

CURRICULUM VITAE FOR PAO-SHIN CHU, Professor and Hawaii State Climatologist (5/28/2020)

AFFILIATION: Department of Atmospheric Sciences, School of Ocean and Earth Science and Technology, University of Hawaii-Manoa, Honolulu, HI 96822
Tel: 808-956-2567, Fax: 808-956-2877, email: chu@hawaii.edu
Also affiliated with the UH Water Resources Research Center

EDUCATION:

Ph.D., 1981 University of Wisconsin-Madison (major in Meteorology and minor in statistics)
M.S., 1974 University of Wisconsin-Madison (Meteorology)
B.S., 1970 University of Chinese Culture (Meteorology)

PROFESSIONAL AWARDS AND RECOGNITION:

NASA/ASEE Summer Faculty Fellow, NASA/Goddard Space Flight Center, Maryland, 1994 and 1995

Invited by the chief editor of the Atmospheric Research journal (Elsevier Publishing Company) to write a review article on Bayesian analysis for extreme events (2011)

Chair Professor recognized by the Ministry of Science and Technology at the National Central University (2012, 2014) and National Taiwan University (2020), Taiwan

Associated Press article, lead story of the Star-Advertiser, June 4, 2013

http://www.staradvertiser.com/news/20130604_TRADEWINDS_SLACK_OFF.html?id=210040991

ACADEMIC AND PROFESSIONAL POSITION:

2018-2020 Chair of Departmental Personnel Committee
2011-2014 Steering Committee, NOAA Pacific Climate Information System (PaCIS)
2008-2010 Graduate Chair, Department of Meteorology
2002-present **Hawaii State Climatologist**
2000 **Professor**, Department of Meteorology, University of Hawaii
1990 Associate Professor, Department of Meteorology, University of Hawaii
1985 Assistant Professor, Department of Meteorology, University of Hawaii
1983 Research Assistant, Department of Atmospheric Science, Oregon State University

RESEARCH INTERESTS: Climate diagnostics and climate change in the tropics, natural hazards (tropical cyclones, drought, heavy rainfall, wild-land fire), extreme events, dynamical and statistical downscaling, tropical climate prediction, Bayesian inference, statistical modeling and analysis, and water resources

RESEARCH

A. Papers in peer-reviewed journals or professional book chapters

Lu, B., **P.-S. Chu**, S.-H. Kim, and C. Karamperidou, 2020: Hawaiian regional climate variability during two types of El Niño. *J. Climate*, minor revision.

Kim, S.-H., I.-J. Moon, and **P.-S. Chu**, 2020: An increase in global trends of tropical cyclone translation speed since 1982. *Environmental. Res. Lett.*, minor revision.

Xu, L., C. Zhang, N. Chen, H. Moradkhani, **P.-S. Chu**, and X. Zhang, 2020: Decreasing potential land precipitation variability under global warming. *Geophys. Res. Lett.*, in review.

Frazier, A.G., C.P. Giardina, T.W. Giambelluca, L. Brewington, Y.-L. Chen, **P.-S. Chu**, L.B. Fortini, D.A. Helweg, V.W. Keener, R.L. Longman, M.P. Lucas, A. Mair, D.S. Oki, J.T. Reyes, S.G. Yelenik, and C. Trauernicht, 2020: A century of spatial and temporal patterns of drought in Hawaii across hydrological, ecological, and socioeconomic scales. *J. Hydrology*, in review.

Zhang, H., **P.-S. Chu**, L. He, and D. Unger, 2019: Improving the CPC's ENSO forecasts using Bayesian model averaging. *Climate Dynamics*, 53, 3373-3385.

Lee, W., S.-H. Kim, **P.-S. Chu**, I.-J. Moon, and A.V. Soloviev, 2019: A new index to better estimate tropical cyclone intensity change in the western North Pacific. *Geophys. Res. Lett.*, 46, doi:10.1029/2019GL083273.

