

Gary D. Clow

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Appointments:

- 2018–present Senior Research Associate, *Institute of Arctic and Alpine Research, University of Colorado Boulder*
1996–2018 Research Geophysicist, *USGS, Geosciences & Environmental Change Science Center*
1979–1996 Research Geophysicist, *USGS, Astrogeology Branch*
1978–1979 Geophysicist, *USGS, Office of Earthquake Hazards*

Education:

- 2016–2017 Ph.D., Geophysics, *University of Utah, Salt Lake City*
1976–1978 A.B., Geophysics, *University of California, Berkeley*
1971–1976 A.B., Astrophysics, *University of California, Berkeley*

Awards and Honors:

- 2010 National Oceanographic Partnership Program Award for excellence in partnering
2000 Island located at 77°37'S, 163°10'E officially named *Clow Island* for superior research contributions
1998 Superior Service Award, *U.S. Department of the Interior*
1987 Antarctic Service Medal of the United States
1978 George D. Louderback Prize, *University of California, Berkeley*

Polar Field Experience:

- 2014, '13, '12, '10, '09, '08, ... '89: Arctic Alaska *climate-change detection*
2011, '03, '99, '98, '96, '95, '94, '92: Greenland Ice Sheet *borehole paleothermometry*
2014, '11, '01, '00, '99, '96, '95, '94: Antarctica, Polar Plateau *borehole paleothermometry*
1996, '95, '94, '88, '87, '85: Antarctica, Dry Valleys *microclimate physics*

Publications:

- Wang, K., and Clow, G.D. (2020): Newly collected data across Alaska reveal remarkable biases in solar radiation products, *International Journal of Climatology*, 1–16, doi:10.1002/joc.6634
Talalay, P., Li, Y., Augustin, L., Clow, G., Hong, J., Lefebvre, E., Markov, A., Motoyama, H., Ritz, C. (2020): Geothermal heat flux from measured temperature profiles in deep ice boreholes in Antarctica, *The Cryosphere*, 14: 4021–4037, doi:10.5194/te-14-4021-2020
Wang, K., and Clow, G.D. (2020): The Diurnal temperature range in CMIP6 models: Climatology, variability, and evolution, *Journal of Climate*, 33(19): 8261–8279, doi:10.1175/JCLI-D-19-0897.1
Urban, F. E., and Clow, G.D. (2020): DOI/GTN-P climate and active-layer data acquired in the National Petroleum Reserve–Alaska and the Arctic National Wildlife Refuge, 1998–2017, *U.S. Geological Survey Data Series 1092* (ver. 1.1), 71 pp. [Supersedes USGS Data Series 1021], doi:10.3133/ds1092
Wang, K., and Clow, G.D. (2019): Reconstructed global monthly land air temperature dataset (1880–2017), *Geoscience Data Journal*, 7: 4–12, doi:10.1002/gdj3.84
Zheng, L., Overeem, I., Wang, K., and Clow, G.D. (2019): Changing Arctic river dynamics cause localized permafrost thaw, *J. Geophys. Res.-Earth Surface*, 124(9): 2324–2344, doi:10.1029/2019JF005060
Clow, G.D. (2018): CVPM 1.1: A flexible heat-transfer modeling system for permafrost, *Geoscientific Model Model Development*, 11, 4889–4908, doi:10.5194/gmd-11-4889-2018
Wang, K., Jafarov, E., Overeem, I., Romanovsky, V., Schaefer, K., Clow, G., Urban, F., Cable, W., Mark Piper, Schwalm, C., Zhang, T., Kholodov, A., Sousanes, P., Loso, M., Hill, K. (2018): A synthesis dataset of permafrost-affected soil thermal conditions for Alaska, USA, *Earth Syst. Sci. Data*, 10, 2311–2328, doi:10.5194/essd-10-2311-2018

