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## *Leslie M. Hartten*

CIRES Research Scientist III  
at the  
NOAA/Earth System Research Laboratories' Physical Sciences Laboratory

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### Education

1993	Ph.D.	<a href="#">University of Wisconsin - Madison</a> (Atmospheric Science)
1988	M.S.	<a href="#">University of Wisconsin - Madison</a> (Meteorology)
1984	B.S. <i>with Highest Honors</i>	<a href="#">State University of New York - College at Oneonta</a> (Meteorology)

### Research Interests

- Synoptic and dynamic meteorology over the tropical oceans and in the Arctic;
- Atmospheric boundary layers;
- Comparability of data collected by collocated platforms;
- Response of wind profiling radars to atmospheric processes;
- How science is done, and by whom.

### Professional Experience

2020-present	<i>Research Scientist III</i>	CIRES, University of Colorado Boulder (at NOAA/ESRL Physical Sciences Laboratory)
1997-2020	<i>Research Scientist II</i>	CIRES, University of Colorado Boulder (at Physical Sciences Division of NOAA/ESRL, formerly part of NOAA's Aeronomy Laboratory)
1993-present	<i>Research Associate</i>	CIRES, University of Colorado Boulder (at NOAA/ESRL Physical Sciences Laboratory and predecessors)
1985-1992	<i>Research Assistant, Teaching Assistant</i>	Department of Meteorology, University of Wisconsin - Madison
1984	<i>Visiting Summer Student</i>	Large-Scale Dynamics Division, National Center for Atmospheric Research, Boulder, Colorado
1983	<i>Forecaster</i>	Universal Weather and Aviation, White Plains, New York

### Honors

2017	<a href="#"><u>CIRES Bronze Medal Award for Scientific/Engineering Achievement</u></a> ( <a href="#">shared with other CIRES staff</a> from NOAA/ESRL/Physical Sciences Division)
2017	<a href="#"><u>CIRES Employee of the Year Award</u></a> “for their role in rapidly implementing and supporting a complex, multi-platform, multiorganizational field campaign to observe a rare, high-intensity El Niño event in the central, equatorial Pacific” ( <a href="#">shared with five others</a> )
2016	<a href="#"><u>NOAA Research EEO/Diversity Award for Exemplary Service</u></a>

- 2011 [CIRES Director's Award for Diversity](#) “for her extensive volunteer effort with the SOARS program over the last ten years” (premiere recipient)
- 2010 [SOARS®](#) *Ten Years of Service*
- 1984-1985 *Wisconsin Alumni Research Foundation Fellow*
- 1982-1983 *Oneonta Alumni Association Scholar*
- 1981-1984 *National Merit Scholar*

## Field Campaign Leadership and Experience

- 2016 [El Niño Rapid Response \(ENRR\) Field Campaign](#): Served as *Science Lead for radiosonde quality assurance and quality control*, and *Co-Lead of the observation team at Kiritimati Island, Republic of Kiribati*. Spent five weeks on Kiritimati launching twice-daily radiosondes, maintaining surface meteorological instruments, and conducting outreach activities.
- 2007 Trans-Pacific Profiler Network (TPPN): Led a trip to dismantle and pack the NOAA Earth System Research Laboratory’s wind profiler on San Cristóbal, Galápagos Islands, Ecuador. Also collected and verified site metadata, in consultation with staff from the local Instituto Nacional Meteorología e Hidrología (INAMHI) office.
- 2000 Trans-Pacific Profiler Network (TPPN): Spent several days at the NOAA Aeronomy Laboratory wind profiler sites on Manus, Papua New Guinea and on Nauru, collecting and verifying site metadata and assisting the lead radar engineer with routine maintenance.