Basher, M., S. Islam, M. Stiller-Reeve, and **P.-S. Chu**, 2019: Changes in future rainfall extremes over northeast Bangladesh: A Bayesian model averaging approach. *Int. J. Climatol.*, 40, 3232-3249.

Chowdhury, R., and **P.-S. Chu**, 2019: An outlook on changing climate in the U.S. Affiliated Pacific Islands: Observations and CMIP5 model output. *Meteorological Applications*, 26, 528-541, doi - 10.1002/met.1781.

Chu, P.-S., H. Zhang, H.-L. Chang, T.-L. Chen, and K. Tofte, 2018: Trends in return levels of precipitation extremes during the typhoon season in Taiwan. *Int. J. Climatol.*, 38, 5107-5124.

Kim, S.-H., I.-J. Moon, and **P.-S. Chu**, 2018: Statistical-dynamical typhoon intensity prediction in the western North Pacific using track pattern clustering and ocean coupling predictors. *Wea. Forecasting*, **33**, 347-365.

Hsu, P.-C., H. Ting, C.-H. Tsou, **P.-S. Chu**, Y. Qian, and M. Bi, 2017: Roles of scale interactions in the abrupt change of tropical cyclone in autumn over the western North Pacific. *Clim. Dyn.*, **49**, 3175-3192.

Tofte, K., **P.-S. Chu**, and G. Barnes, 2017: Large-scale weather patterns favorable for volcanic smog occurrences on Oahu, Hawaii. *Air Quality, Atmosphere and Health*, **10**, 1163-1180.

Chang, H.-L., B. Brown, **P.-S. Chu**, and Y.-C. Liou, 2017: Nowcast guidance of afternoon thunderstorm initiations for Taiwan. *Wea. Forecasting*, **32**, 1801-1817.

O'Conner, **P.-S. Chu**, P.-C. Hsu, and K. Kodama, 2015: Variability of Hawaiian winter rainfall during La Niña events since 1956. *J. Climate*, **28**, 7809-7823.

Md Chowdhury and **P.-S. Chu**, 2015: Sea-level forecasts and early warning application: Expanding cooperation in the South Pacific. *Bull. Amer. Meteor. Soc.*, **96**, 381-386

Chen, Y. R., and **P.-S. Chu**, 2014: Trends in precipitation extremes and return levels in the Hawaiian Islands under a changing climate. *Int. J. Climatol.*, **34**, 3913-3925.

Zhao, H., **P.-S. Chu**, P.-C. Hsu, and H. Murakami, 2014: Exploratory analysis of extremely low tropical cyclone activity during the late-season of 2010 and 1998 over the western North Pacific and the South China Sea. *J. Advances in Modeling Earth Systems*, **6**, 1141-1153.

Fares, A., R. Awal, J. Michaud, **P.-S. Chu**, S. Fares, K. Kodama, and M. Rosener, 2014: Rainfall-runoff modeling in a flashy tropical watershed using the 2 distributed HL-RDHM model. *J. Hydrology*, **519**, 3436-3447.

Chu, P.-S., D.-J. Chen, and P.-L. Lin, 2014: Trends in precipitation extremes during the typhoon season in Taiwan over the last 60 years. *Atm. Sci. Lett.*, **15**, 37-43.

Hsu, P.-C., **P.-S. Chu**, H. Murakami, and X. Zhao, 2014: An abrupt decrease in the late-season typhoon activity over the western North Pacific. *J. Climate*, **27**, 4296-4312.

Stiller-Reeve, M.A., T. Spengler, **P.-S. Chu**, 2014: Testing a Flexible Method to Reduce False Monsoon Onsets. *PLoS ONE*, **9**, e104386. doi:10.1371/journal.pone.0104386.

Chowdhury M. R., **P.-S. Chu**, and C. Guard, 2014: An Improved Sea Level Forecasting Scheme for Hazards Management in the U.S.-Affiliated Pacific Islands. *Int. J. Climatol*, **34**, 2320-2329.

Chen, Y.-L., P.-L. Lin, F. Hsiao, **P.-S. Chu**, and M.-H. Su, 2013: Asia-Pacific Natural Hazard conference: Disastrous weather in a changing climate. *Bull. Amer. Meteor. Soc.*, **94**, ES175-ES178.

