



WILLIAM CHAPMAN

COMPUTER SCIENCE EDUCATOR

CONTACT

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"I used to think technology would not solve our education problems. I was wrong."

TECHNICAL SKILLS

- SWIFT
- iOS
- OBJECTIVE C
- JAVA
- FORTRAN
- DATA VISUALIZATION
- GIT/SVN
- SHELL SCRIPTING
- MYSQL/POSTGRES
- PHP
- PYTHON
- DATA SCIENCE
- WEB

INTERESTS

- EDUCATION
- CURRICULUM DESIGN
- SUSTAINABILITY
- ENVIRONMENT
- SPEAKING
- WRITING

HOBBIES

- CLASSICAL BALLET
- BEAN-TO-BAR CHOCOLATE
- HOME BREWING
- SEVERE WEATHER
- PIANO
- GOLF



PROFESSIONAL PROFILE

I have been teaching computer science and developing computer science curriculum at the University of Illinois for the past six years. Previously, I held a position as Senior Research Programmer doing data analysis, visualization, programming and writing research papers on weather and climate topics. I am passionate about teaching computational thinking to young people. I am happiest while developing creative, effective, research-based approaches and tools for teaching computer science topics.

WORK EXPERIENCE

CLINICAL PROFESSOR COMPUTER SCIENCE

UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN
2014 - PRESENT

I currently teach [Introduction to Computer Science](#) to 1,600 undergraduate students each year at the University of Illinois, in addition to managing 10-12 graduate student teaching assistants and 70-80 undergraduate course assistants each semester.

My course introduces simple machine architecture and language, procedural programming techniques, algorithms, object-oriented programming, recursion, advanced searching and sorting algorithms, and algorithm analysis.

SENIOR RESEARCH PROGRAMMER ATMOSPHERIC SCIENCES

UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN
1988 - 2014

As a researcher, I worked on climate issues with a focus on the Arctic and Antarctic. I published this work in more than sixty research papers in high-profile science journals and books, and presented at many international meetings and conferences.

I was the principal investigator on numerous NASA, NSF and NOAA awards, bringing in several million research dollars to our University. In this position, I enjoyed learning, creating visualizations, and sharing discoveries via writing, presentations and teaching.

AWARDS

2014 - 2017: **Teacher Ranked as Excellent by Their Students** all semesters for CS125

2014: **Teacher Ranked as Excellent by Their Students** for ATMS 305

2013: **Teacher Ranked as Excellent by Their Students** for ATMS 491

2006: **Chancellor's Academic Professional Excellence Award**

2005: **College of Liberal Arts and Sciences Staff Award**

TEACHING EXPERIENCE

2014 - present: **CS 125: Introduction to Computer Science**

2013 - present: **CocoaNuts iOS group (Faculty Advisor): Intro iOS Development**

2017: **Intro to CS Using Swift Playgrounds:** Joy In Learning Homeschool Cooperative

2013: **ATMS 491: Advanced Topics - Computational Technology in Atmospheric Sciences**

2013 - 2014: **ATMS 305: Computing and Data Analysis**

2012: **ATMS 444: Arctic Meteorology and Climate**

STUDENT REVIEWS

- "William Chapman is an amazing professor. When you are in class you get a sense that he truly cares for his students and loves teaching which is unfortunately lost among some professors. The work is hard at times, but at the end of the class you feel like you have truly learned a lot about computer science." (May 2016)
- "Great professor for the first CS class most students take. Enthusiastic, approachable, and dedicated to presenting the material well." (January 2016)
- "Amazing professor. Looked forward to all lectures. He is super nice and very passionate about teaching." (December 2015)
- "Excellent professor. Is crystal clear and knows the material well." (October 2015)

EDUCATION

MATH AND COMPUTER SCIENCE, BS
UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN

ATMOSPHERIC SCIENCE, MS
UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN

EXTERNAL ACTIVITIES

Co-Founder and Principal Atmospheric Scientist: Agrible, Inc. (2013-present)

