

PETER ROBERT WAYLEN

Professor Emeritus

Department of Geography University of Florida

Gainesville, Florida U.S.A., 32611-7315

prwaylen@ufl.edu

ACADEMIC CREDENTIALS:

Ph.D., McMaster University, 1982, Geography.

Title: Analysis of High Flows in the Fraser River Catchment, British Columbia.

Supervisor: M-k. Woo

Minor: Civil Engineering (Operational Hydrology and Open Channel Hydraulics)

M.A., McMaster University, 1976, Geography.

Title: Suspended Sediment in an High Arctic Basin.

Supervisor: S.B. McCann

B.Sc., London University (London School of Economics), 1975, Geography.

Title: The Ergodic Hypothesis with Particular Reference to Anti-dunes in a Small Flume Environment.

Supervisor: J.B. Thornes

PROFESSIONAL CREDENTIALS:

Professional Hydrologist, certified by the American Institute of Hydrology, 1998

HONORS: (teaching)

Nominated for UF Teacher/Researcher Award, 2006, 2007, 2011

Nominated for UF Alumni Associations Distinguished Alumni Professor Award, 2005

Grant from International Programs and Graduate Studies, University of Florida

for proposal to internationalize the content of Principles of Geographic Hydrology, 2003.

University of Florida, Teacher of the Year, 2002.

College of Liberal Arts and Sciences, University of Florida, Teacher of the Year, 2002

College of Liberal Arts and Sciences, University of Florida, recognition as "Faculty Honoree" by Anderson Scholar, Fall Convocation, University of Florida, 1997, 1998, 1999, 2000, 2007, 2008.

Judge, Distinguished Research Prize, Kuwait Foundation for the Advancement of Sciences, 1999. University of Florida, Mentor in University Scholars Program, 1999-2000, 2004-05, 2013-14.

Recipient Teaching Improvement Program Award, University of Florida, 1995.

Nominated for Undergraduate Teaching Award, College of Liberal Arts and Sciences, University of Florida, 1995, 1998, 2002, 2005, 2006, 2009, 2011

HONORS: (research)

Temporary Member of the Graduate Faculty, University of Alabama, 2015-17
Jean and Robin Gibson Term Professorship, College of Liberal Arts and Sciences, UF, 2013-14. Member, International Geographical Union Study Group on “Environmental Changes and Extreme Hydrological Events”, 1997.
Visiting Scholar, Department of Engineering Hydrology, University College, Galway, Ireland, 1992 Hartley Visiting Fellow, Department of Geography, University of Southampton, U.K., 1992.
U.S. representative to International Geographical Unions Working Group on Regional Hydrologic Effects of Global Warming, 1990.
Natural Environment Research Council Scholarship, Hull University, U.K., 1976. Royal Geographical Society University Dissertation Prize, U.K., 1975.
George and Hilda Ormsby Prize, London School of Economics, 1975.

HONORS: (service)

Florida Society of Geographers’ Service Award, 2015
College of Liberal Arts and Sciences Professor of Excellence, 2020

EMPLOYMENT AT UNIVERSITY OF FLORIDA:

College of Liberal Arts and
Sciences Associate Dean
2014- 18

Department of Geography
Visiting Assistant Professor, 1985-87
Visiting Associate Professor, 1987-
January 1988 Associate Professor,
January 1988
Tenured, 1989
Professor, 1997
Professor Emeritus, 2021

Department of Agricultural and Biological Engineering, Institute of Food and Agricultural Science.
Visiting Professor, May-June, 1998. Visiting
Professor, June-July, 1999.

AFFILIATED POSITIONS:

Center for African Studies, Center for Latin American Studies, Emerging Pathogens Institute, Florida Climate Institute, Florida Water Institute, Inter-disciplinary Graduate Program in Ecology, School of Natural Resources and Environment and Inter-disciplinary Graduate Program in Hydrosociences, University of Florida

Member, Consortium of Florida Universities involved in ENSO research, University of Miami and Florida State University

PREVIOUS POSITIONS:

University of Southampton, U.K.
Department of Geography
Visiting Hartley Research Fellow, 1992.

University of Waterloo, Canada
Department of Geography
Visiting Associate Professor, 1991-1993.

University of Saskatchewan,
Canada. Department of Geography
Assistant Professor, tenure track, 1982-85

McMaster University,
Canada. Department of
Geography
Post-doctoral Research Fellow, Donner
Foundation, Technology Assessment of
Subarctic Ontario, 1982.

Post-doctoral Research Fellow, Department of Indian and Northern Affairs, Arctic
Land Use Research, Effects of Uranium Mining on a Permafrost Environment, 1981.

BOOKS:

S. Reynolds, R. Rohli, J. Johnson. P.Waylen and M. Francek, 2014. *Exploring Physical Geography*. McGraw-Hill, 790p. Current 4th edition
S. Reynolds and J. Johnson, 2015. *Exploring Earth Science*, McGraw-Hill, 590p.
(Contributing author)

MONOGRAPH:

E. Chen and P.R. Waylen, 1987. *Handbook of Minimum Temperatures: The Florida Winter*.
Meteorological Engineering Inc., Gainesville, Florida. 44p.

