

Employment

- 2018–2020 **Postdoctoral Fellow**, Department of Physical Geography and Ecosystem Science, Lund University, Lund, Sweden.
- 2013–2018 **Research Assistant**, Department of Meteorology and Atmospheric Science, The Pennsylvania State University, University Park, Pennsylvania.

Education

- 2018 **Ph.D. in Meteorology and Atmospheric Science**, Department of Meteorology and Atmospheric Science, The Pennsylvania State University, University Park, Pennsylvania.
Dissertation: Toward improved regional estimates of carbon dioxide sources and sinks through coupled carbon–atmospheric data assimilation.
Advisor: Fuqing Zhang. Co-advisors: Richard Alley and Thomas Lauvaux.
- 2012 **M.S. in Atmospheric Sciences, Oceanography and Climate**, Department of Meteorology, Stockholm University, Stockholm, Sweden.
Thesis: The Barents Oscillation and its impact on the Arctic climate.
Advisors: Heiner Körnich and Qiong Zhang.
- 2010 **B.S. in Meteorology**, Department of Meteorology, Stockholm University, Stockholm, Sweden.
Thesis: Local impact of soot on surface temperature in India and Sweden.
Advisors: Annica Ekman and Henning Rodhe.

Work experience

- Jun–Jul 2008 **Computer Programmer**, IVL Swedish Environmental Research Institute, Gothenburg, Sweden.

Honors and awards

- 2018 **Outstanding Student Paper Award**, 20th Conference on Atmospheric Chemistry, American Meteorological Society.
For presentation titled “Progress toward estimating surface carbon dioxide fluxes at the regional scale using an augmented ensemble Kalman Filter”.
- 2016 **Öfverdirektör Elis Sidenbladhs fond**, Royal Swedish Academy of Sciences.
Financial support for university studies.
- 2014 **Hans Neuberger Award**, The Pennsylvania State University.
For excellent teaching of meteorology at the elementary level.
- 2014 **Chi Epsilon Pi**, National Meteorology Honor Society.

Peer-reviewed publications

- 2019 **Chen, H. W.**, F. Zhang, T. Lauvaux, K. J. Davis, S. Feng, M. P. Butler, and R. B. Alley (2019): Characterization of regional-scale CO₂ transport uncertainties in an ensemble with flow-dependent transport errors. *Geophysical Research Letters*, **46**, 4049–4058. doi:10.1029/2018GL081341.
- 2016 **Chen, H. W.**, R. B. Alley, and F. Zhang (2016): Interannual Arctic sea ice variability and associated winter weather patterns: A regional perspective for 1979–2014. *Journal of Geophysical Research–Atmospheres*. **121**, 14,433–14,455, doi:10.1002/2016JD024769.
- 2016 **Chen, H. W.**, F. Zhang, and R. B. Alley (2016): The robustness of midlatitude weather pattern changes due to Arctic sea ice loss. *Journal of Climate*, **29**, 7831–7849, doi:10.1175/JCLI-D-16-0167.1.
- 2013 **Chen, H. W.**, Q. Zhang, H. Körnich, and D. Chen (2013): A robust mode of climate variability in the Arctic: The Barents Oscillation. *Geophysical Research Letters*, **40**, 2856–2861, doi:10.1002/grl.50551.
- 2013 Chen, D. and **H. W. Chen** (2013): Using the Köppen classification to quantify climate variation and change: An example for 1901–2010. *Environmental Development*, **6**, 69–79, doi:10.1016/j.envdev.2013.03.007.