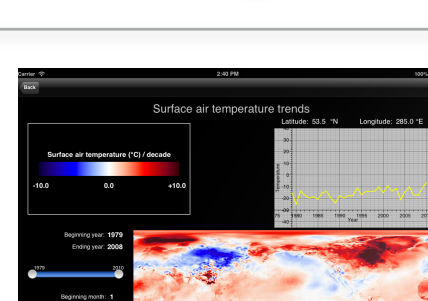
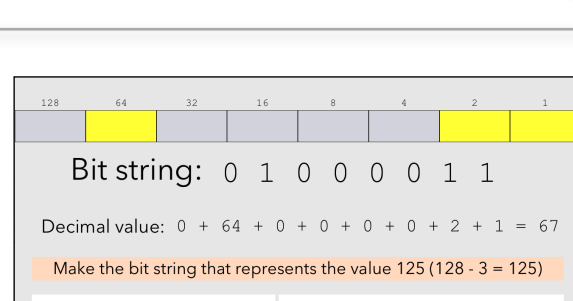
TED-ED: The Arctic - Canary in the Coal Mine

Board of Directors: Countryside School (2005-2008)

Board of Directors: Champaign-Urbana Ballet (2008-2011)

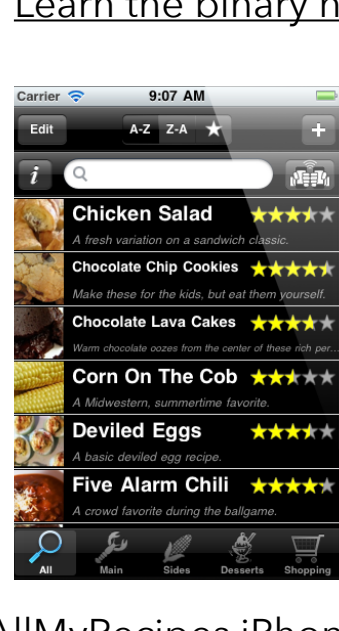


iOS APPS



[ClimatePad Browse](#)
[ClimatePad Animation](#)
[ClimatePad Trends](#)

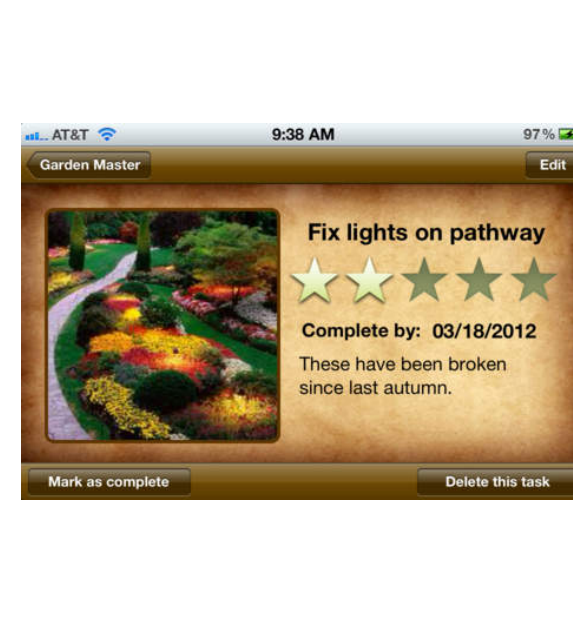
[Learn the binary number system!](#)



[AllMyRecipes iPhone](#)
[AllMyRecipes iPad](#)



[Baseball Memories](#)



[Garden Master](#)

SELECTED PUBLICATIONS

Walsh, J. E., Fetterer, F., Scott Stewart, J. and Chapman, W. L., 2016: A database for depicting Arctic sea ice variations back to 1850. *Geographical Review*. doi: 10.1111/j.1931-0846.2016.12195.x

Walsh, J.E., and W.L. Chapman, 2014: Variability of sea ice over decadal and longer timescales. *Climate Change: Multidecadal and Beyond* (M. Ghil, M. Latif, J.M. Wallace and C.P. Chang, eds.), Vol. 6 of the World Scientific Series of Asia-Pacific Weather and Climate.

John E. Walsh, Hotaek Park, William L. Chapman, Tetsuo Ohata, 2013: Relationships between variations of the land-ocean-atmosphere system of northeastern Asia and northwestern North America. *Polar Science* **7**:2, 188-203.

de Boer, G.; Chapman, W.; Kay, J.E.; Medeiros, B.; Shupe, M.D.; Vavrus, S.; Walsh, J., 2012: A Characterization of the Present-Day Arctic Atmosphere in CCSM4. *J. Climate*, **25**, 2676-2695. doi: http://dx.doi.org/10.1175/JCLI-D-11-00228.1.Gleicher, K.J.; Walsh, J.E.; Chapman, W.L., 2011: A vorticity-based analysis of the spatial and temporal characteristics of the Beaufort Anticyclone. *J. Geophys. Res. - Atmos.*, p., **116**. 10.1029/2011JD01570

Overland, J. E., M. Wang, V. M. Kattsov, J. H. Christensen, W. L. Chapman and J. E. Walsh, 2011: Climate model projections for the Arctic. Book, Accepted Bibliography: Scientific Report: Snow, Water, Ice and Permafrost in the Arctic

Strey, S. T., W. L. Chapman, and J. E. Walsh, 2010: The 2007 sea ice minimum: Impacts on the Northern Hemisphere atmosphere in late autumn and early winter. *J. Geophys. Res.*, **115**, D23103, doi:10.1029/2009JD013294.