Chowdhury M. R., **P.-S. Chu**, and C. Guard, 2013: An Improved Sea Level Forecasting Scheme for Hazards Management in the U.S.-Affiliated Pacific Islands. *Int. J. Climatol*, **34**, 2320-2329.

Giambelluca, T., Q. Chen, A. Frazier, J. Price, Y.-L. Chen, **P.-S. Chu**, J. Eischeid, and D.M. Delparte, 2013: Online rainfall atlas of Hawaii. *Bull. Amer. Meteor. Soc.*, 94, 154-160 (<http://dx.doi.org/eres.library.manoa.hawaii.edu/10.1175/BAMS-D-11-00228.1>)

Garza, J., **P.-S. Chu**, Chase Norton, and T.A. Schroeder, 2012: Changes of the prevailing trade winds over the Islands of Hawaii and surrounding ocean. *J. Geophys. Res. (Atmospheres)*, 117, D11109, doi:10.1029/2011JD016888.

Chu, P.-S., J.-H. Kim, and Y. R. Chen, 2012: Have steering flows over the western North Pacific and the South China Sea changed over the last 50 years? *Geophys. Res. Lett.*, 39, L10704, doi:10.1029/2012GL051709.

Kim, H.-S., J.-H. Kim, C.-H. Ho, and **P.-S. Chu**, 2012: Track-pattern-based model for seasonal prediction of tropical cyclone activity in the western North Pacific. *J. Climate*, 25, 4660-4679.

Craddock, R.A., A. D. Howard, R. P. Irwin, R. M. E. Williams, S. Tooth, **P.-S. Chu**, and D. Swanson, 2012: Gully development in the Keanakāko‘i Tephra, Kīlauea Volcano, Hawai‘i: Implications for fluvial erosion and valley network formation on early Mars. *J. Geophys. Res. (Planet)*, 117, E08009, doi:10.1029/2012JE004074.

Chu, P.-S., and X. Zhao, 2011: Bayesian analysis for extreme climatic events: A review. *Atmospheric Research*, **102**, 243-262 (An Invited Paper).

Norton, C., **P.-S. Chu**, and T.A. Schroeder, 2011: Estimating changes in future heavy rainfall events for Oahu, Hawaii: A statistical downscaling approach. *J. Geophys. Res. (Atmospheres)*, **116**, D17110, doi:10.1029/2011JD015641.

Kim, H.-S., J.-H. Kim, C.-H. Ho, and **P.-S. Chu**, 2011: Pattern classification of typhoon tracks using the fuzzy c-means clustering method. *J. Climate*, **24**, 488-508.

Chu, P.-S., Y. R. Chen, and T.A. Schroeder, 2010: Changes in precipitation extremes in the Hawaiian Islands in a warming climate. *J. Climate*, **23**, 4881-4900.

Lu, M.-M., **P.-S. Chu**, and Y.-C. Lin, 2010: Seasonal prediction of tropical cyclone activity in the vicinity of Taiwan using the Bayesian multivariate regression method. *Weather and Forecasting*, **25**, 1780-1795.

Chu, P.-S., X. Zhao, C.-H. Ho, H.-S. Kim, M.-M. Lu, and J.-H. Kim, 2010: Bayesian forecasting of seasonal typhoon activity: A track-pattern-oriented categorization approach. *J. Climate*, **23**, 6654-6668.

Chu, P.-S., X. Zhao, and J.-H. Kim, 2010: Regional typhoon activity as revealed by track patterns and climate change. *Hurricanes and Climate Change*, Vol. 2, Eds. J. Elsner et al., Springer, 137-148.

Chowdhury, M.R., A.G. Barnston, C. Guard, S. Duncan, T.A. Schroeder, and **P.-S. Chu**, 2010: Sea-level variability and change in the US-affiliated Pacific islands: Understanding the high sea levels during 2006-2008. *Weather*, **65**, 263-268.

