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Project Scientist I, National Center for Atmospheric Research  
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*Updated: October 2022*

## EDUCATION

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UNIVERSITY OF COLORADO	Boulder, CO
Ph.D., Atmospheric and Oceanic Sciences, 2015	
M.S., Atmospheric and Oceanic Sciences, 2012	
THE COLORADO COLLEGE	Colorado Springs, CO
B.A., Physics, Magna Cum Laude, 2008	

## PROFESSIONAL EXPERIENCE

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### *National Center for Atmospheric Research (NCAR), Boulder, CO*

2019-pres. **Project Scientist I:** Polar climate modeling and analysis of the Arctic and Antarctic. Supervisor: Dr. Marika Holland

2017-2019 **Associate Scientist II:** Sea Ice modeling: Evaluate and test sea ice (CICE) parameterizations and polar climate in the Community Earth System Model (CESM). Create documentation, develop code, and act as liaison for Polar Climate Working Group and CICE Consortium. Supervisor: Dr. David Bailey.

2016-2017 **Postdoctoral Researcher:** Analysis of the Southern Ocean mixed layer in observations and in models. Tested and amended model parameterizations of surface forced near-surface mixing. Supervisor: Dr. William Large.

### *Cooperative Institute for Research in Environmental Sciences (CIRES), Boulder, CO*

2012-2016 **Professional Research Assistant:** Regional climate modeling and data analysis of the Arctic Climate System. Focused on atmosphere-ocean-sea ice energy fluxes during extreme winds. Supervisor: Dr. John Cassano

2010-2012 **Graduate Research Assistant:** Analysis of model, satellite, and in-situ data of atmosphere-ocean interactions around Greenland during extreme wind events. Adviser: Dr. John Cassano.

## PUBLICATIONS

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### **REFEREED (chronological):**

Crosta X., K.E Kohfeld, H.C. Bostock, M. Chadwick, A.K. DuVivier, et al. Antarctic sea ice over the past 130,000 years, Part 1: A review. *Climate of the Past*. <https://doi.org/10.5194/egusphere-2022-99>

Harrison, C., T. Rohr, A.K. DuVivier, E.A. Maroon, et al. (2022). A New Ocean State After Nuclear War. AGU Advances, in-press. <https://doi.org/10.1029/2021AV000610>

Kay, J.E., P. DeRepentigny, M.M. Holland, D.A. Bailey, A.K. DuVivier, et al. (2022). Less surface sea ice melt in the CESM2 improves Arctic sea ice simulation with minimal non-polar climate impacts. *Journal of Advances in Modeling Earth Systems*, e2021MS002679. <https://doi.org/10.1029/2021MS002679>

DuVivier, A.K., M.M. Holland, L. Landrum, H.A. Singh, D.A. Bailey, E.A. Maroon (2021). Impacts of sea ice mushy thermodynamics in the Antarctic on the Coupled Earth System. *Geophysical Research Letters*, 48(18), e2021GL094287. <https://doi.org/10.1029/2021GL094287>

Blanchard-Wrigglesworth, E., A. Donohoe, L.A. Roach, A.K. DuVivier, C.M. Bitz (2021). High-frequency sea ice

