Curriculum Vitae

Malaquias Peña, Ph.D.
Associate Research Professor,
School of Civil and Environmental Engineering,
College of Engineering
University of Connecticut
e-mail: mpena@uconn.edu

Education

University of Maryland	College Park, MD	Meteorology	Ph.D. 2003

Thesis title: Locally coupled Ocean-Atmosphere Anomalies their Duration and Predictability
Advisor: Eugenia Kalnay

University of Oklahoma	Norman, OK	Meteorology	MSc. 1999

Thesis title: Wet and Dry Spells on the Pacific side of Central America
Advisors: Michael W. Douglas and Frederick Carr

National Autonomous University of Mexico	Mexico City	Physics	BSc. 1993

Thesis title: Dynamic Renormalization Group Analysis of Flow in Porous Media
Advisor: Gerardo Carmona

Professional Appointments

2017-2025	Associate Professor	University of Connecticut
2017-2019	Manager	Eversource Energy Center
2015-2017	Senior Software Engineer	IMSG at NCEP-NWS, NOAA
2010-2015	Consultant	World Meteorological Organization
2010-2015	Task Leader	IMSG at NCEP-NWS, NOAA
2004-2010	Research Scientist	SAIC at NCEP-NWS, NOAA
2003-2004	Research Associate	University of Maryland
2001-2003	Faculty Assistant	University of Maryland
1999	Research Associate	Univ. of Oklahoma/NSSL-NOAA

Areas of Interest

Observing networks and data assimilation; modeling of Earth and environmental systems; grid modernization and renewable energy integration; reliability and resiliency engineering.

Mentoring experience

Major Advisor

Muhammad R. Haider (PhD Student, University of Connecticut, Storrs, CT),	2017 to 2022
Yue Yin (PhD Student, University of Connecticut, Storrs, CT),	2018 to 2024
Altan Unlu (PhD Student and postdoc, University of Connecticut, Storrs, CT),	2020 to 2024
Panagiotis Mitsopoulus (PhD Student, University of Connecticut, Storrs, CT),	2021 to date
Aryanna Fontanez (PhD Student, University of Connecticut, Storrs, CT),	2024 to date
Aaron Haegele (MEng Student, University of Connecticut, Storrs, CT),	2018 to 2020
Yamila García (BS and MS Student, University of Connecticut, Storrs, CT),	2022 to date
Nikolas Franceschi-Hofmann (MS Student, University of Connecticut, Storrs, CT),	2023 to 2024
Xinba Li (BS Student, University of Connecticut, Storrs, CT),	2019 to 2022

Erika Yao (BS Student, University of Connecticut, Storrs, CT),	2019 to 2020
Frantz Gabriel (BS Student, University of Connecticut, Storrs, CT),	2021
Julia Jackson (BS Student, University of Connecticut, Storrs, CT),	2021
Megan Judge (BS Student, University of Connecticut, Storrs, CT),	2022 to 2023
Delton Wentworth (BS Student, University of Connecticut, Storrs, CT),	2022 to date
Rohan Michael Anderson (BS Student, University of Connecticut, Storrs, CT),	2022 to date
Zoe Alber (BS Student, University of Connecticut, Storrs, CT),	2023 to 2024

Associate Advisor

Xinxuan Zhang (PhD, University of Connecticut, Storrs, CT),	2017-2018
Diego Cerrai (PhD Candidate, University of Connecticut, Storrs, CT),	2018-2019
Yagmur Derin (PhD Candidate, University of Connecticut, Storrs, CT),	2018-2019
Peter Watson (PhD Student, University of Connecticut, Storrs, CT),	2018-2021
Michael Walters (MS Student, University of Connecticut, Storrs, CT),	2020
Rehenuma Lazin (PhD Student, University of Connecticut, Storrs, CT),	2019-2022
Stergios Emmanouil (PhD Student, University of Connecticut, Storrs, CT),	2019-2022
Feifei Yang (PhD Student, University of Connecticut, Storrs, CT),	2020-2021
Marika Koujoula (PhD Student, University of Connecticut, Storrs, CT),	2020-2021
Sudipta Chouwdhury (PhD Student, University of Connecticut, Storrs, CT),	2022-2022
Fahad Khadim (PhD Student, University of Connecticut, Storrs, CT),	2022-2022
Pierre Fils (PhD Student, University of Connecticut, Storrs, CT),	2022-2023
Oumaima Lamakel (PhD Student, ME, University of Connecticut),	2021-2023
Yongjie Lu (PhD Student, ME, University of Connecticut),	2023-to date
Kethian Ye (PhD Student, ECE, University of Connecticut),	2023-2024
Bendong Tang (PhD Student, ECE, University of Connecticut),	2023-to date