Zhao, X., and **P.-S. Chu**, 2010: Bayesian change-point analysis for extreme events (Typhoons, Heavy rainfall, and Heat Waves): A RJMCMC approach. *J. Climate*, **23**, 1034-1046.

Kim, H.S., C.-H. Ho, **P.-S. Chu**, and J.-H. Kim, 2010: Seasonal prediction of summertime tropical cyclone activity over the East China Sea using the least absolute deviation regression and the Poisson regression. *Int. J. Climatol.*, **30**, 210-219.

Kim, J.-H., C.-H. Ho, and **P.-S. Chu**, 2010: Dipolar redistribution of summertime tropical cyclone genesis between the Philippine Sea and the northern South China Sea and its possible mechanisms. *J. Geophys. Res-Atmosphere.*, **115**, D06104, doi:10.1029/2009JD012196.

Chou, J., J.-Y. Tu, and **P.-S. Chu**, 2010: Possible impacts of global warming on typhoon activity in the vicinity of Taiwan. *Climate Change and Variability*, S. Simard, Ed., ISBN: 978-963-307-144-2. InTech, 79-96. Available from <http://www.intechopen.com/books/climate-change-and-variability/possible-impacts-of-global-warming-on-typhoon-activity-in-the-vicinity-of-taiwan>.

Chowdhury, MR., **P.-S. Chu**, X. Zhao, T.A. Schroeder, and J. Marra, 2010: Sea level extremes in the U.S.-affiliated Pacific islands - A coastal hazard scenario to aid in decision analyses. *J. Coast. Conserv.*, **14**, 53-62, DOI 10.1007/s11852-010-0086-3.

Choi, K.S., J.Y. Moon, D.W. Kim, and **P.-S. Chu**, 2010: Seasonal prediction of tropical cyclone genesis frequency over the western North Pacific using teleconnection patterns. *Theoretical and Applied Climatology*, **100**, 191-206.

Tu, J.-Y., C. Chou, and **P.-S. Chu**, 2009: Abrupt shift of typhoon activity in the vicinity of Taiwan and its association with the western North Pacific-East Asia climate change. *J. Climate*, **22**, 3617-3628.

Chu, P.-S., X. Zhao, Y. Ruan, and M. Grubbs, 2009: Extreme rainfall events in the Hawaiian Islands. *J. Appl. Meteorol. Climatology*, **48**, 502-516.

Dolling, K., **P.-S. Chu**, and F. Fujioka, 2009: Natural variability of the Keetch/Byram drought index in the Hawaiian Islands. *Int. J. Wildland Fire*, **18**, 459-475.

Ho, C.-H., H.-S. Kim, and **P.-S. Chu**, 2009: Seasonal prediction of tropical cyclone frequency over the east China Sea through a Bayesian Poisson-regression method. *Asia-Pacific Journal of Atmospheric Sciences*, **45**, 45-54.

Chowdhury, Md. R., **P.-S. Chu**, T.A. Schroeder, and X. Zhao, 2008: Variability and predictability of sea-level extremes in the Hawaiian and U.S. Trust Islands: A knowledge base for coastal hazards management. *J. Coastal Conservation*, **12**, 93-104.

Chowdhury, Md. R., **P.-S. Chu**, X. Zhao, and T.A. Schroeder, 2008: Sea-level extremes and challenges to manage the risk of coastal hazards in the vicinity of Hawaiian Islands. *Solutions to Coastal Disasters*, L. Wallendorf, C. Jones, L. Ewing, and B. Jaffe, Eds., American Society of Civil Engineers, 28-37.

Chu, P.-S., and X. Zhao, 2007: A Bayesian regression approach for predicting seasonal cyclone activity over central North Pacific. *J. Climate*, **20**, 4002-4013.

Wu, P., and **P.-S. Chu**, 2007: Characteristics of tropical cyclone activity over the eastern North Pacific: The extremely active 1992 and the inactive 1977. *Tellus A*, **59**, 444-454.