## Research Grants Awarded

- 2020 *Co-Principal Investigator* (PI Amy Solomon, Co-PI’s Matthew Shupe, Ola Persson, and Taneil Uttal) “Development of an Integrated Ocean-Atmosphere-Sea Ice Dataset for Validation of Modeled Arctic Boundary Layer Processes Over an Annual Cycle” (from NOAA’s Climate Program Office, COM; \$439,918; 3 years)
- 2013 *Principal Investigator* (Co-PI Cécile Penland, Co-I Christopher W. Fairall) “Diagnosis of Multiscale Interactions Involving Air-Sea Fluxes during the MJO’s Initiation Phase” (from NOAA’s Climate Program Office, ESS; \$351,400; 3 years)
- 2009, 2010, 2011 *Co-Principal Investigator* (PI Joey Comeaux, Co-PI Neal Lott) “Surface Data for San Cristóbal, Galápagos Islands” (from NOAA’s Climate Data Modernization Program; no local funding -- all moneys directly allocated to pay costs of scanning, key entering, and quality controlling data)
- 2007 *Principal Investigator* “Variability of Daily Cycles during the North American Monsoon: Observations, Analyses, and Simulations” (from NOAA’s Office of Global Programs, CPPA; \$285,200; 3 years)
- 2004 *Co-Principal Investigator* (PI Clark W. King, Co-PI Robert J. Zamora, Co-I’s Kenneth S. Gage and F. Martin Ralph) “Boundary Layer, Flux, and Soil Moisture Studies for NAME, Including Deployment of a NOAA UHF Wind Profiler Array” (from NOAA’s Office of Global Programs, PACS-GAPP; \$440,200; 3 years)
- 2003 *Principal Investigator* (Co-PI’s Kenneth S. Gage and Paul E. Johnston) “Continuing Observations and Analysis of Lower-Tropospheric Dynamics Over the Eastern Pacific” (from NOAA’s Office of Global Programs, PACS; \$291,917; 3 years)
- 2002 *Principal Investigator* (Co-PI’s Kenneth S. Gage and George N. Kiladis) “Intraseasonal and Interannual Variability of Lower-Tropospheric Winds Over the Tropical Pacific” (from NOAA’s Office of Global Programs, CLIVAR-Pacific; \$247,539; 3 years)
- 2000 *Co-Investigator* (PI Kenneth S. Gage, Co-I George N. Kiladis) “A Trans-Pacific Profiler Network for Climate Observations” (from NOAA’s Office of Global Programs, CLIVAR-Pacific; \$640,000; 3 years)
- 1997 *Co-Principal Investigator* (PI Kenneth S. Gage, Co-PI Nicholas A. Bond) “Lower-Tropospheric Dynamics Over the Eastern Pacific” (from NOAA’s Office of Global Programs, PACS; \$137,123; 3 years)

## Membership in Professional Societies

2006-present	Earth Science Women's Network (ESWN)
2005-2007	Society for Advancement of Chicanos and Native Americans in Science (SACNAS)
1989-2002	European Geophysical Society (EGS)
1986-present	American Geophysical Union (AGU)
1982-present	American Meteorological Society (AMS)

## Select Professional Leadership and Service

2020-present	<i>Member</i> , CIRES Diversity & Inclusion Strategic Planning Committee
2019-present	<i>Member</i> , Year of Polar Prediction (YOPP) Data Task Team
2019	<i>Invited Proposal Review Panelist</i> , NASA
2018-present	<i>Co-Representative</i> from ESRL Physical Sciences Laboratory to the Boulder (DOC) Labs Library Advisory Committee
2018	<i>Member</i> , CIRES Culture Survey Committee
2016-present	<i>Member</i> , AMS History Committee
2009-2017	<i>Presenter</i> , ESRL/Global Systems Division's " <a href="#">Daily Weather Briefing</a> "
2007-present	<i>Co-Point-of-Contact</i> , ESRL <a href="#">Integrating Theme: "Information Systems"</a>
2007	<i>Member</i> , Organizing Committee, 2008 AMS Annual Meeting
2005-2020	<i>Member</i> , ESRL/Physical Sciences Division's <a href="#">Workplace Advisory Committee</a>
2005-2006	<i>Member</i> , Local Organizing Committee, 7 <sup>th</sup> International Symposium on Tropospheric Profiling: Needs and Technologies
2004-2005	<i>Member</i> , CIRES Career Track Guidelines Committee
2003-2009	<i>Member</i> , AMS Board on Women and Minorities ( <i>Chair</i> 2007-2008, <i>Past Chair</i> 2009)
2000	<i>Member</i> , Max Eaton Award Selection Committee, AMS 24 <sup>th</sup> Conference on Hurricanes and Tropical Meteorology, Ft. Lauderdale, Florida
1997-present	<i>Manuscript Reviewer</i> for Atmosphere-Ocean, Bulletin of the American Meteorological Society, Earth System Science Data, EOS Transactions American Geophysical Union, JGR-Atmospheres, Journal of Atmospheric and Oceanic Technology, Journal of Atmospheric and Solar-Terrestrial Physics, Journal of Climate, Monthly Weather Review, and Radio Science
1994-present	<i>Proposal Reviewer</i> for the Canadian Foundation for Climate and Atmospheric Science, the NASA Weather and Atmospheric Dynamics Program, the National Science Foundation, the NOAA Office of Global Programs, and the NOAA Small Business Innovation Research Program