External Associate Advisor

Christian Dominguez-Sarmiento (PhD, UNAM, Mexico),	2014
Marcos A. Saucedo (PhD, University of Buenos Aires, Argentina),	2015
Julio Buendia (PhD, College of Post-graduates, State of Mexico, Mexico),	2016
Ismael Guidson (PhD Student, Universidade Federal de Campina Grande, Brazil),	2019-2024
Cleiza Cristiano (MS Student, Universidade Federal de Campina Grande, Brazil),	2021-2024
Karen Teixera (MS Student, Universidade Federal de Campina Grande, Brazil),	2021-2024
Corrales Paola (PhD, University of Buenos Aires, Argentina),	2023
Alejandra De Vera (PhD, Universidad de la República, Uruguay)	2023

Educational program direction

Power Grid Modernization Certificate (Graduate, Online)	2020-2024

Teaching experience

Data Analytics for Engineers (Undergraduate, UConn, Storrs)	Since 2023
Quantitative Methods for Engineers (Graduate, UConn, Storrs)	2021
Modeling Coupled Urban Weather and Electric Grids Systems (Fulbright)	2020
Engineering Economics (Undergraduate, UConn, Storrs)	Since 2019
Predictive Analytics for Engineers and Scientists (Graduate, UConn, Storrs)	Since 2018
Environmental Modeling (Undergraduate, UConn, Storrs)	Since 2017
Fluid Mechanics (Invited, Undergraduate, UConn, Storrs)	2017
Ensemble modeling and probabilistic forecasts for meteorologists	2014
Numerical weather prediction and data assimilation for meteorologists	2012
Lectures on probabilistic forecasting and its verification (UMD, College Park, MD)	2010-2016

Awards

Fulbright Brazil-U.S. Scholar Award; Project title: Ensemble prediction for urban areas"; Period of award: 07/2019-08/2020.

Awards Since 2019

Monitoring Systems for Offshore Wind Energy

1. Sponsor: Bay State Wind. Period: 10/2019-01/2022
Title: Enhanced environmental monitoring and modeling capabilities for offshore wind energy generation (Phase I); role PI Amount $450,000

2. Sponsor: Eversource Energy Inc. Period: 02/2022-01/2027
Title: Monitoring, analysis, and prediction of offshore wind (Phase II); role PI
Amount $273,030

3. Sponsor: Office of Naval Research/NIUVT Period: 05/2023-04/2025
Title: Underwater Acoustic Sensor and Transmitter Network for Precise Environmental Monitoring and Surveillance; role PI Amount $400,000

Forecasting and Control systems for Renewable Energy Integration

4. Sponsor: Eversource Energy Inc. Period: 08/2020-12/2023
Title: Fine resolution nowcasting of PV and Loads in Distribution Grids; role PI
Amount $280,000

5. Sponsor: UConn Office of Vice-President Research Period: 09/2022-08/2023
Title: Multi-Time Scale Forecasting in Dispatch Hierarchy Frameworks for Renewable Energy Integration; role PI Amount $50,000

6. Sponsor: UConn Office of Vice-President Research Period: 09/2022-08/2023
Title: Weather Forecast 2.0: Towards highly localized and accurate environmental forecasting; role co-PI Amount $50,000

7. Sponsor: DOE/ National Energy Technology Laboratory Period: 01/2025 to 12/2025
Title: Resilient Grid System and Offshore Wind Power Integration; role co-PI
Amount $1,600,000.