Chowdhury, Md. R., **P.-S. Chu**, T.A. Schroeder, and N. Colasacco, 2007: Seasonal sea-level forecasts by canonical correlation analysis - An operational scheme for the U.S.-affiliated Pacific islands. *Int. J. Climatol.*, **27**, 1389-1402.

Chowdhury, Md. R., **P.-S. Chu**, and T.A. Schroeder, 2007: ENSO and seasonal sea-level variability: A diagnostic discussion for the Pacific islands. *Theo. Appl. Climatol.*, **88**, 213-224.

Chu, P.-S., X. Zhao, C.-T. Lee, and M.-M. Lu, 2007: Climate prediction of tropical cyclone activity in the vicinity of Taiwan using the multivariate least absolute deviation regression method. *Terrestrial, Atmospheric and Oceanic Sciences*, **18**, 805-825.

Zhao, X., and **P.-S. Chu**, 2006: Bayesian multiple changepoint analysis of hurricane activity in the eastern North Pacific: A Markov Chain Monte Carlo approach. *J. Climate*, **19**, 564-578.

Chu, P.-S., and H. Chen, 2005: Interannual and interdecadal rainfall variations in the Hawaiian Islands. *J. Climate*, **18**, 4796-4813.

Dolling, K., **P.-S. Chu**, and F. Fujioka, 2005: A climatological study of the Keetch/Byram drought index and fire activity in the Hawaiian Islands. *Agricultural and Forest Meteorology*, **133**, 17-27.

Chu, P.-S., 2004: ENSO and tropical cyclone activity. *Hurricanes and Typhoons: Past, Present, and Potential*. R.J. Murnane and K.-B. Liu, Eds., Columbia University Press, 297-332.

Chu, P.-S., and X. Zhao, 2004: Bayesian change-point analysis of tropical cyclone activity: The central North Pacific case. *Journal of Climate*, **17**, 4893-4901.

Zveryaev, I.I., and **P.-S. Chu**, 2003: Recent climate changes in precipitable water in the global tropics as revealed in NCEP/NCAR reanalysis. *Journal of Geophysical Research (Atmospheres)*, **108**, D10, 4311-4320.

Chu, P.-S., 2002: Large-scale circulation features associated with decadal variations of tropical cyclone activity over the Central North Pacific. *J. Climate*, **15**, 2678-2689.

Clark, J.D., and **P.-S. Chu**, 2002: Interannual variation of tropical cyclone activity in the central North Pacific. *J. Meteor. Soc. Japan*, **80**, 403-418.

Chu, P.-S., W. Yan, and F. Fujioka, 2002: Fire-climate relationships and long-lead wildfire prediction for Hawaii. *Int. J. Wildland Fire*, **11**, 25-31.

Chu, P.-S., and J.D. Clark, 1999: Decadal variations of tropical cyclone activity over the central North Pacific. *Bull. Amer. Meteor. Soc.*, **80**, 1875-1881.

Lee, H.-K., **P.-S. Chu**, C.-H. Sui and K.-M. Lau, 1998: On the annual cycle of latent heat fluxes over the equatorial Pacific using TAO buoy observations. *J. Meteor. Soc. Japan*, **76**, 909-923.

Chu, P.-S., 1998: Short-term climate prediction of Mei-Yu rainfall for Taiwan using CCA. *Int. J. Climatol.*, **18**, 215-224.

Chu, P.-S. and J.X. Wang, 1998: Modeling return periods of tropical cyclone intensities in the vicinity of Hawaii. *J. Appl. Meteor.*, **37**, 951-960.

Chu, P.-S. and J.-B. Wang, 1997: Recent climate change in the tropical western Pacific and Indian ocean regions as detected by outgoing longwave radiation records. *J. Climate*, **10**, 636-646.

Yu, Z.-P., **P.-S. Chu** and T.A. Schroeder, 1997: Predictive skills of seasonal to annual rainfall variations in the U.S. affiliated Pacific islands: Canonical correlation and multivariate principal component regression approaches. *J. Climate*, **10**, 2586-2599.