- variability in observations and models. *Geophysical Research Letters*, 48(14), e2020GL092356. <https://doi.org/10.1029/2020GL092356>
- Cassano, J. J., Nigro, M. A., Seefeldt, M. W., M.Katurji, K. Guinn, G. Williams, & **A.K. DuVivier** (2021). Antarctic atmospheric boundary layer observations with the Small Unmanned Meteorological Observer (SUMO). *Earth System Science Data*, 13(3), 969–982. <https://doi.org/10.5194/essd-13-969-2021>
- Webster, M. A., A.K. DuVivier, **M.M. Holland**, & D.A. Bailey (2021). Snow on Arctic Sea Ice in a Warming Climate as Simulated in CESM. *Journal of Geophysical Research: Oceans*, 126(1). <https://doi.org/10.1029/2020JC016308>
- Bailey, D. A., M.M. Holland, **A.K. DuVivier**, E.C. Hunke, & A.K. Turner (2020). Impact of a New Sea Ice Thermodynamic Formulation in the CESM2 Sea Ice Component. *Journal of Advances in Modeling Earth Systems*, 12(11). <https://doi.org/10.1029/2020MS002154>
- Chang, P., Zhang, S., Danabasoglu, G., Yeager, S. G., Fu, H., Wang, H., et al. (2020). An Unprecedented Set of High Resolution Earth System Simulations for Understanding Multiscale Interactions in Climate Variability and Change. *Journal of Advances in Modeling Earth Systems*, 12(12). <https://doi.org/10.1029/2020MS002298>
- Danabasoglu, G., J.F. Lamarque, J. Bacmeister, D.A. Bailey, **A.K. DuVivier**, J. Edwards, et al. (2020). The Community Earth System Model Version 2 (CESM2). *Journal of Advances in Modeling Earth Systems*, 12(2), e2019MS001916. <https://doi.org/10.1029/2019MS001916>
- DuVivier, A. K.**, Holland, M. M., Kay, J. E., Tilmes, S., Gettelman, A., & Bailey, D. A. (2020). Arctic and Antarctic Sea Ice Mean State in the Community Earth System Model Version 2 and the Influence of Atmospheric Chemistry. *Journal of Geophysical Research: Oceans*, 125(8). <https://doi.org/10.1029/2019JC015934>
- DuVivier, A. K.**, DeRepentigny, P., Holland, M. M., Webster, M., Kay, J. E., & Perovich, D. (2020). Going with the floe: tracking CESM Large Ensemble sea ice in the Arctic provides context for ship-based observations. *The Cryosphere*, 14(4), 1259–1271. <https://doi.org/10.5194/tc-14-1259-2020>
- Greco, S., G.D. Emmitt, **A.K. DuVivier**, K. Hines, & M. Kavaya (2020). Polar Winds: Airborne Doppler Wind Lidar Missions in the Arctic for Atmospheric Observations and Numerical Model Comparisons. *Atmosphere*, 11(11), 1141. <https://doi.org/10.3390/atmos11111141>
- Singh, H. K. A., L. Landrum, M.M. Holland, D.A. Bailey, & **A.K. DuVivier** (2020). An Overview of Antarctic Sea Ice in the CESM2: Analysis of the Seasonal Cycle, Predictability, and Atmosphere-Ocean-Ice Interactions. *Journal of Advances in Modeling Earth Systems*. <https://doi.org/10.1029/2020MS002143>
- Small, R. J., **A.K. DuVivier**, D.B. Whitt, M.C. Long, I. Grooms, & W.G. Large (2020). On the control of subantarctic stratification by the ocean circulation. *Climate Dynamics*. <https://doi.org/10.1007/s00382-020-05473-2>
- Gettelman, A., Mills, M. J., Kinnison, D. E., Garcia, R. R., Smith, A. K., Marsh, D. R., et al. (2019). The Whole Atmosphere Community Climate Model Version 6 (WACCM6). *Journal of Geophysical Research: Atmospheres*, 124(23), 12380–12403. <https://doi.org/10.1029/2019JD030943>
- Huang, Y., X. Dong, D.A. Bailey, M.M. Holland, B. Xi, **A.K. DuVivier**, J.E. Kay, L. Landrum, Y. Deng (2019). Thicker clouds and accelerated Arctic sea ice decline: The atmosphere-sea ice interactions in spring. *Geophysical Research Letters*, <https://doi.org/10.1029/2019GL082791>
- Large W.G., E.G. Patton, **A.K. DuVivier**, P.P. Sullivan, L. Romero (2019). Similarity theory in the surface layer of large-eddy simulations of the wind, wave, and buoyancy forced Southern Ocean. *Journal of Physical Oceanography*, <https://doi.org/10.1175/JPO-D-18-0066.1>
- Meehl, G.A., J.M. Arblaster, C. Chung, M.M. Holland, **A.K. DuVivier**, L. Thompson, D. Yang, C.M. Bitz (2019): Sustained ocean changes contributed to sudden Antarctic sea ice retreat in late 2016. *Nature communications*, 10, 14, <https://doi.org/10.1038/s41467-018-07865-9>
- DuVivier, A.K.**, W.G. Large, R.J. Small (2018), Argo observations of the Deep Mixing Band in the Southern Ocean: A salinity modeling challenge, *Journal of Geophysical Research: Oceans*, <https://doi.org/10.1029/2018JC014275>
- Brunke, M.A., J.J. Cassano, N. Dawson, **A.K. DuVivier**, W. J. Gutowski, J. Hamman, W. Maslowski, B. Nijssen, J.R.