## Select Outreach and Education Activities

2018	<i>NOAA Representative and Poster Reviewer</i> , the <a href="#">Global Learning and Observations to Benefit the Environment (GLOBE)</a> program's Southwest Regional Student Science Symposium
2016, 2017	<i>Co-Trainer</i> , in-person and web-based mentor training for the <a href="#">PROGRESS (PROmoting Geoscience Research, Education, &amp; Success)</a> program
2016	<i>Author</i> , three short pieces for the <a href="#">El Niño Rapid Response blog</a> : <ul style="list-style-type: none"> <li>• "<a href="#">Not in the field, but behind the field</a>"</li> <li>• "<a href="#">Delighted to be here</a>"</li> <li>• "<a href="#">Both sides now</a>"</li> </ul>
2014	<i>Science Co-Mentor</i> for two students in UCAR/NCAR's <a href="#">PRE-College Internship Program (PRECIP<sup>®</sup>)</a> : <ul style="list-style-type: none"> <li>• Paola S. Esteban Pérez (rising senior, Colegio San José, Cajicá, Columbia)</li> <li>• Valerie M. Rodríguez Castro (incoming freshman, University of Puerto Rico - Mayagüez)</li> </ul>
2013	<i>Writing and Communications Mentor</i> for a student in the <a href="#">Significant Opportunities in Atmospheric Research and Science (SOARS<sup>®</sup>)</a> program: <ul style="list-style-type: none"> <li>• Adrianna Hackett (incoming grad student, University of Colorado - Boulder)</li> </ul>

- 2009 *Mentor and Research Supervisor* for a student enrolled in an LUC (Learning Unit Contract) at New Vista High School, Boulder, CO
- 2001-2012,  
2015-2017,  
2019 *Science Research Mentor* for students in the [SOARS®](#) program:
- Kylee J. Lewis (2019, rising senior, University of Oklahoma)
  - Ebone D. Smith (2017, rising junior, Virginia Polytechnic Institute and State University)
  - Rosa M. Vargas-Martes (2016, rising senior, University of Puerto Rico - Mayagüez)
  - Rosa M. Vargas-Martes (2015, rising junior, University of Puerto Rico - Mayagüez)
  - Ma'Ko'Quah Jones (2012, rising junior, Dartmouth College)
  - Javier Lujan (2011, rising senior, University of Texas - El Paso)
  - Aaron Piña (2010, rising senior, Texas A&M University)
  - Vanessa Vincente (2009, rising junior, Valparaiso University)
  - Sandra Diaz (2008, rising junior, Texas A&M University)
  - McArthur Jones, Jr. (2007, rising junior, Millersville University)
  - Douglas J. Gavin (2006, rising senior, Jackson State University)
  - Luna M. Rodriguez-Manzanet (2005, rising senior, University of Puerto Rico - Rio Piedras)
  - Nancy I. Rivera Rivera (2004, incoming grad student, University of Texas - El Paso)
  - Melissa A. Burt (2003, rising junior, Millersville University)
  - D. Matthew Coleman (2002, rising senior, University of Virginia)
  - Ernesto Muñoz (2001, University of Puerto Rico)
- 2001 *Online “Weather Specialist”*, Kids as Global Scientists program
- 2000 *Research Mentor* for a student in the [Summer Multicultural Access to Research Training \(SMART\)](#) internship program run by the Graduate School at the University of Colorado - Boulder:
- Pauline A. Datulayta (rising sophomore, City University of New York - Queens College)
- 1999-2000 *Science Mentor* for a student enrolled in the Science Research Seminar class at New Vista High School, Boulder, CO
- 1999 *Experiment Design and Instrumentation* suggestions for the [Earthworks](#) secondary-teacher training course run by CIRES, Balarat, CO
- 1998-2002 *Displays* for the [Limon Heritage Museum](#), Limon, CO: “The Climate of the Eastern Plains” (1998), “El Niño, La Niña, and Limon” (1999-2000), “Climate Variations over Colorado’s Eastern Plains” (2001-2002)
- 1997-1999,  
2003-2010,  
2012-2013 *Science Fair Judge*, Boulder, CO
- 1997 *Online Mentor* for the [SUCCEED](#) camp, run by Shodor Educational Foundation