Chu, P.-S. and J. X. Wang, 1997: Tropical cyclone occurrences in the vicinity of Hawaii: Are the differences between El Niño and non-El Niño years significant? *J. Climate*, **10**, 2683-2689.

Chu, P.-S., 1995: Hawaii rainfall anomalies and El Niño. *J. Climate*, **8**, 1697-1703.

- Chu, P.-S.** and S. Hastenrath, 1995: Reply to comments on "Detecting climate change concurrent with deforestation in the Amazon basin: Which way has it gone?" *Bull. Amer. Meteor. Soc.*, **76**, 559-560.
- Chu, P.-S.**, 1995: Book review for "Monsoons over China" by Ding Yihui. *Bull. Amer. Meteor. Soc.*, **76**, 254-255.
- Chu, P.-S.**, R.W. Katz, and P. Ding, 1995: Modeling and forecasting seasonal precipitation in Florida: A vector time-domain approach. *Int. J. Climatol.*, **15**, 53-64.
- Chu, P.-S.**, Z.-P. Yu, and S. Hastenrath, 1994: Detecting climate change concurrent with deforestation in the Amazon basin: Which way has it gone? *Bull. Amer. Meteor. Soc.*, **75**, 579-583.
- Chu, P.-S.** and Y. He, 1994: Long-range prediction of Hawaiian winter rainfall using canonical correlation analysis. *Int. J. Climatol.*, **14**, 659-669.
- Chu, P.-S.**, A.J. Nash, and F. Porter, 1993: Diagnostic studies of two contrasting rainfall episodes in Hawaii: Dry 1981 and Wet 1982. *J. Climate*, **6**, 1457-1462.
- Chu, P.-S.**, 1993: Some applications of time series models to climate study (Southern Oscillation): Modeling, forecasting and predictability. *Stochastic Hydrology and Its Use in Water Resources Systems Simulation and Optimization*. J.B. Marco, R. Harboe, and J.D. Salas, Eds., Kluwer Academic Publishers, 223-227.
- Chu, P.-S.**, J. Frederick, and A.J. Nash, 1991: Exploratory analysis of surface winds in the equatorial western Pacific and El Nino. *J. Climate*, **4**, 1087-1102.
- Chu, P.-S.**, 1991: Brazil's climate anomalies and ENSO. *Teleconnections linking worldwide climate anomalies: Scientific basis and societal impact*. M.H. Glantz, R.W. Katz, and N. Nicholls, Eds., Cambridge University Press, 43-71.
- Chu, P.-S.**, and J. Frederick, 1990: Westerly wind bursts and surface heat fluxes in the equatorial western Pacific in May 1982. *J. Meteor. Soc. Japan*, **68**, 523-537.
- Chen, W., and **P.-S. Chu**, 1990: On the couplings between Chebyshev coefficients as derived from the monthly mean geopotential fields at 500 hPa over East Asia and the Southern Oscillation. *Adv. Atmos. Sci.*, **7**, 347-353.
- Chu, P.-S.**, 1989: Hawaiian drought and the Southern Oscillation. *Int. J. Climatol.*, **9**, 619-631.
- Chu, P.-S.** and R.W. Katz, 1989: Spectral estimation from time series models with relevance to the Southern Oscillation. *J. Climate*, **2**, 86-90.

Chu, P.-S., 1988: Extratropical forcing and the burst of equatorial westerlies in the western Pacific: A synoptic study. *J. Meteor. Soc. Japan*, **66**, 549-564.

Chu, P.-S. and R.W. Katz, 1987: Measures of predictability with application to the Southern Oscillation. *Mon. Wea. Rev.*, **115**, 1542-1549.

Chu, P.-S., 1985: A contribution to upper-air climatology of tropical South America. *J. Climatol.*, **5**, 403-416.

Chu, P.-S. and R.W. Katz, 1985: Modeling and forecasting the Southern Oscillation: A time-domain approach. *Mon. Wea. Rev.*, **113**, 1876-1888.