- Erye, J. Renteria, A. Roberts, X. Zeng (2018): Evaluation of the atmosphere-land-ocean-sea ice interface processes in the Regional Arctic System Model Version 1 (RASM) using local and globally gridded observations. *Geoscientific Model Development*. <https://doi.org/10.5194/gmd-2018-104>
- Cassano, J.J., **A.K. DuVivier**, A. Roberts, M. Hughes, M. Seefeldt, M. Brunke, A. Craig, B. Fisel, W. Gutowski, J. Hamman, M. Higgins, W. Maslowski, B. Nijssen, R. Osinski, X. Zeng (2017): Development of the Regional Arctic System Model (RASM): Near Surface Atmospheric Climate Sensitivity. *Journal of Climate*. <https://doi.org/10.1175/JCLI-D-15-0775.1>
- DuVivier, A.K.**, J. J. Cassano, S. Greco, G.D. Emmitt (2017), A Case Study of Observed and Modeled Barrier Flow in the Denmark Strait in May 2015, *Monthly Weather Review*, <https://doi.org/10.1175/MWR-D-16-0386.1>
- Hamman, J., B. Nijssen, M. Brunke, J. Cassano, A. Craig, **A.K. DuVivier**, M. Hughes, D. Lettenmaier, W. Maslowski, R. Osinski, A. Roberts, X. Zeng (2016), Land Surface Climate in the Regional Arctic System Model, *Journal of Climate*, <https://doi.org/10.1175/JCLI-D-15-0415.1>
- DuVivier, A.K.**, J. J. Cassano, A. P. Craig, J. Hamman, W. Maslowski, B. Nijssen, R. Osinski, and A. Roberts (2016), Winter atmospheric buoyancy forcing and oceanic response during strong wind events around southeastern Greenland in the Regional Arctic System Model (RASM) for 1990-2010, *Journal of Climate*, 29, 975–994, <https://doi.org/10.1175/JCLI-D-15-0592.1>
- DuVivier, A.K.**, J.J. Cassano, (2016): Comparison of wintertime mesoscale winds over the ocean around southeastern Greenland in WRF and ERA-Interim. *Climate Dynamics*, 46(7), 2097-2211, <https://doi.org/10.1007/s00382-015-2697-8>
- DuVivier, A.K.**, J.J. Cassano, (2015): Exploration of turbulent heat fluxes and wind stress curl in WRF and ERA-Interim during wintertime mesoscale wind events around southeastern Greenland. *Journal of Geophysical Research: Atmospheres*, 120, 3593-3609. <https://doi.org/10.1002/2014JD022991>
- Roberts, A., A. Craig, W. Maslowski, R. Osinski, **A. DuVivier**, M. Hughes, B. Nijssen, J.J. Cassano, M. Brunke, (2014). Simulating transient ice-ocean Ekman transport in the Regional Arctic System Model and Community Earth System Model. *Annals of Glaciology*, 69, <https://doi.org/10.3189/2015AoG69A760>
- DuVivier, A.K.**, and J. Cassano (2013). Evaluation of WRF model resolution on simulated mesoscale winds and surface fluxes near Greenland. *Monthly Weather Review*, 141, 941-963. <https://doi.org/10.1175/MWR-D-12-00091.1>
- Anderson, D., C. Baulcomb, **A. DuVivier**, A. Gupta, (2010). Indian Summer Monsoon During the Last Two Millennia. *Journal of Quaternary Science*, 25, 911-917, <https://doi.org/10.1002/jqs.1369>

#### **IN PREPARATION or IN REVIEW:**

- Coupe, J., C. Harrison, A. Robock, **A.K. DuVivier**, et al. Sudden Reduction of Antarctic Sea Ice Despite Cooling After Nuclear War. *In Review at Journal of Geophysical Research Oceans*.
- DuVivier, A.K.**, Holland, M.M., Vavrus, S., Landrum, L., Thacker, R., Shields, C. Arctic Change is rough: Impacts of sea ice roughness on air-sea ice processes. *In preparation for Climate Dynamics*.
- DuVivier, A.K.**, M. Molina, L. Landrum, M.M. Holland. Changes in Ross Sea Coastal Polynyas over time determined by Machine Learning. *In Preparation for Journal of Climate*.
- DuVivier, A.K.**, M.M. Holland, L. Landrum, K. Krumhardt, Z. Sylvester. Changing coastal Antarctic ice and the impact on biological processes. *In Preparation*.

#### **OTHER:**

- Z. Sylvester, C. Brooks, **A.K. DuVivier**, K. Krumhardt, L. Landrum, M.M. Holland, M. Long, S. Jenouvrier, S. Labrousse, L. Bourreau. Hot spots in the ice: revealing the importance of polynyas for sustaining present and future Antarctic marine ecosystems. White paper submitted to Convention on the Conservation of Antarctic Marine Living Resources (CCAMLR) Working Group on Ecosystem Monitoring and Management. June 2022.
- A.K. DuVivier**. APECS Career Blog series. May 2019
- A.K. DuVivier** and E.C. Hunke. Community driven sea ice modeling with the CICE Consortium. *Witness the Arctic*.