## Select Invited Presentations

- 2018 Spoke about “A Meteorologist’s Journey from Connecticut’s Woodlands to the Tropical Pacific” at the Symposium welcome  
(The GLOBE Program’s [2018 Southwest Regional Student Science Symposium](#), Boulder, Colorado)
- 2016 One of seven presenters/panelists for [My Career Trajectory](#)  
(U.S. Department of Commerce - Boulder Labs *Poster Symposium, Workshop, and Networking Event*, Boulder, Colorado)
- 2016 One of five presenters/panelists for [What’s Your Passion? Skill-Based Careers in Meteorology: Research](#)  
(American Meteorological Society’s *15<sup>th</sup> Annual Student Conference*, New Orleans, Louisiana)
- 2015 Gave a 5-minute [IGNITE](#)-style talk, “What Mentoring Means to Me”, at the [PROGRESS](#) Workshop  
(*October 2015 PROMoting Geoscience Research, Education, & Success Workshop*, Estes Park, Colorado)
- 2014 Gave a 30-minute Weather Briefing for interested attendees on the final morning of the [Internet2](#) Global Summit Annual Meeting  
(*2014 Internet2 Global Summit*, Denver, Colorado)
- 2011 Presented remarks on “Joanne Simpson and the Narratives of Women’s Lives” as a panelist at the AMS’s Women in Atmospheric Sciences Luncheon  
(*91<sup>st</sup> Annual Meeting of the American Meteorological Society*, Seattle, Washington)

- 2010 Presented [“Encouraging Young Scientists in the American Meteorological Society”](#) at the [Roundtable of Representatives from Federal Agencies and Professional Societies](#) (*“Framing Issues and Strategies: Where We Stand--Postdoctoral and Early Career Researchers”*, held by The National Academies' [Committee on Women in Science, Engineering, and Medicine \(CWSEM\)](#), Washington, D.C.)