Real Time Digital Tesbed Simulations for Resilient Offshore Wind and Wave Energy

8. Sponsor: NOAA-Weather Program Office-JTTI Period: 09/2023-08/2025
Title: A Wind-Wave-Current Data Assimilation Scheme for the 3D-Real Time Mesoscale Analysis; role PI Amount $900,000

9. Sponsor: Eversource Energy Inc. Period: 09/2023-08/2024
Title: High-Impact Weather and Power System Simulator for Renewable Energy Integration and Resilience Assessment; role PI Amount $80,000

10. Sponsor: NSF/IUCRC Period: 02/2025 to 12/2025
Title: Weather-Power-Grid Testbed Experiments for Risk Contingency Management during Hazards. PI
Amount $50,000

Collaboration to major awards

1. NSF Industry-University Cooperative Research Centers Program (IUCRC), 2022: Planning IUCRC at University of Connecticut: Center for Soil Dynamics Technologies (SoilTech). UWashington-Iowa State-University of Southern California-UConn consortium. Role: Co-PI

2. NSF Industry-University Cooperative Research Centers Program (IUCRC), 2023: Weather Innovation and Smart Energy and Resilience (WISER). UAlbany-UConn consortium. Role: Contributor to initial projects and plan.

3. NSF PIRE: Taming Water in Ethiopia: An Interdisciplinary Approach to Improve Human Security in a Water-Dependent Emerging Region. 2017-2021 $4,274,944. Role: Contributor

4. GAANN, U.S. Department of Education: Addressing Aging Infrastructure: From Components to Networks. 2018-2020 $746,250. Role: co-PI (15%)

Publications

Underlined names are major advisees; ** former or current postdocs or visitor; * undergraduate advisees.

Publications in refereed journals

49. Comparative Analysis of Hybrid Deep Learning Models for Electricity Loads Forecasting During Extreme Weather. *Energies* 18, 12, 3068.
48. Unlu, A. ** and M. Peña, 2024: Assessment of Line Outage Prediction Using Ensemble Learning and Gaussian Processes During Extreme Meteorological Events. Accepted in *Wind*.
47. Unlu, A., S. Dorado-Rojas, and M. Peña, 2024: Weather-Informed Forecasting for TSOPF of Transmission Systems with Large Renewable Share. Accepted in *IEEE Access*.
46. J. Feng**, Toth, Z., Z. Jing, and M. Peña 2024: A Foray of Dynamics into the Realm of Statistics: A Review of Ensemble Forecasting. Accepted in *Quarterly Journal of the Royal Meteorological Society*.
45. Yin, Y., and M. Peña, 2024: Analysis of bias correction of HRRR model outputs for offshore wind power ramp events. Accepted in *Renewable Energy*.
44. Unlu, A. and M. Peña, 2024: Combined MIMO Deep Learning Method for ACOPF with High Wind Power Integration. Accepted in *Energies*
43. Yin, Y., and M. Peña, 2024: An Imputing Technique for Surface Water Extent Timeseries with Streamflow Discharges. Accepted in *Water*.
42. S. Shekhar, S. Ziegler, M. Peña and D. Scherle, 2023: Deep Learning Signal Waveform Characterization of Partial Discharge for Underground Power Cable Conditions. Accepted in IEEE Xplore, PES.
41. Unlu, A., M. Peña, and Z. Wang, 2023: Comparison of the Combined Deep Learning Methods for Load Forecasting. IEEE Xplore, ISGT. DOI: 10.1109/ISGT51731.2023.10066449.
40. Mitsopoulos, P. and M. Peña, 2023: Characterizing Coastal Wind Speed and Significant Wave Height Using Satellite Altimetry and Buoy Data. Remote Sensing 15(4), 987.
39. Yang, M., G. Wang, S. Wu, P. Block, M. R. Heider, M. Peña, et. al., 2023: Seasonal prediction of crop yields in Ethiopia using an analog approach. Agricultural and Forest Meteorology, 331, 109347.
38. Freitas, I.G.P., H.B. Gomes, M. Peña, P. Mitsopoulos, 2022: Evaluation of Wind and Wave Estimates from CMEMS Reanalysis for Brazil's Offshore Energy Resource Assessment, Wind 2(3), 586-598.
37. Heider, M. R., M. Peña, and E. Anagnostou, 2022: Bias Correction of Mixed Distributions of Temperature with Strong Diurnal Signal. Weather and Forecasting, https://doi.org/10.1175/WAF-D-21-0108.1.
36. Jankov, I., S. Gregory, S. Ravela, Z. Toth, M. Peña, 2021: Partition of Forecast Error into Positional and Structural Components. Advances in Atmospheric Sciences, 38, 1012-1019.