June 2018

Lazzara, M.A., L.J. Welhouse, J.E. Thom, J.J. Cassano, **A.K. DuVivier**, G.A. Weidner, L.M. Keller, and L. Kalnajs, (2012): Automatic weather station (AWS) program 2011-2012 field season report. *Antarctic Record*.

## **FUNDED GRANTS**

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Principal Investigator, “Hot spots in the ice: revealing the importance of polynyas for sustaining present and future Antarctic marine ecosystems”, NASA, \$1,185,450, 9/15/20-9/14/25

Named Personnel, “Collaborative Research: Interactions between Arctic cyclones, atmospheric rivers, and sea ice in a warming climate”, NSF, \$396,216, 2/1/21-1/31/24

Co-PI, NSF, “NNA Track 1: Collaborative Research: Maritime Transportation in a Changing Arctic: Navigating Climate and Sea Ice Uncertainties”, NSF, \$134,367, 1/1/20-12/31/22

Principal Investigator, “CICE and Icepack sea ice model tutorial”, NSF, \$15,415, 9/20/19-9/30/22

## **PRESENTATIONS**

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### **INVITED:**

**DuVivier, A.K.**, L. Landrum, K. Krumhardt, Z. Sylvester, M.M. Holland, C. Brooks, S. Jenouvrier, S. Labrousse, L. Bourreau, M. Long: Hot spots in the Ice: using satellites to reveal relationships between marine ecosystems and sea ice in coastal Antarctica. *22nd William T. Pecora Memorial Remote Sensing Symposium* - oral presentation, Denver, CO, October 2022.

**DuVivier, A.K.**, L. Landrum, M.M. Holland: Modeling climate extremes in the new Arctic and the possible impacts on vessel traffic. *Aspen Global Change Institute Workshop: Arctic Climate and Weather Extremes: Detection, Attribution, and Future Projection* - oral presentation, Aspen, CO, May 2022.

**DuVivier, A.K.**, M.M. Holland, L. Landrum, S. Vavrus, C. Shields, R. Thaker: Arctic change is rough: impacts of sea ice roughness on air-sea ice processes. *University of Wisconsin Climate, People, and the Environment Program (CPEP) seminar series* - oral presentation, Madison, WI, April 2022.

**DuVivier, A.K.**, M.M. Holland, L. Landrum, H. Singh, D. Bailey, C. Brooks, S. Jenouvrier: Mushy ice leads to saltier seas: impacts of Antarctic coastal sea ice production. *Antarctic Sea Ice and Southern Ocean Seminars* - oral presentation, virtual, March 2021.

**DuVivier, A.K.**, P. DeRepentigny, M. Webster, M.M. Holland, J.E. Kay, D.K. Perovich, D.A. Bailey: Going with the floe: using the CESM Large Ensemble sea ice to better understand climate- and process- scale observations. *2019 AGU Annual Meeting* – oral presentation, San Francisco, CA, December 2019.

**DuVivier, A.K.**, P. DeRepentigny, M.M. Holland, M. Webster, J.E. Kay, D. Perovich: Using the CESM large ensemble to provide context for ship-based observations. *2019 NOAA Seminar* – oral presentation, Boulder, CO, June 2019.

**DuVivier, A.K.**, M. Seefeldt, J.J. Cassano, M. Hughes: Regional Arctic System Model (RASM) sensitivity to clouds. *Kay Group meeting* – oral presentation, Boulder, CO, August 2015.

**DuVivier, A.K.**: How do strong winds around Greenland impact the ocean? *The Colorado College Environmental Program Seminar* - oral presentation, Colorado Springs, CO, September 2013.

### **CONTRIBUTED:**

**DuVivier, A.K.**, M. Molina, M.M. Holland, L. Landrum, K. Krumhardt, Z. Sylvester, C. Brooks: Using Self Organizing Maps to Project Policy Relevant Changes in Coastal Sea Ice in the Ross Sea, Antarctica. *Collective Madison Meeting/17th Annual Conference on Polar Meteorology and Oceanography* - poster presentation, Madison, WI, August 2022.