## Refereed Publications

- Adachi, A., T. Kobayashi, K. S. Gage, D. A. Carter, L. M. Hartten, W. L. Clark, and M. Fukuda, 2005: Evaluation of 3-beam and 4-beam profiler wind measurement techniques using a 5-beam wind profiler and collocated meteorological tower. *J. Atmos. Oceanic Technol.*, **22**, 1167-1180, <https://doi.org/10.1175/JTECH1777.1>.
- Adachi, A., W. L. Clark, L. M. Hartten, K. S. Gage, and T. Kobayashi, 2004: An observational study of a shallow gravity current triggered by katabatic flow. *Ann. Geophys.*, **22**, 3937-3950, <https://doi.org/10.5194/angeo-22-3937-2004>.
- Angevine, W. M., A. W. Grimsdell, L. M. Hartten, and A. C. Delany, 1998: The Flatland Boundary Layer Experiments. *Bull. Amer. Meteor. Soc.*, **78**, 419-431, [https://doi.org/10.1175/1520-0477\(1998\)079%3C0419:TFBLE%3E2.0.CO;2](https://doi.org/10.1175/1520-0477(1998)079%3C0419:TFBLE%3E2.0.CO;2).
- Ciesielski, P. E., L. M. Hartten, and R. H. Johnson, 1997: Impacts of merging profiler and rawinsonde winds on TOGA COARE analyses. *J. Atmos. Oceanic Technol.*, **14**, 1264-1279, [https://doi.org/10.1175/1520-0426\(1997\)014%3C1264:IOMPAR%3E2.0.CO;2](https://doi.org/10.1175/1520-0426(1997)014%3C1264:IOMPAR%3E2.0.CO;2).
- Dole, R. M., J. R. Spackman, M. Newman, G. P. Compo, C. A. Smith, L. M. Hartten, and 54 Coauthors, 2018: Advancing Science and Services during the 2015-16 El Niño: The El Niño Rapid Response Field Campaign. *Bull. Amer. Meteor. Soc.*, **99**, 975-1001, <https://doi.org/10.1175/BAMS-D-16-0219.1>.
- Gutzler, D. S. and L. M. Hartten, 1995: Daily variability of lower tropospheric winds over the tropical western Pacific. *J. Geophys. Res.*, **100**, 22,999-23,008, <https://doi.org/10.1029/95JD01879>.
- Hartten, L. M., 1996: Synoptic settings of westerly wind bursts. *J. Geophys. Res.*, **101**, 16,997-17,019, <https://doi.org/10.1029/96JD00030>.
- Hartten, L. M., 1998: Reconciliation of surface and profiler winds at ISS sites. *J. Atmos. Oceanic Technol.*, **15**, 826-834, [https://doi.org/10.1175/1520-0426\(1998\)015%3C0826:ROSAPW%3E2.0.CO;2](https://doi.org/10.1175/1520-0426(1998)015%3C0826:ROSAPW%3E2.0.CO;2).
- Hartten, L. M., C. J. Cox, P. E. Johnston, D. E. Wolfe, S. Abbott, and H. A. McColl, 2018: Central-Pacific surface meteorology from the 2016 El Niño Rapid Response (ENRR) field campaign. *Earth Syst. Sci. Data*, **10**, 1139-1164, <https://doi.org/10.5194/essd-10-1139-2018>.
- Hartten, L. M., C. J. Cox, P. E. Johnston, D. E. Wolfe, S. Abbott, H. A. McColl, X.-W. Quan, and M. G. Winterkorn, 2018: Ship- and island-based soundings from the 2016 El Niño Rapid Response (ENRR) field campaign. *Earth Syst. Sci. Data*, **10**, 1165-1183, <https://doi.org/10.5194/essd-10-1165-2018>.
- Hartten, L. M. and P. A. Datulayta, 2004: Seasonal and interannual variations in the daily cycle of winds over the Galápagos. *J. Climate*, **17**, 4522-4530, <https://doi.org/10.1175/3217.1>.
- Hartten, L. M. and K. S. Gage, 2000: ENSO's impact on the annual cycle: The view from Galápagos. *Geophys. Res. Lett.*, **27**, 385-388, <https://doi.org/10.1029/1999GL010953>.
- Hartten, L. M. and D. S. Gutzler, 1998: Estimates of large-scale divergence over the western equatorial Pacific. *J. Geophys. Res.*, **103**, 25,895-25,904, <https://doi.org/10.1029/98JD02171>.
- Hartten, L. M. and P. E. Johnston, 2014: Stratocumulus-topped marine boundary layer processes revealed by the absence of profiler reflectivity. *J. Appl. Meteor. Climatol.* (ISARS Special Issue), **53**, 1775-1789, <https://doi.org/10.1175/JAMC-D-12-0308.1>.
- Hartten, L. M., P. E. Johnston, V. M. Rodríguez Castro, and P. S. Esteban Pérez 2019: Post-deployment calibration of a tropical UHF profiling radar via surface- and satellite-based methods. *J. Atmos. Oceanic Technol.*, **36**, 1729-1751, <https://doi.org/10.1175/JTECH-D-18-0020.1>.
- Hartten, L. M. and M. A. LeMone, 2010: AMS membership survey results: The evolution and current state of the atmospheric sciences "pipeline". *Bull. Amer. Meteor. Soc.*, **91**, 942-956, <https://doi.org/10.1175/2010BAMS2537.1>.