Yu, G., Z. Schwartz, J. E. Walsh, and W. L. Chapman, 2009: A weather-resolving index for assessing the impact of climate change on tourism related climate resources. *Climatic Change*, **95**, 551-573, doi:10.1007/s10584-009-9565-7.

Hu, F. S., P. E. Higuera, J. E. Walsh, W. L. Chapman, P. A. Duffy, L. B. Brubaker, and M. L. Chipman, 2010: Tundra burning in Alaska: Linkages to climatic change and sea ice retreat. *J. Geophys. Res.*, **115**, G04002, doi:10.1029/2009JG001270.

Walsh, John E., William L. Chapman, Diane H. Portis, 2009: Arctic Cloud Fraction and Radiative Fluxes in Atmospheric Reanalyses. *J. Climate*, **22**, 2316-2334. doi: http://dx.doi.org/10.1175/2008JCLI2213.1

Walsh, John E., William L. Chapman, Vladimir Romanovsky, Jens H. Christensen, Martin Stendel, 2008: Global Climate Model Performance over Alaska and Greenland. *J. Climate*, **21**, 6156-6174. doi: http://dx.doi.org/10.1175/2008JCLI2163.1

Chapman, William L., and John E. Walsh, 2007: A Synthesis of Antarctic Temperatures. *J. Climate*, **20**, 4096-4117. doi: http://dx.doi.org/10.1175/JCLI4236.1

Chapman, W. L., and J. E. Walsh, 2007: Simulations of Arctic temperature and pressure by Global Coupled Models. *J. Climate*, **20**, 609-632.

Kattsov, Vladimir M., John E. Walsh, William L. Chapman, Veronika A. Govorkova, Tatyana V. Pavlova, Xiangdong Zhang, 2007: Simulation and Projection of Arctic Freshwater Budget Components by the IPCC AR4 Global Climate Models. *J. Hydrometeorol.*, **8**, 571-589. doi: http://dx.doi.org/10.1175/JHM575.1

Vavrus, S., J. Walsh, W. Chapman, D. Portis, 2006: The behavior of extreme cold air outbreaks under greenhouse warming. *Intl. J. of Climatology*, **26**, 9, 1133-1147.

Portis, D., M. Cellitti, W. L. Chapman and J. E. Walsh, 2005: Low-frequency variability and evolution of North American Cold Air Outbreaks. *Mon. Weather Rev.*, **134**, 579-597.

J. Oerlemans, R. P. Bassford, W. L. Chapman, J. A. Dowdeswell, A. F. Glazovsk, J. O. Hagen, K. Melvold, M. de Ruyter de Wildt and R. S. W. van de Wal, 2005: Estimating the contribution from Arctic glaciers to sea-level change in the next hundred years. *Annals of Glaciology*, **42**, 230-236(7).

Chapin, F. S., III, M. Sturm, M. C. Serreze, J. P. McFadden, J. R. Key, A. H. Lloyd, A. D. McGuire, T. S. Rupp, A. H. Lynch, J. P. Schimel, J. Beringer, H. E. Epstein, L. D. Hinzman, G. Jia, C.-L. Ping, K. Tape, W. L. Chapman, E. Euskirchen, C. D. C. Thompson, J. M. Welker, and D. A. Walker, 2005: Amplification of Arctic Summer Warming by Terrestrial Ecosystem Changes. *J. Climate*, [DOI: 10.1126/science.1117368].

Walsh, J. E., S. J. Vavrus and W. L. Chapman, 2005: Workshop on Modeling of the Arctic Atmosphere. *Bull. Amer. Meteor. Soc.*, **86**, No. 6, 845-852.

Pielke, R. A., G. E. Liston, W. L. Chapman and D. A. Robinson, 2004: Actual and insolation-weighted Northern Hemisphere snow cover and sea-ice between 1973-2002. *Climate Dynamics*, **22**, v. 6-7, 591-595.