**DuVivier, A.K.**, M.M. Holland, S. Vavrus, R. Thaker, C. Shields: Arctic Change is Rough: Impacts of Sea Ice

- Roughness on Air-Sea ice processes. *Collective Madison Meeting/17th Annual Conference on Polar Meteorology and Oceanography* - poster presentation, Madison, WI, August 2022.
- DuVivier, A.K.,** L. Landrum, K. Krumhardt, Z. Sylvester, M.M. Holland, C. Brooks, S. Jenouvrier, S. Labrousse, L. Bourreau, M. Long: Hot spots in the Ice: revealing relationships between marine ecosystems and sea ice in coastal Antarctica. *SCAR Open Sciences Meeting* - oral presentation, virtual, August 2022.
- DuVivier, A.K.,** M. Molina, M.M. Holland, K. Krumhardt, L. Landrum, Z. Sylvester: Assessing Antarctic polynyas and their impacts on biology. *Polar Climate Working Group Winter meeting* - oral presentation, virtual, March 2022.
- DuVivier, A.K.,** A. Lindemann: Arctic Shifts (Art-Science Innovative Session). *2022 AGU Ocean Sciences Meeting* - oral presentation, virtual, March 2022.
- DuVivier, A.K.,** M.M. Holland, L. Landrum, S. Vavrus, C. Shields, R. Thaker: Arctic change is rough: impacts of sea ice roughness on air-sea ice processes. *2022 AGU Ocean Sciences Meeting* - oral presentation, virtual, February 2022.
- DuVivier, A.K.,** & M. Molina: Adventures in Self-Organizing Maps using Jupyter and the CESM2-LE. *Earth System Data Science (ESDS) works in progress series* - oral presentation, virtual, January 2022.
- DuVivier, A.K.,** M.M. Holland, L. Landrum, H. Singh, D. Bailey: Mushy ice and saltier seas: coupled impacts of sea ice thermodynamics in Antarctic coastal regions. *16th Annual Conference on Polar Meteorology and Oceanography* - oral presentation, virtual, June 2021.
- DuVivier, A.K.,** M.M. Holland, L. Landrum, H. Singh, D. Bailey: Mushy ice and saltier seas: coupled impacts of sea ice thermodynamics in Antarctic coastal regions. *CESM annual workshop* - oral presentation, virtual, June 2021.
- DuVivier, A.K.,** M.M. Holland, L. Landrum, H. Singh, D. Bailey: Coupled impacts of sea ice thermodynamics due to Antarctic coastal ice production. *Polar Climate Working Group Winter Meeting* - oral presentation, virtual, February 2021.
- DuVivier, A.K.,** M.M. Holland, L. Landrum, H. Singh, D. Bailey: Changing sea ice in Antarctic coastal polynyas in the Community Earth System Model (CESM). *AGU Annual Meeting* - poster presentation, virtual, December 2020.
- DuVivier, A.K.,** M.M. Holland, J.E. Kay, S. Tilmes, A. Gettelman, D.A. Bailey: Arctic and Antarctic Sea Ice State in CESM2 and the impact of clouds. *Polar Climate Working Group Winter Meeting* - oral presentation, Boulder, CO, February 2020.
- DuVivier, A.K.,** M.M. Holland, J.E. Kay, S. Tilmes, A. Gettelman, D.A. Bailey: The impact of atmospheric chemistry on Arctic clouds and sea ice state in the Community Earth System Model version 2. *2019 AGU Annual Meeting* – poster presentation, San Francisco, CA, December 2019.
- DuVivier, A.K.,** P. DeRepentigny, M.M. Holland: Going with the floe as Arctic sea ice variability increases. *Arctic Futures 2050* – poster presentation, Washington, DC, September 2019.
- DuVivier, A.K.,** M.M. Holland, S. Tilmes, J. Kay, D. Bailey, A. Gettelman: The impact of cloud-aerosol interactions on Arctic and Antarctic sea ice in the community Earth System Model version 2. *2019 CESM Annual Workshop* – oral presentation, Boulder, CO, June 2019.
- DuVivier, A.K.,** M.M. Holland, S. Tilmes, J. Kay, D. Bailey, A. Gettelman: Why does the equilibrium Arctic and Antarctic sea ice state differ in the Community Earth System Model version 2 experiments? *15th Annual Conference on Polar Meteorology and Oceanography* – oral presentation, Boulder, CO, May 2019.
- DuVivier, A.K.,** M.M. Holland, D. Bailey, J.E. Kay, A. Gettelman, S. Tilmes: Arctic and Antarctic Explorations in Differences in CESM2 CMIP6 Preindustrial Experiments. *CESM Polar Climate Working Group Winter Meeting* – oral presentation, Boulder, CO, February 2019.
- DuVivier, A.K.,** M.M. Holland, D. Bailey, T. Krumpen, C. Harrison: Using the CESM large ensemble to explore sea ice conditions possible during the MOSAiC field experiment. *2018 AGU Annual Meeting* – oral presentation, Washington, DC, December 2018.
- DuVivier, A.K.,** E.C. Clare, A. Craig, D. Bailey: CICE-Consortium Town Hall: Sea Ice Model Development for and by the Community. *2018 AGU Annual Meeting* – town hall, Washington, DC, December 2018.