- Overeem, I., Jafarov, E., Wang, K., Schaefer, K., Stewart, S., Clow, G., Piper, M., Elshorbany, Y. (2018): A modeling toolbox for permafrost landscapes, *EOS - Transactions of the American Geophysical Union*, 99, doi:10.1029/2018EO105155
- Urban, F. E., Clow, G.D. (2018): DOI/GTN-P climate and active-layer data acquired in the National Petroleum Reserve–Alaska and the Arctic National Wildlife Refuge, 1998–2016, *U.S. Geological Survey Data Series* 1092 (ver. 1.0), 71 pp., doi:10.3133/ds1092
- Wang, K., Zhang, T., Zhang, X., Clow, G.D., Jafarov, E.E., Overeem, I., Romanovsky, V., Peng, X., Cao, B. (2017): Continuously amplified warming in the Alaskan Arctic: Implications for estimating global warming hiatus, *Geophys. Res. Lett.*, 44, 9029–9038, doi:10.1002/2017GL074232
- Orsi, A.J., Kawamura, K., Masson-Delmotte, V., Fettweis, X., Box, J.E., Dahl-Jensen, D., Clow, G.D., Landais, A., and Severinghaus, J.P. (2017): The recent warming trend in North Greenland, *Geophys. Res. Lett.*, 44, 6235–6243, doi:10.1002/2016GL072212.
- Urban, F.E. and Clow, G.D. (2017): DOI/GTN-P climate and active-layer data acquired in the National Petroleum Reserve–Alaska and the Arctic National Wildlife Refuge, 1998–2015, *U.S. Geological Survey Data Series* 1021, 546 pp., doi:10.3133/ds1021
- Clow, G.D. (2017): The use of borehole temperature measurements to infer climatic changes in Arctic Alaska, Ph.D. dissertation, University of Utah, 250 pp.
- Cuffey, K.M., Clow, G.D., Steig, E.J., Buizert, C., Fudge, T.J., Koutnik, M., Waddington, E.D., Alley, R.B., and Severinghaus, J.P. (2016): Deglacial temperature history of West Antarctica, *Proc. Natl. Acad. Sci.*, 113, 14249–14254, doi:10.1073/pnas.1609132113
- MacGregor, J.A., Fahnestock, M.A., Catania, G.A., Aschwanden, A., Clow, G.D., Colgan, W.T., Gogineni, S.P., Morlighem, M., Nowicki, S.M.J., Paden, J.D., Price, S.F., and Seroussi, H. (2016): A synthesis of the basal thermal state of the Greenland Ice Sheet, *J. Geophys. Res. Earth Surf.*, 121, doi:10.1002/2015JF003803
- Urban, F.E. and Clow, G.D. (2016): DOI/GTN-P climate and active-layer data acquired in the National Petroleum Reserve–Alaska and the Arctic National Wildlife Refuge, 1998–2014, *U.S. Geological Survey Data Series* 977, doi:10.3133/ds977
- Clow, G.D. (2015): A Green’s function approach for assessing the thermal disturbance caused by drilling deep boreholes in rock or ice, *Geophys. J. Int.*, 203, 1877–1895, doi:10.1093/gji/ggv415
- Clow, G.D. (2015): Radial Green’s functions used to correct borehole temperature measurements for the thermal disturbance caused by drilling, *UCAR/NCAR - CISL - ACADIS*, Dataset, <http://dx.doi.org/10.5065/D64F1NS6>
- MacGregor, J.A., Li, J., Paden, J.D., Catania, G.A., Clow, G.D., Fahnestock, M.A., Gogineni, S. P., Grimm, R.E., Morlighem, M. Nandi, S., Seroussi, H., and Stillman, D.E. (2015): Radar attenuation and temperature within the Greenland Ice Sheet, *J. Geophys. Res. Earth Surf.*, 120, doi:10.1002/2014JF003418
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- Buizert, C., Cuffey, K. M., Severinghaus, J. P., Baggenstos, D., Fudge, T. J., Steig, E. J., Markle, B. R., Winstrup, M., Rhodes, R. H., Brook, E. J., Sowers, T. A. , Clow, G. D., Cheng, H., Edwards, R. L., Sigl, M., McConnell, J. R., and Taylor, K. C. (2015): The WAIS Divide deep ice core WD2014 chronology – Part 1: Methane synchronization (68–31 kaBP) and the gas age–ice age difference, *Clim. Past*, 11, 153–173, doi:10.5194/cp-11-153-2015
- Clow, G.D. (2014): Temperature data acquired from the DOI/GTN-P Deep Borehole Array on the Arctic Slope of Alaska, 1973–2013, *Earth Syst. Sci. Data*, 6, 201–218, doi:10.5194/essd-6-201-2014
- Barnhart, K.R., Anderson, R.S., Overeem, I., Wobus, C., Clow, G.D., and Urban, F.E. (2014): Modeling erosion of ice-rich permafrost bluffs along the Alaskan Beaufort Sea coast, *J. Geophys. Res. Earth Surf.*, 119, 1155–1179, doi:10.1002/2013JF002845
- Urban, F.E. and Clow, G.D. (2014): DOI/GTN-P climate and active-layer data acquired in the National Petroleum Reserve–Alaska and the Arctic National Wildlife Refuge, 1998–2013, *U.S. Geological Survey Data Series* 892, doi:10.3133/ds892
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- Urban, F.E. and Clow, G.D. (2013): Air temperature, wind speed and wind direction in the National Petroleum Reserve–Alaska and the Arctic National Wildlife Refuge, 1998–2011, *U.S. Geological Survey Open-File Report 2013-1063*.
- Clow, G.D., DeGange, A.R., Derksen, D.V., Zimmerman, C.E. (2011): Chapter 4. Climate Change Considerations, in *An evaluation of the science needs to inform decisions on outer continental shelf energy development in the Chukchi and Beaufort Seas, Alaska*, Holland-Bartels, L., and Pierce, B. (Eds.), *U.S. Geological Survey Circular 1370*, 81–108.
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