice and ocean properties in the CCSM4**

**10/2011: A. Jahn**, K. Sterling, M. M. Holland, J. E. Kay, J. A. Maslanik, C. M. Bitz, D. A. Bailey, J. Stroeve, E. C. Hunke, W. H. Lipscomb, Poster at the WCRP climate conference, Denver, USA.

**06/2011: A. Jahn**, K. Sterling, M. M. Holland, J. E. Kay, J. A. Maslanik, C. M. Bitz, D. A. Bailey, J. Stroeve, E. C. Hunke, W. H. Lipscomb, Oral presentation at the IUGG conference, Melbourne, Australia.

**03/2011: A. Jahn**, K. Sterling, M. M. Holland, J. E. Kay, J. A. Maslanik, C. M. Bitz, D. A. Bailey, J. Stroeve, E. C. Hunke, W. H. Lipscomb, Poster at the Gordon Polar Marine Sciences Conference, Ventura, USA.

**02/2011: A. Jahn**, K. Sterling, M. M. Holland, J. E. Kay, J. A. Maslanik, C. M. Bitz, D. A. Bailey, J. Stroeve, E. C. Hunke, W. H. Lipscomb, Oral presentation at the CCSM Polar Climate WG meeting, Boulder, USA.

## **Seasonal cycle of the Fram Strait freshwater export: A model perspective**

**06/2011: A. Jahn**, L. B. Tremblay, R. Newton, M. M. Holland, L. A. Mysak, Oral presentation at IUGG conference, Melbourne, Australia.

**06/2010: A. Jahn**, L. B. Tremblay, R. Newton, M. M. Holland, L. A. Mysak, Oral presentation at IPY Oslo conference, Oslo, Norway.

**03/2010: A. Jahn**, L. B. Tremblay, R. Newton, M. M. Holland, L. A. Mysak, Poster at the "State of the Arctic" conference, Miami, USA.

## **Future freshwater export from the Arctic according to GCM scenarios**

**10/2010: A. Jahn**, L. B. Tremblay, R. Newton, M. M. Holland, L. A. Mysak, Oral presentation at the AOSB-ASOF Workshop on the integrated Arctic Ocean Observing System, Woods Hole, USA.

### **Comparison of the simulated Arctic freshwater export variability from different models**

**10/2010:** A. Jahn, L. B. Tremblay, R. Newton, M. M. Holland, L. A. Mysak, Oral presentation at the 14th AOMIP workshop, Woods Hole, USA.

### **Arctic FW budget in the CCSM4 - a first look**

**07/2010:** A. Jahn, L. B. Tremblay, R. Newton, M. M. Holland, L. A. Mysak, Oral presentation at the CESM Polar Climate WG meeting, Breckenridge, USA.

### **Changes in the freshwater export from the Arctic under doubling of CO<sub>2</sub>**

**06/2010:** A. Jahn, L. B. Tremblay, R. Newton, M. M. Holland, L. A. Mysak, Oral presentation at the IPY Oslo conference, Oslo, Norway.

**03/2010:** A. Jahn, L. B. Tremblay, R. Newton, M. M. Holland, L. A. Mysak, Poster at the “State of the Arctic” conference, Miami, USA.

### **Mentor panel discussions - an easy way to get people talking**

**06/2010:** A. Jahn, Penelope Wagner, Harry Borlase, Jenny Baeseman, Poster at the IPY conference, Oslo, Norway.

### **Arctic freshwater export variability: A detailed model study**

**02/2010:** A. Jahn, L. B. Tremblay, R. Newton, M. M. Holland, L. A. Mysak, Oral presentation at the CESM Polar WG meeting, Boulder, USA.

**12/2009:** A. Jahn, L. B. Tremblay, R. Newton, M. M. Holland, L. A. Mysak, Poster at the AGU fall meeting, San Francisco, USA.