- Hartten, L. M. and M. A. LeMone, 2014: How representative are AMS demographic surveys?. *Bull. Amer. Meteor. Soc.*, **95**, 775-779, <https://doi.org/10.1175/BAMS-D-13-00058.1>.
- Hechtel, L. M., C.-H. Moeng, and R. B. Stull, 1990: The effects of nonhomogeneous surface fluxes on the convective boundary layer: A case study using large-eddy simulation. *J. Atmos. Sci.*, **47**, 1722-1741, [https://doi.org/10.1175/1520-0469\(1990\)047%3C1721:TEONSF%3E2.0.CO;2](https://doi.org/10.1175/1520-0469(1990)047%3C1721:TEONSF%3E2.0.CO;2).
- Johnston, P. E., L. M. Hartten, C. H. Love, D. A. Carter, and K. S. Gage, 2002: Range errors in wind profiling caused by strong reflectivity gradients. *J. Atmos. Oceanic Technol.*, **19**, 934-953, [https://doi.org/10.1175/1520-0426\(2002\)019%3C0934:REIWPC%3E2.0.CO;2](https://doi.org/10.1175/1520-0426(2002)019%3C0934:REIWPC%3E2.0.CO;2).
- Penland, C., and L. M. Hartten, 2014: Stochastic forcing of north tropical Atlantic sea surface temperatures by the North Atlantic Oscillation. *Geophys. Res. Lett.*, **41**, 2126-2132, <https://doi.org/10.1002/2014GL059252>.
- Riddle, A. C., L. M. Hartten, D. A. Carter, P. E. Johnston, and C. R. Williams, 2012: A minimum threshold for wind profiler signal-to-noise ratios. *J. Atmos. Oceanic Technol.*, **29**, 889-895, <https://doi.org/10.1175/JTECH-D-11-00173.1>.
- Zuidema, P., C. Fairall, L. M. Hartten, J. E. Hare, and D. E. Wolfe, 2006: On air-sea interaction at the mouth of the Gulf of California. *J. Climate*, **20**, 1649-1661, <https://doi.org/10.1175/JCLI4089.1>.

## Published Data Sets

- Cox, C., and L. Hartten, 2017: El Niño Rapid Response (ENRR) Field Campaign: Surface Flux Data from the NOAA Ship Ronald H. Brown, 2016-02 to 2016-03 (NCEI Accession 0167875). NOAA/National Centers for Environmental Information, <https://doi.org/10.7289/V58050VP>.
- Cox, C., D. Wolfe, L. Hartten, and P. Johnston, 2017: El Niño Rapid Response (ENRR) Field Campaign: Radiosonde Data (Level 2) from the NOAA Ship Ronald H. Brown, February-March 2016 (NCEI Accession 0161527), Version 1.1. NOAA/National Centers for Environmental Information, <https://doi.org/10.7289/V5X63K15>.
- Cox, C., D. Wolfe, L. Hartten, and P. Johnston, 2017: El Niño Rapid Response (ENRR) Field Campaign: Surface Meteorological and Ship Data from the NOAA Ship Ronald H. Brown, February-March 2016 (NCEI Accession 0161528), Version 1.1. NOAA/National Centers for Environmental Information, <https://doi.org/10.7289/V5SF2T80>.
- Hartten, L., P. Johnston, C. Cox, and D. Wolfe, 2017: El Niño Rapid Response (ENRR) Field Campaign: Radiosonde Data (Level 2) from Kiritimati Island, January-March 2016 (NCEI Accession 0161525), Version 1.1. NOAA/National Centers for Environmental Information, <https://doi.org/10.7289/V55Q4T5K>.
- Hartten, L., P. Johnston, C. Cox, and D. Wolfe, 2017: El Niño Rapid Response (ENRR) Field Campaign: Surface Meteorological Data from Kiritimati Island, January-March 2016 (NCEI Accession 0161526), Version 1.1. NOAA/National Centers for Environmental Information, <https://doi.org/10.7289/V51Z42H4>.