35. da Rocha, R.L., D. D. Pinto, F.D. Silva, H.B. Gomes, H.B. Gomes, R. L. Costa, M. P. Pereira, M. Peña, C. Coelho, D. L. Herdies, 2021: An Empirical Seasonal Rainfall Forecasting Model for the Northeast Region of Brazil. Water, 31, 1631.
34. Li, X*. P. Mitsopoulos, Y. Yin, and M. Peña, 2021: SARAL-AltiKa Wind and Significant Wave Height for Offshore Wind Energy applications in the New England Region. *Remote Sensing*, **13**, 57.
33. Feng, J.**, Z. Toth, M. Peña, S. Ravela, 2020: A New Measure of Ensemble Central Tendency. Weather and Forecasting 35 (3), 879-889.
32. Feng, J.**, Z. Toth, M. Peña, J. Zhang, 2020: Partition of Analysis and Forecast Error Variance into Growing and Decaying Components. Quarterly Journal of the Royal Meteorological Society. Online early release view: https://doi.org/10.1002/qj.3738
31. Lillo, S., D. Parsons, M. Peña, 2019: Dynamics behind a record-breaking trough over Mexico and internal atmospheric variability during El Niño. Bulletin Amer. Meteorol. Soc. Online version available at DOI 10.1175/BAMS-D-18-0331.1.
30. Li, W., Y. Zhu, X. Zhou, D. Hou, E. Sinsky, C. Melhauser, M. Peña, R. Wobus, H. Guan, 2018: Evaluating the MJO Prediction skill from Different Configurations of NCEP GEFS Extended Forecast. Climate Dynamics. 52, 4923-4936.
29. Ping Liu, Yuejian Zhu, Qin Zhang, Jon Gottschalck, Minghua Zhang, Christopher Melhauser, Wei Li, Hong Guan, Xiaqiong Zhou, Dingchen Hou, Malaquias Peña, Guoxiong Wu, Yimin Liu, Linjiong Zhou, Bian He, Wenting Hu, Raymond Sukhdeo, 2018: Climatology of tracked persistent maxima of 500-hPa geopotential height, Climate Dynamics, 51, 701-717.
28. Yuejian Zhu, Xiaqiong Zhou, Wei Li, Dingchen Hou, Christopher Melhauser, Eric Sinsky, Malaquias Peña, Bing Fu, Hong Guan, Walter Kolczynski, Richard Wobus, Vijay Tallapragada, 2018: Towards the Improvement of Sub-Seasonal Prediction in the NCEP Global Ensemble Forecast System (GEFS), J. Geophys. Res., 123, 6732-6745.
27. Yuejian Zhu, Xiaqiong Zhou, Malaquias Peña, Wei Li, Christopher Melhauser, Dingchen Hou, 2017: Impact of sea surface temperature forcing on weeks 3 and 4 forecast skill in the NCEP Global Ensemble Forecasting System, Weather and Forecasting, 32, 2159-2174.
26. Julio Cesar Buendia-Espinoza, Paulino Perez-Rodriguez, Juan Manuel Gonzalez-Camacho, Sergio Perez-Elizalde, Adolfo Exebio-Garcia, Michel Rosengaus Moshinsky, Malaquias Pena, 2017: Identification of changes in the North Atlantic cyclogenesis using a Gaussian mixture model, Technologies y Ciencias del Agua, 8, 5-18.
25. Jie Feng, Zoltan Toth, Malaquias Peña, 2017: Spatially extended estimates of analysis and short-range forecast error variances, Tellus A, 69, 1-13.
24. Barradas, A., E. Kalnay, M. Peña, A. Bozorg-Magham, S. Motesharrei, 2017: Driver of the locally coupled ocean-atmosphere anomalies. Climate Dynamics, 48, 2153-2172.
23. S. Majumdar, E. Chang, M. Peña, R. Tatusko, Z. Toth, 2015: Planning the next decade of coordinated research on minutes-to-seasonal predictions of high-impact weather. Bull. Amer. Meteor. Soc., 96, 461-464.
22. A. Robertson, A. Kumar, M. Peña, F. Vitart, 2015: International Conference on Sub-seasonal to seasonal prediction. Bull. Amer. Meteor. Soc., 96, ES49-ES53.
21. Peña, M. and Z. Toth, 2014: Estimating analysis and forecast error variances. Tellus A. 66, 21767.
20. B. Kirtman et al. M. Peña, 2014: The National Multi-Model Ensemble. Bull. Amer. Meteor. Soc., 95, 585-601.
19. J. Ma, Y. Zhu, D. Hou, X. Zhou, M. Peña, 2014: Ensemble Transform with 3D Rescaling Initialization Method. Mon. Wea Rev., 142, 4053-4073.
18. S. Saha et al. M. Peña, 2014: The NCEP Climate Forecast System Version 2. Journal of Climate. 27, 2185-2208.
17. E. Chang, M. Peña, Z. Toth, 2013: International Research Collaboration in High-Impact Weather Prediction. Bull. Amer. Meteor. Soc., 94, ES149-ES151.
16. D. Hou, et. al. M. Pena, Bo Cui, 2013: Climatology-Calibrated Precipitation Analysis at Fine Scales: Statistical Adjustment of Stage IV towards CPC Gauge Based Analysis. J. Hydrometeorol., 14, 2542-2557.
15. E. Becker, H. van den Dool, and M. Peña, 2013: Short-term climate extremes: prediction skill and predictability. J. Climate, 26, 512-531. (http://dx.doi.org/10.1175/JCLI-D-12-00177.1)