### **Comparison of Arctic freshwater export variability from different models - A first look**

**10/2009:** A. Jahn, Oral presentation at the 13th AOMIP workshop, Woods Hole, USA.

### **Arctic freshwater pathways and freshwater export variability**

**07/2009:** A. Jahn, L. B. Tremblay, R. Newton, M. M. Holland, L. A. Mysak, Oral presentation at the MOCA-09 conference, Montreal, Canada.

**06/2009:** A. Jahn, L. B. Tremblay, R. Newton, M. M. Holland, L. A. Mysak, Oral presentation at the CMOS conference, Halifax, Canada.

### **Effect of the large-scale atmospheric circulation on Arctic Ocean freshwater exchange**

**01/2009:** A. Jahn, L. B. Tremblay, R. Newton, L. A. Mysak, Oral presentation at the 12th AOMIP workshop, Woods Hole, USA.

**04/2008:** A. Jahn, L. B. Tremblay, R. Newton, L. A. Mysak, Oral presentation at the EGU meeting, Vienna, Austria.

**01/2008:** A. Jahn, L. B. Tremblay, R. Newton, L. A. Mysak, Oral presentation at the CESM Polar Climate WG meeting, Boulder, USA.

### **Interannual variability in the Arctic Ocean freshwater balance**

**07/2007:** A. Jahn, L. B. Tremblay, R. Newton, L. A. Mysak, Poster at the international sea ice summer school, Svalbard, Norway.

**05/2007:** A. Jahn, L. B. Tremblay, R. Newton, L. A. Mysak, Oral presentation at the CMOS /CGU/AMS conference, St. John’s, Canada.

**05/2007:** A. Jahn, L. B. Tremblay, R. Newton, L. A. Mysak, Poster at the Arctic Research Consortium of the United States Arctic Forum 2007, Washington DC, USA.

### **Freshwater storage changes in the Arctic Ocean**

**03/2007:** A. Jahn, L. B. Tremblay, R. Newton, L. A. Mysak, Oral presentation at the McGill Graduate Student Research Symposium, Montreal, Canada.

### **Freshwater in the Arctic Ocean**

**09/2006:** A. Jahn, L. B. Tremblay, R. Newton, L. A. Mysak, Oral presentation at the Bjerknes summer school on multidecadal climate variability and teleconnection dynamics, Bergen, Norway.

**06/2006:** A. Jahn, L. B. Tremblay, R. Newton, L. A. Mysak, Oral presentation in the polar research group at Lamont-Doherty Earth Observatory, New York, USA.

## Contribution of vegetation dynamics to climate variations during MIS 3/2

**06/2006: A. Jahn**, M. Claussen, A. Ganopolski, V. Brovkin, Poster at the CMOS conference, Toronto, Canada.

## Quantifying the effect of vegetation dynamics on the climate of the LGM

**06/2005: A. Jahn**, M. Claussen, A. Ganopolski, V. Brovkin, Oral presentation at the CMOS conference, Vancouver, Canada.

## TEACHING ACTIVITIES

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### Courses taught at CU-Boulder

Newly developed 3 credit classes are underlined

**ATOC6800**    **Scientific Writing**, Fall 2019, 3 credit graduate course, with 7 graduate students.

**ATOC4850/**    **Numerical methods and modeling**, Spring 2018 & Spring 2019

**ATOC5850**    3 credit methods course, cross-listed undergraduate and graduate, with 19 & 11 students

**ATOC5051**    **Introduction to Physical Oceanography**, Fall 2016 & 2017 & 2018, 3 credit core graduate course for ATOC students, 9 & 13 & 9 students

**ATOC1060**    **Our changing environment**, Spring 2015 & Spring 2017 & Fall 2020, 3 credit introduction to climate change course for non-science majors, in 2017 and 2020 with weekly recitations, 2020 taught remotely, with 100 & 106 & 84 students

### Seminars taught at CU-Boulder

**ATOC6020**    **Career Development**, Fall 2018, 1 credit seminar, Fall 2018. One of two faculty advisors for a seminar with 18 graduate students on career development, initiated and led by a graduate student.

**ATOC6020**    **Science Communication**, Spring 2018, 1 credit seminar, Spring 2018. Faculty advisor for a seminar with 15 students on science communication, initiated and led by three graduate students.