## Select Other Publications

- Carbone, R., R. Cifelli, B. Cotton, C. Davis, M. Douglas, C. Fairall, K. Gage, D. Gochis, L. Hartten, W. Higgins, R. Johnson, G. Kiladis, M. Moncrieff, W. Petersen, S. Rutledge, S. Williams, 2003: Science Overview of the North American Monsoon Experiment NAME. submitted to the National Science Foundation, 36pp.
- Svensson, G., B. Casati, J. Day, T. Uttal, Ø. Godøy, and L. Hartten, 2020: [YOPPsiteMIP – The YOPP site Model Inter-comparison Project](https://www.polarprediction.net/en/key-yopp-activities/yoppsite mip/). Available at <https://www.polarprediction.net/en/key-yopp-activities/yoppsite mip/>, 15pp.

## Professional Training & Development

- 2019 “Open Science for Arctic Research and Data Management”  
(Five-day short course conducted by staff from NSF's Arctic Data Center and the National Center for Ecological Analysis and Synthesis (NCEAS), Santa Barbara. Through a mixture of lectures, hands-on programming, and collaborative exercises, the following topics were addressed: open data and open science (including reproducibility and provenance), literate analysis, version control, tidying and reformatting data, data documentation and publishing, collaboration and team science. Presentations and activities made extensive use of **R**, **RStudio**, **RMarkdown**, **git**, and **GitHub**.)
- 2018 “Bayesian Methods for Quantifying Measurement Uncertainty”  
(Three-day short course conducted by staff from the NIST Statistical Engineering Division, Boulder. This combined lectures, hands-on activities, and short computational exercises utilizing **R**, **JAGS**, and **RStudio**.)  
“Bystander Intervention Training” and “Combating Harassment at CU and in Geoscience” (CIRES Diversity and Inclusion Training events presented by Teresa Wroe, Director of Education and Prevention and Deputy Title IX Coordinator for CU-Boulder)
- 2017 “Understanding Generational Differences”, “Diversity 101”, and “Emotional Intelligence”  
(Webinars comprising the NOAA Research EEO "Diversity & Inclusion Training Series")
- 2015-2018 “Align Your Time with Your Priorities”, “Mastering Academic Time Management”, “How to Develop a Daily Writing Practice”, “Cultivating Your Network of Mentors, Sponsors & Collaborators”, “Overcoming Academic Perfectionism”, and others  
(Core Curriculum webinars presented by the [National Center for Faculty Development and Diversity](#))  
“How to Write Proposals that Get Funded and Papers that Get Cited”, “Writing as Metaphor: Discovering a Writing Process that Works for You”, “How to Develop and Sustain Healthy Partnerships with Co-Authors”, “Re-Thinking Mentoring: How to Build Communities of Inclusion, Support & Accountability”, “Building A Publishing Pipeline: Concrete Strategies for Increasing Your Writing Productivity”, and others  
(Guest webinars presented by the [National Center for Faculty Development and Diversity](#))
- 2010 “MATLAB Fundamentals” (Four-day e-Learning training conducted by The MathWorks)
- 2008 “NCL Workshop” (Four-day training, combining lectures and hands-on labs, conducted by staff from the National Center for Atmospheric Research (NCAR), Boulder)
- 2005 “Advanced Leadership Workshop” (Three-day workshop sponsored by Leadership Education for Advancement and Promotion, Univ. of Colorado - Boulder)  
“Strategic Thinking for Future Leaders” (Seminar/workshop sponsored by Leadership Education for Advancement and Promotion, Univ. of Colorado - Boulder)  
“Success through Mentoring: A Workshop on Mentoring Research and Practice” (One-day workshop conducted by MentorNet in conjunction with the SACNAS National Conference)
- 2003 “Scientific Inquiry in the K-12 Classroom” (One-day workshop sponsored by various affiliates of the University of Colorado - Boulder)
- 2003-2008, 2014 “CU Women Succeeding: Faculty Development Symposium” (One-day, system-wide symposium held annually and sponsored by various Univ. of Colorado organizations)
- 2003 “She Said/He Said: Gender Differences in the Workplace” (Seminar/workshop sponsored by Leadership Education for Advancement and Promotion, Univ. of Colorado - Boulder)
- 2001 “Selecting and Interviewing Student Employees” (Training offered by Organizational and Employee Development, Univ. of Colorado - Boulder)  
“Fundamentals of Supervision” (Training offered by Organizational and Employee Development, Univ. of Colorado - Boulder)
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*Last updated on 20 August 2020.*