14. Peña, M., Toth, Z. and M. Wei, 2010: Controlling noise in ensemble data assimilation schemes. Mon. Wea. Rev., 138, 1502-1512.
13. Peña, M., and H. van den Dool, 2008: Consolidation of Multi-Method Forecasts by Ridge Regression: Application to Pacific Sea Surface Temperature. Journal of Climate, American Meteorological Society. J. Climate, 21, 6521–6538.
12. Toth, Z., M. Peña, A. Vinzileos, 2007: Bridging the gap between weather and climate forecasting: Research priorities for intraseasonal prediction. Bull. Amer. Meteor. Soc., 88, 1427-1429.
11. Toth, Z. and M. Peña, 2007: Data Assimilation and Numerical Forecasting with imperfect models: The mapping paradigm. Physica D, 230, 146-158.
10. Saha, S., M. Peña, et. al., 2006: The NCEP Climate Forecast System. Journal of Climate, 19, 3483-3517. Manuscript available at http://cfs.ncep.noaa.gov
9. Peña, M. and E. Kalnay, 2004: Separating fast and slow modes in coupled chaotic systems. Non-linear Processes in Geophysics, 11,319-327.
8. Evans, E., N. Bhatti, J. Kinney, L. Pann, M. Peña, S-C Yang, E. Kalnay and J. Hansen, 2004: Rise undergraduates find that regime changes in Lorenz's model are predictable. Bulletin of the American Meteorological Society, 85, 520-524.
7. Peña, M., M. Cai and E. Kalnay, 2004a: Lifespan of sub-seasonal locally coupled anomalies. J. Climate, 17, 1597-1604.
6. Peña, M., M. Cai and E. Kalnay, 2004b: Coupling Atmospheric Anomalies with the Ocean. Bulletin of the American Meteorological Society
5. Peña, M., E. Kalnay and M. Cai, 2003: Statistics of locally coupled ocean-atmosphere anomalies. Non-linear Processes in Geophysics, 10, 245-251. European Geophysical Union.
4. Peña, M. and M.W. Douglas, 2002: Characteristics of Central American wet and dry spells during the rainy season. Monthly Weather Review, 130, 3054-3073.
3. Peña, M., E. Kalnay and M. Cai, 2001: Coupled ocean and atmosphere intraseasonal anomalies in reanalysis and AMIP data. WMO Magazine.
2. Douglas, M., M. Peña and J.L. Santos, 1998: Special Meteorological observations during ENSO 1997/1998 in the Northern Part of South America. Bull. Inst. Fr. Etudes Andines, 27, 493-500.
1. Carmona G. and M. Peña, 1992: The application of the renormalization group to diffusion in amorphous material. Revista Mexicana de Física 38 (Suplemento 1), 212-220.