**ATOC6020**    **Climate Modeling Seminar**, Fall 2016, Spring 2017, Fall 2017, Spring 2018, Fall 2018, Spring 2019, 1 credit seminar, with the topics statistical methods for ensemble simulations (fall 2016), scientific writing (spring 2017), scientific networking (fall 2017), career planning (spring 2018), research tools (fall 2018), presentation skills (spring 2019) for 2–4 students.

### Other teaching activities

**2019**        **Invited polar modeling expert at the CESM Polar Modeling Workshop**, discussed and reviewed polar modeling proposals with students, NCAR, Boulder, USA.

**2018**        **Invited International Polar Climate Summer School lecturer**, lectures/talks on Arctic sea ice change and Arctic climate projections, Nanjing, China.

**2017**        **Invited guest lecturer on Paleoclimate**, Academy of Livelong Learning in Denver in the class “Our Biosphere: Past and future”.

**2017**        **Invited Arctic summer school lecturer**, lectures/talks on Climate Modeling, Arctic sea ice projections, and Sea ice model assessment and student mentoring at the “Connaught Summer Institute in Arctic Science: Atmosphere, Cryosphere, and Climate”, Alliston, Canada.

**2014**        **Teaching methods workshop at NCAR**, participant in a two day teaching methods workshop at NCAR, with a focus on active learning techniques.

- 2013–2014**     **UCAR Science Education Program Staff (SPARK)**, gave several dozen of the public tours at NCAR, to visitors, K-12 student groups, and community groups and participated in school group classroom instruction.
- 2012**            **Facilitator in the NCAR Research Experience Teacher’s Institute**, facilitated the online course “Earth System Science: A Climate Change Perspective” and worked with the teachers on their class modules during the three-week in-residence program.
- 2011**            **Guest lecturer on Polar climate at Howard University**, two guest lectures in the graduate level class ATMOS 201 in the Department for Physics and Astronomy at Howard University, USA.
- 2010 -2011**    **NCAR Girl Scout day**, Science lecturer (2010) and main organizer (2011)
- 2008**            **Graduate course on research-based teaching methods**, 3 credits, “Teaching and Learning in Higher Education” (EDPH689), McGill University, Canada.
- 2006**            **Teaching assistant for “Introduction into Ocean Sciences”** at McGill University.

### Advising of Students and Postdocs

<sup>1</sup> = Jahn as primary advisor for student or postdoc

<sup>2</sup> = Jahn as co-advisor/mentor for student or postdoc

#### Postdocs advised (2)

- 09/2019–**        **Hannah Zanowski**<sup>1</sup>
- 2016–2018**     **Yafang Zhong**<sup>1</sup>  
 - 50% appointment for 18 months; worked remotely from University of Wisconsin-Madison  
 - co-advised with G. Miller & A. Geirsdottir

#### Graduate students advised (7)

- 05/2020–**        **Chris Wyburn-Powell**<sup>1</sup>
- 2017–**            **Patricia DeRepentigny**<sup>1</sup>
- 2017**            **Aaron Schroeder**<sup>1</sup>
- 2017–2020**    **Abigail Smith**<sup>1</sup>(previously Ahlert)  
 - PhD 2021
- 2017–2019**    **Mark England**<sup>2</sup>  
 - PhD 2019, primary advisor Lorenzo Polvani, Columbia Univ.
- 2016–2018**    **Rory Laiho**<sup>1</sup>  
 - MS 2017
- 2016–2018**    **Sifan Gu**<sup>2</sup>  
 - PhD 2018, primary advisor Zhengyu Liu, Univ. Wisconsin

#### Undergraduate students advised (3)

- 2020–2021**    **Sara Reinelt**<sup>1</sup>  
 - undergraduate student research on paleo climate, co-advised with my postdoc Hannah Zanowski
- 2017–2018**    **Kerrie Ellzey**<sup>1</sup>(previously Dochen)  
 - 9 month undergraduate student research on Arctic sea ice
- 2010**            **Daniel Pollak**<sup>2</sup>  
 - SOARS undergraduate summer student at NCAR on Arctic sea ice