Walsh J. E., V. M. Kattsov, W. L. Chapman, V. Govorkova and T. Pavlova, 2002: Comparison of Arctic climate simulations in uncoupled and coupled global climate models. *J. Climate*, **15**, 1429-1446.

Walsh J. E. and W. L. Chapman, 2001: Twentieth-century sea ice variations from observational data. *Ann. Glaciology*, **33**, 444-448.

Walsh J. E., A. S. Phillips, D. H. Portis, W. L. Chapman, 2001: Extreme cold outbreaks in the United States and Europe, 1948-1999. *J. Climate*, **14**, 2642-2658.

Shy T. L., J. E. Walsh, W. L. Chapman, A. H. Lynch, D. A. Bailey, 2000: Sea ice model validation using submarine measurements of ice draft. *Ann. Glaciology*, **31**, 307-312.

Walsh J. E., K. Y. Vinnikov and W. L. Chapman, 1999: On the use of historical sea ice charts in assessments of century-scale climate variations. *Proceedings, Workshop on Operational Sea Ice Charts of the Arctic*, Arctic Climate System Study, World Climate Research Programme, WCRP.

Walsh J. E., and W. L. Chapman, 1998: Arctic cloud-radiation-temperature associations in observational data and atmospheric reanalyses. *Journal of Climate*, **11**, 3030-3045.

Lynch, A. H., D. McGinnis, W. L. Chapman, J. S. Tilley, 1997: A multivariate comparison of two land-surface models integrated into an Arctic Regional Climate System model. *Ann. of Glaciol.*, Vol. **25**, 127-131.

Tilley J. S., W. L. Chapman, W. Wu, 1997: Sensitivity tests of the Canadian Land Surface Scheme (CLASS) for Arctic Tundra. *Ann. of Glaciol.*, Vol. **25**, 46-50.

Lynch, A. H., M. F. Gluek, W. L. Chapman, D. A. Bailey, J. E. Walsh, 1997: Satellite observations and climate system model simulation of the St. Lawrence Island polynya. *Tellus*, Vol. **49A**, 277-297.

Walsh, J. E., W. L. Chapman, T. L. Shy, 1996: Recent Decrease of Sea Level Pressure in the Central Arctic. *Journal of Climate*, Vol. **9**, 2, 480-486.

Chapman, W.L., and J.E. Walsh, 1991, updated 1996. Published dataset: Arctic and Southern Ocean sea ice concentrations. Boulder, CO: National Snow and Ice Data Center. http://dx.doi.org/10.7265/NS057CVT

Tao, X., J. E. Walsh, W. L. Chapman, 1996: An Assessment of Global Climate Model Simulations of Arctic Air Temperatures. *Journal of Climate*, **9**, 1060-1076.

Chapman, D. A., D. E. Novak, W. L. Chapman, 1995: A Collaborative Interdisciplinary Unit on Weather for Elementary Educators on the Internet. *Preprints, Joint Conference on Education and Interactive Information Processing*, Am. Meteor. Soc., Dallas, TX, 79-82.

Tao, X., W. L. Chapman, J. E. Walsh, 1995: Intercomparison of Global Climate Model Simulations of Arctic Temperature. *Preprints, Fourth Conference on Polar Meteorology and Oceanography*, Am. Meteor. Soc., Dallas, TX, 138-143.

Lynch, A. H., W. L. Chapman, J. E. Walsh, G. Weller, 1995: Development of a Regional Climate Model of the Western Arctic. *Preprints, Fourth Conference on Polar Meteorology and Oceanography*, Am. Meteor. Soc., Dallas, TX, 144-149.

Lynch, A. L., M. F. Glueck, W. L. Chapman, D. Bailey, and J. E. Walsh, 1995: The Use of Remote Sensing Data (SAR, AVHRR, SSM/I) for Verification of a Coupled Atmosphere-Sea Ice Regional Model. *Mon. Wea. Rev.*, Vol. **16**, 2, 456-469.

Lynch, A. L., W. L. Chapman, J. E. Walsh, 1995: Development of a Regional Climate Model of the Western Arctic. *Journal of Climate*, **8**, 1555-1570.

Searight, K.R., X. Tao, W.L. Chapman, J.E. Walsh, K.P. Bowman, and R.B. Wilhelmson, 1994: A GCM Comparison Study Using Envision. *Preprints, Tenth International Conference on Interactive Information and Processing Systems for Meteorology, Oceanography, and Hydrology*, Am. Meteor. Soc., Nashville, TN, 372-377. --> hypermedia presentation given at the 1994 IIP5 meeting.