Book Chapters

2. Peña, M., L-C Chen, H. van den Dool, 2019: Climate Variability and Long-Term Ensemble Predictions. In: Duan Q., Pappenberger F., Thielen J., Wood A., Cloke H., Schaake J. (eds) Handbook of Hydrometeorological Ensemble Forecasting. Springer, Berlin, Heidelberg.

1. Huiling Yuan, Zoltan Toth, Malaquias Peña, Eugenia Kalnay, 2018: Overview of weather and climate systems. In: Duan Q., Pappenberger F., Thielen J., Wood A., Cloke H., Schaake J. (eds) Handbook of Hydrometeorological Ensemble Forecasting. Springer, Berlin, Heidelberg.

Selected International Reports
9. Haider, RM and M Peña: Bias Correction of Mixed Distributions of Temperature and Precipitation with Strong Diurnal Signal; NOAA's 46th Climate Diagnostics & Prediction Workshop; October 27, 2021
8. Haider, RM and M Peña: Value Added Seasonal Forecast for the Blue Nile River Basin; NOAA's 45th Climate Diagnostics & Prediction Workshop; December 13, 2020
7. Haider, RM and M Peña: Enabling Numerical Seasonal Forecasts for High-Resolution Modeling of Blue Nile River Basin; NOAA's 44th Annual Climate Diagnostics and Prediction Workshop; October 23, 2019
6. H. Yuan, P. Schultz, E.I. Tollerud, D. Hou, Y. Zhu, M. Pena, M. Charles, Z. Toth, 2019: Pseudo-precipitation: A continuous precipitation variable. NOAA Technical Memorandum OAR GSD-62. https://doi.org/10.25923/3h37-gp49

5. Penny et al. and M. Peña, 2017. Coupled Data Assimilation for Integrated Earth System Analysis and Prediction, Goals, Challenges and Recommendations. WWRP-World Meteorol. Organization. Available at https://www.wmo.int/pages/prog/arep/wwrp/new/documents/Final_WWRP_2017_3_27_July.pdf
4. M. Peña, 2017. Development and use of numerical seasonal prediction systems. Instituto de Geofísica del Perú. Technical Bulleting, June issue. Available at: http://www.met.igp.gob.pe/publicaciones/Divulgacion_PPR_El_Nino_IGP_201706.pdf
3. M. Peña and B. Mills, 2011. WMO North American Regional Committee: Annual report of activities. Available at: WWRP-WMO website. Doc4_4_North_American_Regional_Activities.pdf
2. M. Peña and E. Kalnay, 2002: The life span of intraseasonal atmospheric anomalies: dependence on the phase relationship with the ocean. In: Working Group on Numerical Experimentation (WGNE) Blue Book.
1. Douglas, M., M. Peña, R. Villarpando, 2000: Special observations of the low-level flow over eastern Bolivia during the 1999 atmospheric mesoscale campaign. 6th Inter, Conf. on Southern Hemisphere Meteorology and Oceanography.