#### Committee member at CU (8)

- 2020–**            **Eric Keenan**, ATOC PhD committee member
- 2020–**            **Jed Lenetsky**, Geological Sciences, Master thesis committee member
- 2019**            **Marissa Dattler**, ATOC Master thesis defense committee member



- 2019            **David Harning**, Geological Sciences, PhD defense committee member
- 2018–         **Meghan Helmberger**, Geography PhD committee member
- 2018–2020    **Sean Horvath**, Civil, Environmental & Architectural Engr., PhD committee member
- 2017–2019    **Michael Drew Cameron**, ATOC Master thesis committee member
- 2016–2019    **Michael Gallagher**, ATOC PhD committee member

**Host of visitor to research group (1)**

- 2018            **Clara Burgard**, 2 month visit, PhD student with Dirk Notz at MPI Hamburg

**COMMUNITY SERVICE**

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- Since 2021    **Member of the International Science Steering Group for Arctic Subarctic Ocean fluxes (ASOF)**
- 2019            **Organizer of 2019 SIMIP workshop**, Winnipeg, Canada
- 2019            **Session chair at the 15th AMS Polar Conference**, Boulder, USA
- 2019            **NOAA proposal review panelist**
- Since 2018    **Co-lead of one of the WCRP-Polar Climate Predictability Initiatives**, Theme “Improve knowledge and understanding of past polar climate variations (100+ years)”
- Since 2018    **Advisory Board member for the DOE project HiLAT-RASM**
- 2018–2019    **Science Requirements Advisory Panel for NCAR’s next supercomputer**
- 2018–2020    **US-CLIVAR Paleo AMOC Task Team member**,
- 2018            **Expert reviewer for IPCC reports**, Reviewed chapters in special IPCC reports (Global Warming of 1.5°C; Ocean and Cryosphere in a Changing Climate).
- 2018            **External reviewer for two scientific promotion/hiring decisions**
- 2018            **Session convenor and chair at POLAR2018**, Davos, Switzerland, session “Sea ice Modeling and Prediction”
- 2017            **Co-organizer of the 2017 Polar prediction & SIMIP workshop**, Bremerhaven, Germany
- 2015            **Organizer of CliC SSG annual meeting**, Boulder, USA
- 2014            **Co-Organizer of the 2014 SIMIP workshop/ Large-Scale Sea-Ice Simulations Workshop**, Reading, UK
- Since 2014    **Co-chair of Sea ice MIP (SIMIP) for CMIP6**,  
<https://www.wcrp-climate.org/modelling-wgcm-mip-catalogue/cmip6-endorsed-mips-article/1056-modelling-cmip6-simip>
- Since 2014    **Co-chair of Sea ice and Climate Modeling Forum of CliC-WCRP**,  
<http://www.climate-cryosphere.org/activities/seaicemodeling>
- 2014–2018    **WCRP-CliC steering committee member**
- 2015            **Session convenor at IUGG 2015, Prague, Czech Republic**, proposed and organized session on “Evaluation of the Cryosphere in CMIP5 Models”, but could not chair it due to parental leave.

- Since 2011**    **Proposal reviewer for NSF**
- 2011–2012**    **Co-convenor and co-chair at IPY 2012**, session “Diminishing snow and ice”, Montreal, Canada.
- 2011–2012**    **Co-chair at 2011 IUGG**, session “Future state of the Arctic and potential impact”, Melbourne, Australia.
- 2010**            **NSF proposal review panelist**
- 2010–2011**    **Member of the IUGG Advisory Group of Young Scientists**, IAPSO representative
- 2009–2010**    **Main organizer of a two-day Association for Polar Early Career Scientists (APECS) career development workshop** before the IPY conference, Oslo, Norway.
- 2009**            **Organizer of an APECS career panel at the MOCA-2009 conference**, Montreal, Canada.
- Since 2008**    **Reviewer for journal articles**

*Last updated: January 29, 2021*