Chapman, W. L., W. Welch, K. P. Bowman, J. Sacks, and J. E. Walsh, 1994: Arctic Sea Ice Variability: Model Sensitivities and a Multidecadal Simulation. *Jour. of Geophys. Res.*, **99**, 919-935.

Walsh, J. E., A. Lynch, W. L. Chapman and D. Musgrave, 1993: A regional model for studies of atmosphere-ice-ocean interaction in the western Arctic. *Meteorology and Atmospheric Physics*, **51**, 1-16.

Chapman, W. L., and J. E. Walsh, 1993: Recent variations of sea ice and air temperatures in high latitudes. *Bull. Amer. Meteor. Soc.*, **74**, 33-47.

Walsh, J. E., and W. L. Chapman, 1992: Variability of Sea Ice in the Subpolar North Atlantic. *Preprints: Third Conference on Polar Meteorology and Oceanography*, Am. Meteor. Soc., Portland, OR, 87-90.

Chapman, W. L., and J. E. Walsh, 1991: Long-range prediction of regional sea ice anomalies in the Arctic. *Wea. Forecasting*, **6**, 271-288.

Walsh, J. E., W. L. Chapman and H. J. Zwally, 1991: Arctic sea ice variability derived from satellite passive microwave data. *Oceans from Space: Venice 1990*, IAPSO Proceedings Volume.

Walsh, J. E., and W. L. Chapman, 1991: Model simulation of changes in Arctic sea ice thickness. *Proceedings, Fifth Conference on Climate Variations*, Denver, CO, American Meteorological Society, 346-349.

Walsh, J. E., and W. L. Chapman, 1990: Short-term climatic variability of the Arctic. *J. Climate*, **3**, 237-250.

Walsh, J. E., and W. L. Chapman, 1990: Arctic contribution to upper-ocean variability in the North Atlantic. *J. Climate*, **3**, 1462-1473.

Chapman, W. L., and J. E. Walsh, 1989: A multifield analog approach to sea ice forecasting. *Preprints, 11th Conference on Probability and Statistics in Atmospheric Sciences*, Monterey, CA, American Meteorological Society, 297-300.

Chapman, W. L., 1989: Empirical diagnosis of interannual sea ice variations. *Proceedings of the Sixteenth Stanstead Seminar*, Bishop's University, Lennoxville, Quebec, 46-50.

... more publications available on request ...

GRANTS AWARDED

U. S. Geographic Survey: Analysis of Winds and Circulation Patterns in Bird Migration Corridors; \$50,000; 9/01/2012 - 1/31/2014; Principal Investigator

Univ. of Alaska (VCSI subcontract): Datasets for the Arctic Coastal Environment; \$25,000; 21/13/2011 - 12/01/2012; Principal Investigator

National Science Foundation - Collaborative Research: Arctic Predictability; \$231,485; 9/15/2010 - 8/31/2013; Principal Investigator

Sandia National Laboratories Subcontract: Experimental high-resolution simulations of Alaska climate; \$70,000; 11/25/2009-12/31/2010; Principal Investigator

National Oceanic and Atmospheric Administration subcontract via Univ. Alaska: A Long-term gridded sea ice product for use in reanalysis and diagnostic studies; \$36,933; 9/01/2011 - 8/31/2012 (continuing another year); Principal Investigator

National Science Foundation: Collaborative Research: IPY: Arctic System Reanalysis; \$328,260; 9/15/2007 - 8/31/2011; Principal Investigator

National Science Foundation - Office of Polar Programs: A climate model archive for Arctic research and outreach; \$283,410; October 2005 - September, 2008; Principal Investigator

U.S. Department of Energy: The use of ARM data in reanalysis applications; \$290,608; November 2006 - October, 2009; Co-Principal Investigator

National Science Foundation - Climate Dynamics Division: Collaborative Research: Global Climate Model Simulations of Extreme Cold-Air Outbreaks; \$190,498; October 2003 - September, 2005; Co-Principal Investigator

National Science Foundation - Office of Polar Programs: Synthesis of Antarctic Temperature Observations and Model Output; \$188,041; January 2003 - December, 2004; Co-Principal Investigator

University of Illinois Online: A Collaborative Curriculum Builder; \$12,800; September 2000 - August, 2001; Principal Investigator

... more awarded grants available on request ...