Selected Invited Talks

"Weather forecasting in power grid systems" Colloquium CIMA, University of Buenos Aires, Argentina, November, 2022.
"Fast-changing environment in an all-electric and digital society", XXI Encontro dos Alunos de Pos-Graduacao em Instituto Nacional de Pesquisas Espaciais (INPE). Brazil, October, 2022.
"Multi-Scale Wind Power Forecasting in Dispatch and Risk Hierarchical Frameworks", 2nd Climate and Renewable Energy Resources Workshop. Alagoas, Brazil, July 2022.
"Energy Technology and Standards", Energy Infrastructure Resilience and National Security Workshop. Sep 29-30, 2021.
"Change Point Detection Methods for Renewable Energy Integration", Quality and Productivity Research Conference, Tallahasee, FL, July 2021.
"Metrics for validation of coastal models", Development Testbed Center: NOAA-UFS Evaluation Metrics Workshop, College Park, February, 2021.
"Wind and solar energy resource monitoring and prediction", First Climate and Renewable Energy Resources Workshop. Alagoas, Brazil, August, 2020.
"Challenges and Opportunities in Environmental Modeling", School of Engineering, State University of Cd. Juarez, Mexico, 2019.
"Increased demand for climate data, information, and knowledge" Climandes Program in South-America. World Meteorological Organization. Perú, March 2018.
"Dynamical Seasonal Prediction for the UCONN-PIRE Project", University of Wisconsin, Wisconsin, November 2017.
"Numerical Weather Prediction transformations and uses for better Climate and Environmental Predictions". Stony Brooks University, Stony Brooks, NY, May 2019.
"Estimating and sampling model uncertainty in coupled NWP systems". Third RIKEN International Symposium on Data Assimilation and 7th Annual Japan Data Assimilation Workshop. Kobe, Japan, February 2017.
"Routine Diagnostics to Monitor the Next –Generation Unified Global Coupled System (UGCS) model". NOAA-Environmental Modeling System (NEMS) Workshop. College Park, MD. September, 2016d.
"Exploring ensemble generation approaches for monthly forecasts at NCEP". NOAA ESRL, Boulder, Colorado, July, 2016c.
"NCEP seasonal ensemble forecasting: the NMME and IMME projects". Seventh NCEP Ensemble User Workshop. College Park, MD., June 2016b.
"Global ensemble forecasts: Current research and developments". Argentine's National Meteorological Service, Buenos Aires, ARGENTINA, March 1st, 2016a.
"Development of a Monthly Global Ensemble Forecast System at NCEP". Canadian Meteorological Center, Dorval, CANADA. May 5, 2015.
"Predicting anomalies in atmosphere-ocean coupled models." Symposium of Eugenia Kalnay, AMS. Phoenix, AZ, January 2015b.

"International Multi-Model Ensembles. Current research and developments" American Geophysical Union, San Francisco, CA. December 2014

"Global ensemble forecasts at NCEP: Current research and developments". At the 20th Anniversary of the CPTEC- Sao Paolo, Brazil. October 11-14, 2014.

"The Multi-Model Ensemble Prediction projects at NCEP". Technical Meeting of EUROSIP. Toulouse, France. February 2012.

Selected conference papers

S. Ziegler, S. Shekhar, D. Scherle, and M. Peña: Deep Learning Signal Waveform Characterization of Partial Discharge for Underground Power Cable Conditions, IEEE General Meeting, Orlando, FL, 2023.

A. Unlu, M. Peña and Z. Wang, "Comparison of the Combined Deep Learning Methods for Load Forecasting," 2023 IEEE Power & Energy Society Innovative Smart Grid Technologies Conference (ISGT), Washington, DC, USA, 2023, pp. 1-5, doi: 10.1109/ISGT51731.2023.10066449.

Y. Yin and M. Peña: HRRR Forecast Model Evaluation for Offshore Wind Power Ramps, AMS, 2023, Denver, CO.

A. Unlu, M. Peña and Z. Wang, "Deep Learning Architectures for Solar PV Forecasting," 2022 North American Power Symposium (NAPS), Salt Lake City, UT, USA, 2022, pp. 1-6, doi: 10.1109/NAPS56150.2022.10012176.

Y. Yin and M. Peña: HRRR Forecast Model Evaluation for Offshore Wind Power Ramps, AMS, 2022, (Online) Huston, TX.

Y. Yin and M. Peña: Analysis of Imputation Methods for Bi-variate Surface Water Extent and Stream Gage Time Series. AGU Fall Meeting 2021.

Haider, RM and M Peña: Evaluating S2S rainfall forecast for agricultural action-plan in the Upper Blue Nile River Basin. AGU Fall Meetig 2021.

Haider, RM and M Peña: Seasonal Forecasts for Food Security Applications in the Upper Blue Nile River Basin. AGU Fall Meeting 2020.

Haider, RM and M Peña: Bias Correction of Precipitation and Temperature Forecasts for Blue Nile Water Resources Management. AGU Fall Meeting 2018.

M. Peña: Ensemble generation approaches in the NCEP CFSv2. AMS Annual Conference, Seattle, WA, Jan 2017.

M. Peña: Monitoring the performance of the next Climate Forecast System version 3, throughout its development stage at EMC/NCEP, San Francisco, CA, Dec. 2016*e*.