- DuVivier, A.K.:** Overview of near surface winds near the Labrador Sea. *2018 CESM annual meeting* – oral presentation, Boulder, CO, June 2018.
- DuVivier, A.K.:** Model experiments provide useful context for field experiments. *Arctic Change workshop* - poster presentation, Boulder, CO, April 2018.
- DuVivier, A.K., W.G. Large, R.J. Small:** The impact of subsurface salinity structure on deep mixed layer development in the Southern Ocean. *2018 AGU Ocean Sciences Meeting* – oral presentation, Portland, OR, February 2018.
- DuVivier, A.K., W.G. Large, G. Danabasoglu, E. Patton, P. Sullivan, M. Levy:** Investigating Southern Ocean Mixed Layer Biases. *CESM Ocean Model Working Group Winter Meeting* – oral presentation, Boulder, CO, February 2017.
- DuVivier, A.K.:** Modeled air-sea interactions around southeastern Greenland. *CGD Seminar* - oral presentation. Boulder, CO, October 2016.
- DuVivier, A.K., J.J. Cassano, S. Greco:** Analysis of barrier wind event near Greenland during the May 2015 Polar Winds Aircraft Campaign. *CIRES Rendezvous* - poster presentation, Boulder, CO, May 2016.
- DuVivier, A.K., J.J. Cassano, A. Craig, J. Hamman, W. Maslowski, B. Nijssen, R. Osinski, A. Roberts:** Winter oceanic response during strong wind events around southeastern Greenland in the Regional Arctic System Model (RASM) for 1990-2010. *2016 AGU Ocean Sciences Meeting* - oral presentation, New Orleans, LA, February 2016.
- DuVivier, A.K., J.J. Cassano, A. Craig, J. Hamman, W. Maslowski, B. Nijssen, R. Osinski, A. Roberts:** Winter oceanic response during strong wind events around southeastern Greenland as modeled over 20 winters in the Regional Arctic System Model (RASM). *CIRES Rendezvous* - poster presentation, Boulder, CO, May 2015.
- DuVivier, A.K., J.J. Cassano:** Analysis of wintertime mesoscale winds and their impact on the oceans around southeastern Greenland. *High Latitude Dynamics Workshop* - oral presentation, Rosendal, Norway, March 2015.
- DuVivier, A.K. and J.J. Cassano:** Wintertime mesoscale winds and their impact on the oceans around southeastern Greenland. *ESRL Physical Sciences Division Seminar* - oral presentation, Boulder, CO, February 2015.
- DuVivier, A.K., J.J. Cassano, M. Hughes, S. Knuth, and A. Roberts:** Using WRF in the coupled Regional Arctic System Model (RASM): sensitivity to atmospheric processes. *2014 WRF User's Workshop* - oral presentation. Boulder, CO, June 2014.
- DuVivier, A.K. and J.J. Cassano:** Analysis of wintertime mesoscale winds and turbulent fluxes around southeastern Greenland. *CIRES Rendezvous* - poster presentation. May 2014.
- DuVivier, A.K., J.J. Cassano, R. Osinski, A. Roberts, T. Craig, W. Maslowski, J. Clement-Kinney:** Modeled oceanic response to realistic atmospheric forcing during extreme mesoscale events around Greenland. *12<sup>th</sup> annual polar AMS meeting* - poster presentation, Seattle, WA, April 2013.
- DuVivier, A.K., J.J. Cassano, M. Hughes, and S. Knuth:** RASM Atmosphere Update. *RASM biannual meeting* - oral presentation, Seattle, WA, April 2013.
- DuVivier, A.K., J.J. Cassano, and M. Hughes:** RASM Atmosphere Update. *RASM biannual meeting* - oral presentation, Monterey, CA - November 2012.
- DuVivier, A.K. and J.J. Cassano:** How do mesoscale winds around Greenland impact the ocean? *CIRES Graduate Student Seminar Series* - oral presentation, Boulder, CO, October 2012.
- DuVivier, A.K. and J.J. Cassano:** Evaluation of WRF model resolution on simulated mesoscale winds and surface fluxes near Greenland. *International Polar Year Conference* - oral presentation, Montreal, Canada, April 2012.
- DuVivier, A.K. and J.J. Cassano:** The effect of WRF resolution: case study of an easterly tip jet off Cape Farewell, Greenland. *American Geophysical Union Annual Meeting* - poster presentation, San Francisco, CA, December 2011.
- DuVivier, A.K. and J.J. Cassano:** The effect of WRF resolution: case study of an easterly tip jet off Cape Farewell, Greenland. *WRF User's Workshop* - oral presentation, Boulder, CO, June 2011.