Chu, P.-S., 1984: Time and space variability of rainfall and surface circulation in the Northeast Brazil-tropical Atlantic sector. *J. Meteor. Soc. Japan*, **62**, 363-370.

Hastenrath, S., M.-C. Wu and **P.-S. Chu**, 1984: Towards the monitoring and prediction of Northeast Brazil droughts. *Quart. J. Roy. Meteor. Soc.*, **110**, 411-425.

Chu, P.-S. and S.-U. Park, 1984: Regional circulation characteristics associated with a cold surge event over East Asia during Winter MONEX. *Mon. Wea. Rev.*, **112**, 955-965.

Chu, P.-S. and D. Sikdar, 1983: Characteristics of sea-level pressure and surface temperature variations during Winter MONEX: December 1978. *J. Meteor. Soc. Japan*, **61**, 717-726.

Chu, P.-S., 1983: Diagnostic studies of rainfall anomalies in Northeast Brazil. *Mon. Wea. Rev.*, **111**, 1655-1664.

V.E. Kousky and **P.-S. Chu**, 1978: Fluctuations in annual rainfall for northeast Brazil. *J. Meteor. Soc. Japan*, **56**, 457-465.

B. PI or co-PI of Research Awards since 2011

Funding Agency: State of Hawaii Emergency Management Administration, Amount of Award: \$402,022, Period Covered by Award: 6/2020-5/2023, PI

Funding Agency: State of Hawaii Emergency Management Administration, Amount of Award: \$300,999, Period Covered by Award: expected 11/2020-10/2022, PI

Funding Agency: SOEST to support Hawaii State Climate Office, Amount of Award: ongoing program \$35,000/yr since 2002, PI

Funding Agency: Kauai Department of Water, Amount of Award: \$184,735, Period Covered by Award: 12/2016-7/2019, PI

Funding Agency: Honolulu Board of Water Supply, Amount of Award: \$225,000, Period Covered by Award: 1/2013-1/2017, PI

Funding Agency: Kauai Department of Water, Amount of Award: \$155,000, Period Covered by Award: 11/2011-11/2013, PI

Funding Agency: Department of Interior, Amount of Award: \$200,000, Period of Award: 5/2016-4/30/2018, co-PI

Funding Agency: American Association of State Climatologists, Amount of Award: \$9,250, Period Covered by Award: 07/2010 -05/2012, PI

Funding Agency: NOAA/NWS, Amount of Award: \$374,997, Period Covered by Award: 8/2008 -7/2012, co-PI

Funding Agency: NOAA via UH Sea Grant, Amount of Award: \$9998, Period Covered by Award: 6/2010 - 8/2011, PI

Funding Agency: NOAA, Amount of Award: \$34,103; Period Covered by Award: 8/2009-7/2011, Co-PI

Funding Agency: US Army Corps of Engineering, Amount of Award: \$266,641, Period Covered by Award: 11/2008-8/2011, Co-PI

TEACHING ACTIVITIES (2011 to 2020)

A. Courses Taught

ATMO 200 Atmospheric Processes and Phenomena
ATMO 302 Introduction to Atmospheric Physics
ATMO 303 Introduction to Atmospheric Dynamics
ATMO 610 Tropical Climate & Weather
ATMO 616 Monsoon Meteorology
ATMO 631 Statistical Meteorology
ATMO 632 Advanced Statistical Methods in Geoscience
ATMO 699 Directed Research
ATMO 700 Thesis Research
ATMO 752 Special Topics in Meteorology (Climate Variability and Tropical Cyclones)
ATMO 765 Seminar

B. Course Developed

ATMO 752 Special Topics in Meteorology (Climate Variability and Tropical Cyclones). This is a new course developed in 2018.