Other publications

- 2018 Cohen, J., X. Zhang, J. Francis, T. Jung, R. Kwok, J. Overland, P. C. Tayler, S. Lee, F. Laliberte, S. Feldstein, W. Maslowski, G. Henderson, J. Stroeve, D. Coumou, D. Handorf, T. Semmler, T. Ballinger, M. Hell, M. Kretschmer, S. Vavrus, M. Wang, S. Wang, Y. Wu, T. Vihma, U. Bhatt, M. Ionita, H. Linderholm, I. Rigor, C. Routson, D. Singh, M. Wendisch, D. Smith, J. Screen, J. Yoon, Y. Peings, **H. Chen**, and R. Blackport (2018): Arctic change and possible influence on mid-latitude climate and weather: a US CLIVAR White Paper. *U.S. CLIVAR White Paper 2018-1*, 41 pp, doi:10.5065/D6TH8KGW

Manuscripts under review

- 2019 **Chen, H. W.**, L. N. Zhang, F. Zhang, K. J. Davis, T. Lauvaux, S. Pal, B. Gaudet, and J. P. DiGangi (2019): Evaluation of regional CO₂ mole fractions in the ECMWF CAMS real-time atmospheric analysis and NOAA CarbonTracker Near-Real Time reanalysis with airborne observations from ACT-America field campaigns. *Journal of Geophysical Research–Atmospheres*. Under review.
- 2019 Cohen, J., X. Zhang, J. Francis, T. Jung, R. Kwok, J. Overland, T. Ballinger, U. S. Bhatt, **H. W. Chen**, D. Coumou, S. Feldstein, D. Handorf, G. Henderson¹, M. Ionita, M. Kretschmer, F. Laliberte, S. Lee, H. W. Linderholm, W. Maslowski, Y. Peings, K. Pfeiffer, I. Rigor, T. Semmler, J. Stroeve, P. C. Taylor, S. Vavrus, T. Vihma, S. Wang, M. Wendisch, Y. Wu, and J. Yoon (2019): Divergent consensus on the influence of Arctic Amplification on mid-latitude severe winter weather. *Nature Climate Change*. Under review.

Teaching experience

- Jul–Aug 2017 **Co-Mentor for Summer Research Project**, The Pennsylvania State University.
- 2015 **Lead Instructor**, The Pennsylvania State University.
- Introduction to Programming Techniques for Meteorology (Spring 2015).
- 2013 **Co-Instructor**, The Pennsylvania State University.
- Applications of Computers to Meteorology (Fall 2013).
- 2013–2015 **Teaching Assistant**, The Pennsylvania State University.
- Synoptic Meteorology Laboratory (Fall 2015).
 - Applications of Computers to Meteorology (Fall 2014, Spring 2014).
 - Introduction to Programming Techniques for Meteorology (Spring 2013).

Community activities

reviewer Reviewer for Nature Climate Change and Atmospheric Chemistry and Physics.

Languages

Swedish (native), **English** (fluent), **Mandarin** (fluent speaking, basic reading and writing), and **German** (basic).

Computer skills

OS	Linux, Unix, Windows, macOS	graphics	Adobe Photoshop, Inkscape
programming	Python, Fortran, C++, C	typography	L ^A T _E X
numerical	MATLAB, Mathematica	office suites	Microsoft Office, LibreOffice
shell script	Bash, Z shell	miscellaneous	Git, Regular Expressions, HTML, CSS

Workshops

- 2016 **Advanced Study Program Summer Colloquium**, Advances in Air Quality Analysis and Prediction: The Interaction of Science and Policy, National Center for Atmospheric Research, Colorado (travel fund from NCAR).

Presentations

- Jan 2019 “Estimating regional greenhouse gas sources and sinks through ensemble-based simultaneous state and parameter estimation” (oral), 99th American Meteorological Society Annual Meeting. *Presented by coauthor.*
- Dec 2018 “Monitoring Earth’s carbon cycle and human fossil fuel emissions with the help of advanced data assimilation methods” (invited oral), Second ADAPT Symposium on Advanced Understanding, Monitoring and Prediction of Weather, Climate and Environmental systems.
- Dec 2018 “Characterizing CO₂ transport errors for regional inversions using a coupled carbon–atmospheric data assimilation system” (poster), AGU Fall Meeting 2018.
- Jan 2018 “Constraining surface carbon dioxide fluxes using advanced data assimilation techniques” (invited oral), 98th American Meteorological Society Annual Meeting.
- Jan 2018 “Progress toward estimating surface carbon dioxide fluxes at the regional scale using an augmented ensemble Kalman Filter” (poster), 98th American Meteorological Society Annual Meeting.