**DuVivier, A.K.** and J.J. Cassano: Understanding the effects of model resolution on winds and surface fluxes for an easterly tip jet during the Greenland Flow Distortion Experiment. *11<sup>th</sup> annual Polar AMS Meeting* - poster presentation, Boston, MA, May 2011.

**DuVivier, A.K.:** Reconstruction of the Southwest Asian Monsoon. *Colorado Springs Undergraduate Research Forum* - poster presentation, Colorado Springs, CO, April 2006.

## **SERVICE**

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### ***NCAR/UCAR INTERNAL:***

2022 CESM Tutorial Chair for 2023 tutorial

2018-present CESM Tutorial Organizing Committee Member and Instructor

2020-2022 Advanced Study Program (ASP) postdoctoral candidate reviewer

2021-2022 NCAR Design and hiring committees for the Education, Engagement, & Early-Career Development (EdEC)

2018-2021 Early Career Scientists Assembly (ECSA) Executive Committee Member and Climate and Global Dynamics (CGD) Lab representative

2018-2020 CESM Polar Modeling Workshop Organizing Committee and Instructor

2019-2020 Consultant for Dr. Carolyn Fish and her graduate student Michala Garrison in Faculty Innovators Program

### ***EXTERNAL:***

2015-present AMS Polar Meteorology and Oceanography Committee  
Chair: 05/2021-12/2022  
Vice Chair: 05/2019-05/2021  
Member: 11/2015-12/2022  
Program chair for 16th Conference on Polar Meteorology and Oceanography - 2021, virtual  
Program chair for 17th Conference on Polar Meteorology and Oceanography - 2022, Madison, WI

2019-2020 CICE Tutorial Organizing Committee Chair and Instructor

2019 APECS Webinar Series Speaker for Polar Science 101: Coupled Climate Modeling

### ***JOURNAL REVIEWER:***

Journal of Glaciology  
Journal of Climate  
Polar Research  
Quarterly Journal of the Royal Meteorological Society  
Geophysical Research Letters  
Ocean Modeling  
Scientific Reports  
International Journal of Climatology  
International Panel on Climate Change Special Issue for Ocean and Cryosphere  
The Cryosphere  
Nature Climate Change  
Nature Communications Earth & Environment  
Geoscientific Model Development  
Ocean Science  
Climate Dynamics  
Journal of Marine Systems  
Journal of Geophysical Research: Atmospheres  
Journal of Geophysical Research: Oceans



**PROPOSAL REVIEWER:**

National Science Foundation - Office of Polar Programs

**PROFESSIONAL SOCIETY MEMBERSHIPS:**

American Geophysical Union (AGU)

American Meteorology Society (AMS)

Arctic Research Consortium of the United States (ARCUS)

Association of Polar Early Career Scientists (APECS)

**MENTORING:**

Writing mentor for the Significant Opportunities in Atmospheric Research and Science (SOARS) program  
undergraduate students - 2017, 2018, 2019, 2021 (4 students)

Postdoc co-supervisor - 2021 (1 postdoc)

Graduate students informal mentor and research collaborator - 4 students

**UNIVERSITY OUTREACH:**

Interviewee/Subject for University of Connecticut Fine Arts and Media Design Science Visualization Course - [Final film](#) "Climate Change: A Call to Action" won honorable mention in the One Earth Film Festival- 2022.