C. Students Mentored since 2000

As major advisor:

Boyi Lu (Ph.D.candidate), Haley Okun (MS candidate), Julie Henry (MS candidate), Xiaoyu Bai (MS in 2018), Hanpei Zhang (MS in 2017), Chris Holloway (unfinished MS candidate 2015-17), Duncan Gifford (MS in 2017), Chris Wrenn (MS in 2016), Kristine Tofte (MS in 2015), Chris O'Conner (MS in 2014), Andre Marquez (Visiting Ph. D. student from Brazil, 2015-16), Jessica Garza (MS in 2012), Mathew Reeve (visiting Ph.D. student from Norway, 2010 and 2011), Chase Norton (MS in 2011), Ying Chen (MS in 2010), Cynthia Dettmer-Shea (MS in 2008), Peng Wu (MS in 2006), Huaiqun Chen (MS in 2004), Marie Rakotondrafara (MS in 2001), Weiping Yan (MS in 2000)

As committee member:

Leishan Jiang (Current Ph.D. candidate), Yixin Zhang (MS in 2020), Hui Shi (Ph.D. in 2019), Tom Robinson (Ph.D. in 2018), Alejandro Ludert (Ph.D. in 2017), Alyssa Sockol (MS in 2015), Klaus Dolling (Ph.D. in 2010), M. Safeeq (Ph.D. from the Natural Resources and Environmental Management in 2010), Hyeong-Seog Kim (Ph.D. in 2010 from Seoul National University, Korea), Nathan Smith (MS in 2009), Jason Patla (Ph.D. in 2008), Hiep Nguyen (Ph.D. in 2010, MS in 2006), Hae-Kyung Lee Drbohlav (Ph.D. in 2002)

SERVICES

Significant Service

- served as the Hawaii State Hazard Mitigation Forum member for the State of Hawaii Department of Defense since 2018. Participated in the regular meetings and held voting power for the grant proposals submitted to HI-EMA.

- served as **Hawaii State Climatologist** from 2002 to the present. The main function of the Hawaii State Climate Office (HSCO) is to provide climate data and information to users on a timely basis and serve as a clearinghouse for climate records in Hawaii. The HSCO has been funded by the SOEST over the last 18 years. The State Climatologist is the primary focal point for state and local needs. The HSCO is a member of the American Association of State Climatologists (AASC) and a partner of the NOAA's National Center for Environmental Information in Asheville, North Carolina. To maintain the status of the State Office, we are required to submit the annual report and membership fee to the American Association of State Climatologists. I have also

successfully obtained funding from the AASC to supplement the operation of HSCO. Constantly recruiting, training, and supervising graduate and undergraduate student assistants to become familiar with daily operation of HSCO are another major part of the task.

- served as the Chair of Department Personnel Committee since 2018 (except during Fall 2019).
- served the Department Curriculum Committee since 2019.
- served on UH TPRC in 2005, 2011 and 2018.
- involved in the Pacific Islands Regional Climate Assessment (PIRCA) report through the NOAA Pacific RISA program at the East-West Center and this became a regional contribution to the annual National Climate Assessment
- reviewed proposals to NOAA, NASA, and NSF and more than 250 manuscripts submitted to Journal of Climate, Geophysical Research Letters, J. Geophysical Research, International Journal of Climatology, Journal of Applied Meteorology and Climatology, Journal of the Meteorological Society of Japan, Annales Geophysica, Physical Geography, Risk Analysis, book chapters for the Academic Press, and a book proposal to Springer.
- invited to review a research proposal to the Ministry of Science and Technology - Science Vanguard Research Program (the highest level) in 2013 and 2020, Taiwan
- invited to serve as editor of the Asia-Pacific Journal of Atmospheric Sciences in 2020
- presented Department Seminars in 2018 (Trends in Extreme precipitation and Return Levels during the Typhoon Season in Taiwan, Feb 28) and 2019 (Improving ENSO forecasts using Bayesian Model Averaging, Oct 2)
- chaired the Department's Space Committee from 2007-2012 and developed a proposal for SOEST Renovation Fund to upgrade the facilities and equipment for the Department of Meteorology with a requested amount of **\$45,986** which was awarded in 2012.
- constantly interviewed by media (e.g, Star-Advertiser, Hawaii Public Radio, Hawaii Business magazine) for hurricane activity, trade-wind changes, and rainfall variations.