M. Peña: Coupled perturbations in the CFSv2. S2S Extreme Events Workshop, Palisades, N.Y., Dec. 2016*d*.

M. Peña: Tropical influence on the forecast skill variability in the NH. Workshop on Teleconnections. International Center for Theoretical Physics. Trieste, ITALY, October, 2016*c*.

M. Peña: EnKF perturbations in coupled models for subseasonal predictions. International Workshop on Coupled Data Assimilation. Toulouse, FRANCE, October, 2016*b*.

M. Peña: The use of the ensemble covariance matrix to propagate forecast uncertainty across climate model components. Columbia, MD, May 2016*a*.

M. Peña: Monthly Ensemble Forecasts from the NCEP GEFS. AGU, Montreal Canada. May 4, 2015c.

M. Peña: The MJO signal in the NCEP GEFS prediction system. Symposium of Madden Julian Oscilation, AMS. Phoenix, AZ, January 2015a.

M. Peña: Ensemble generation methods and skill of subseasonal predictions in the NCEP GEFS. World Weather Open Science Conference, Montreal, Canada. August 16-21, 2014.

M. Peña and Z. Toth: An unbiased estimation of analysis and short-range forecast error variances. World Weather Open Science Conference, Montreal, Canada. August 16-21, 2014.

M. Peña: The Monthly GEFS. North American Ensemble Forecast System Workshop. Montreal, Canada. June 17-20, 2014.

M. Peña: A series of training courses on Ensemble Forecasting. Provided at the Meteorological Center in Peru. May 26-30, 2014.

M. Peña: The Extended Range Global Ensemble Forecast System at NCEP. Special Symposium on Advancing Weather and Climate Forecasts: Innovative Techniques and Applications. January 2013. Austin, TX.

M. Peña: Predictions beyond 2-weeks with the NCEP Global Ensemble Forecast System (GEFS). American Geophysical Union, The Meeting of the Americas. Iguazzu, Brazil. May 2010.

Service

Associate Editor: Journal of Weather and Forecasting, AMS; MDPI International Journal of Modelling.

Journal Referee: Nature, Climate Dynamics, Quarterly Journal of the Royal Meteorological Society, Journal of Climate, Weather and Forecasting, Monthly Weather Review, Atmosphere, Journal of Non-linear Processes in Geophysics, Journal of Geophysics Letters, Remote Sensing, Advances in Atmospheric Sciences, Atmosfera, Ocean.

Reviewer: Deutsche Forschungsgemeinschaft (German Research Foundation), NCEP internal reviewer, NOAA Program for Climate Research (2015, 2021), OceanSITES Panel reviewer, NSF reviewer.

Workshop organizer:

Annual Summit on Grid Modernization, Storrs, CT, 2019
Workshop on Grid Modernization, Storrs, CT, 2018
US THORPEX-Legacy Planning Meeting, Silver Spring, MD, June 2014
Sixth NCEP Ensemble Users Workshop, College Park, MD, March 2014,
International Conference on Subseasonal forecasting, College Park, MD, October 2013
US THORPEX Workshop, College Park, MD, USA, 19 - 20 September 2012

Conference session co-chair:

Severe Weather: Predictability, Uncertainty, and Best Use of Forecast Information, American Meteorological Society (AMS), Boston, MA, 2020; Ensemble Modeling of High-impact, Multi-scale Weather to Decadal Phenomena, Asia Oceania Geosciences Society (AOGS), Singapore (and online), 2022.

Advisory panelist and working groups:

NCAR CGDL Meso America Affinity Group	2023-
CT-DEEP -GC3 Science & Technology Working Group	2022-2023
NOAA UFS Planning, S2S and Ensemble	2018
NOAA Subseasonal-to-Seasonal Task Force, Member	2016-2019
NOAA Climate Development Task Force, Member	2016-2019
NOAA Drought Prediction Task Force, Member	2015-2016
U.S. Climate Prediction Task Force, Member	2013-2014
CO-CHAIR of the U.S. WMO-THORPEX Science Steering Committee	2012-2014
CO-CHAIR of the WWRP North American Regional Committee	2009