Panelist for CU Boulder ATOC "Careers at National Labs" event - 2018, 2019, 2021

Invited Course Speaker - "Rapid Climate Change: The "New" Arctic", North Central College, 04/2022

Invited Course Speaker - "Rapid Climate Change at the Poles", North Central College, 11/2021

Invited Course Speaker - "Ice is nice: how climate models inform our future", North Central College, 04/2021

Invited Seminar Speaker - "Ice is nice: how climate models inform our future", Johnson C. Smith University, 11/2021

Invited Course Speaker - "Coupled Earth System Modeling: Making it work", Williams College, 11/2019

**OTHER OUTREACH:**

Interviewee for American Meteorological Society Clear Skies Ahead Podcast ([link](#)) - 02/2022

Guest Expert on "BBC World News" - 12/2021

Interviewee for NCAR "Meet The Experts" - 12/2020

Class Visitor at Angevine Middle School - "A Scientist's Journey" - 12/2020

Panelist for Watershed High School - 03/2020

Speaker and Arctic Expert for "Oceans First", local ocean conservation organizers - 02/2020

Volunteer at WOW Children's museum, girls in science program- 02/2020

Volunteer at NCAR Super Science Saturday - 2016, 2018, 2019

**HONORS AND AWARDS**

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2014	Certificate in College Teaching: Graduate Teacher Program, University of Colorado, Boulder, CO
2009-2012	NOAA/CIRES Graduate Student Fellowship: University of Colorado, Boulder, CO
2012	Best Talk in CIRES Graduate Student Seminar Series: University of Colorado, Boulder, CO
2011	Atmospheric and Oceanic Sciences Travel Grant for <i>On the Cutting Edge</i> Professional Development Workshop: University of Colorado, Boulder, CO
2010	Best Should Teach Silver Award: Graduate Teacher Program, University of Colorado, Boulder, CO
2008	Phi Beta Kappa
2008	Outstanding Physics Student: The Colorado College, Colorado Springs, CO
2004-2008	Dean's List: The Colorado College, Colorado Springs, CO
2004-2008	Colorado College Scholar – Scholarship: The Colorado College, Colorado Springs, CO



2007 Venture Grant – *What Makes a Scientist? The life of Geologist James Hutton*: The Colorado College, Colorado Springs, CO

2004 AP Scholar with Distinction

## OTHER EXPERIENCE AND PROFESSIONAL DEVELOPMENT

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2019 **Participant:** Next Generation Polar Researchers Leadership Symposium, Catalina Island, CA. *Training and networking for early career polar researchers for interdisciplinary research careers.*

2017 **Participant:** Polar Science Communication Workshop, Boulder, CO. *Participated in a workshop organized by the Association of Polar Early Career Scientists and the Alan Alda Center to improve oral and written science communication skills.*

2016 **Participant:** Sea Ice Camp, Barrow, AK. *Participated in a workshop to bring together sea ice observers and modelers. Included field observations on sea ice around Barrow.*

2014 **Visiting Instructor:** The Colorado College, Colorado Springs, CO. *Taught upper-level undergraduate atmospheric physics and dynamics. Prepared inquiry-focused activities and assessments, and advised student course projects.*

2012 **Instructor:** University of Colorado, Boulder, CO. *Prepared and presented lectures, exams, projects, homework, in class activities for intensive month-long summer weather course.*

2012 **Antarctic Field Assistant:** McMurdo Station, Antarctica. *Repaired and tested automatic weather stations. Flew unmanned planes to sample atmospheric boundary layer.*

2010-2011 **Lead Graduate Teaching Assistant:** University of Colorado, Boulder, CO. *Created departmental TA training, led workshops, videotaped and consulted with graduate students.*

2009-2010 **Teaching Assistant:** University of Colorado, Boulder, CO  
*Prepared, taught, and graded material for atmospheric science courses.*

2009 **Student Research Assistant:** National Oceanic and Atmospheric Administration (NOAA), Boulder, CO. *Remote-sensing observations of atmospheric boundary layer. Supervisor: Dr. Arlyn Andrews.*

2008 **Summer Intern:** Colorado State University, Fort Collins, CO. *Icosahedral numerical approximations. Adviser: Dr. David Randall.*

2005-2008 **Tutor:** The Colorado College, Colorado Springs, CO. *Helped students with all levels of undergraduate physics and mathematics. Assisted individuals in improving scientific writing.*

2004-2008 **Cool Science Co-President/Member:** The Colorado College, Colorado Springs, CO. *Developed and presented scientific concepts and demonstrations to K-12 students.*

2007 **Summer Intern:** National Institute of Standards and Technology (NIST), Boulder, CO. *Developed laser instrumentation to measure biological temperature changes. Supervisor: Dr. Ralph Jimenez.*

2005 **Summer Intern:** National Oceanic and Atmospheric Administration (NOAA), Boulder, CO. *Analysis of paleoclimate Indian Summer Monsoon. Supervisor: Dr. David Anderson.*