CHAPTERS IN BOOKS (COLLECTED PAPERS): * = graduate students

- M. Marsik*, Waylen, P. and M. Quesada*, 2015. Changing Discharge Contributions to the Río Grande de Tárcoles., in *Monitoring and Modelling Dynamic Environments (A Festschrift in memory of Professor John B. Thornes)* ed. Dykes, A., Mulligan, M. and J. Wainwright. Wiley. p.203-224
- P. R. Waylen, 2010. El Niño-Southern Oscillation (ENSO). Invited contribution to *SAGE Encyclopedia of Geography*. Ed. B. Warf, SAGE Publications, Thousand Oaks, CA.
- G. Poveda, O.J. Mesa and P.R. Waylen, 2003, 'Non-linear Forecasting of River Flows in Colombia Based Upon ENSO, and its Associated Economic Value for Hydropower Generation. In, *Climate and Water: Transboundary Challenges in the Americas*, H.F. Diaz and B. Morehouse, editors, Kluwer, Dordrecht, Netherlands. p. 351-372.
- P.R. Waylen and M.E. Quesada*, 2002. The Effect of Atlantic and Pacific Sea Surface Temperatures on the Mid-summer Drought of Costa Rica. in *Environmental Change and Water Sustainability*, J.M. García-Ruiz, J.A.A.A. Jones and J. Arnáez, editors. Instituto Pirenaico de Ecología, Consejo Superior de Investigaciones Científicas, Zaragoza, Spain, p. 197-209.
- P.R. Waylen, 1995. Global Hydrology in Relation to Palaeohydrological Change, in *Global Palaeohydrology*. K.J. Gregory and L. Starkel, editors. John Wiley, Chichester, U.K. p. 61-86.
- C.N. Caviedes and P.R. Waylen, 1991. Chapters for a Climatic History of South America. in *Beiträge Zur Regionalen und Angewandten Klimatologie*. W. Endlicher and H. Goßmann, editors. Freiburger Geographische Hefte 32, Institut für Physische Geographie, Frieburg, Germany. p. 149-180.
- P.R. Waylen and C.N. Caviedes, 1987. El Niño and Annual Floods in Coastal Peru, in *Catastrophic Flooding*. L. Mayer and D. Nash editors. Allen and Unwin, Boston. p. 57-78.
- M-k. Woo and P.R. Waylen, 1985. Probability Studies of Floods in *Research, Resources and the Environment in Third World Development*. Nelson, J.G. and K.D. Knight eds. University of Waterloo, Waterloo, Ontario. p. 123-133.

PAPERS IN REFEREED JOURNALS: * = graduate students.

- Huguenin, C.N.*, Serafin, K.A. and Waylen, P.R., 2023. A spatio-temporal analysis of the role of climatic drivers influencing extreme precipitation events in a Costa Rican basin. *Weather and Climate Extremes*, 42, p.100602
- Capps Herron, H.*, Waylen, P. and Owusu, K.*, 2023. Spatial and temporal variability in the characteristics of extreme daily rainfalls in Ghana. *Natural Hazards*, 117(1), pp.655-680.
- Southworth, J., Ryan, S.J., Herrero, H.V.*, Khatami, R., Bunting*, E.L., Hassan*, M., Muir, C.S.* and Waylen, P., 2023. Latitudes and land use: Global biome shifts in vegetation persistence across three decades. *Frontiers in Remote Sensing*, 4, p.1063188.
- Haro-Carrión, X.*, Waylen, P. and Southworth, J., 2021. Spatiotemporal changes in vegetation greenness across continental Ecuador: a Pacific-Andean-Amazonian gradient, 1982–2010. *Journal of Land Use Science*, 16(1), pp.18-33.
- Herrero, H.*, Waylen, P., Southworth, J., Khatami, R., Yang, D.* and Child, B., 2020. A healthy

- park needs healthy vegetation: The story of Gorongosa National Park in the 21st Century. *Remote Sensing*, 12(3), p.476.
- Quesada, M.E.* and Waylen, P., 2020. Variability of Daily Precipitation on the Caribbean Coast of Costa Rica. *Revista de Climatología*, 20.
- Waylen, P., Annear, C. and Bunting, E*., 2019. Interannual hydroclimatic variability of the Lake Mweru basin, Zambia. *Water*, 11(9), p.1801.
- Annear, C.M. and Waylen, P.R., 2019. Socializing the rain: human adaptation to ecological variability in a fishery, Mweru-Luapula, Zambia. *Journal of Political Ecology*, 26(1), pp.224-242.
- Southworth, J., Bunting, E.* , Zhu, L., Ryan, S.J., Herrero*, H.V., Waylen, P., Muñoz-Carpena, R., Campo-Bescós, M.A. and Kaplan, D., 2018. Using a coupled dynamic factor–random forest analysis (DFRFA) to reveal drivers of spatiotemporal heterogeneity in the semi-arid regions of southern Africa. *Plos one*, 13(12), p.e0208400.
- Bunting, E.L*., Southworth, J., Herrero*, H., Ryan, S.J. and Waylen, P., 2018. Understanding long-term savanna vegetation persistence across three drainage basins in Southern Africa. *Remote Sensing*, 10(7), p.1013.
- Engström, J.* and Waylen, P., 2018. Drivers of long-term precipitation and runoff variability in the southeastern USA. *Theoretical and Applied Climatology*, 131, pp.1133-1146.
- Fullman, T.J.* , Kiker, G.A., Gaylard, A., Southworth, J., Waylen, P. and Kerley, G.I., 2017. Elephants respond to resource trade-offs in an a seasonal system through daily and annual variability in resource selection. *Koedoe: African Protected Area Conservation and Science*, 59(1), pp.1-21.
- Engström, J.* and Waylen, P., 2017. The changing hydroclimatology of Southeastern US. *Journal of Hydrology*, 548, pp.16-23.
- Hernández Ayala, J.J*., Keellings, D*., Waylen, P.R. and Matyas, C.J., 2017. Extreme floods and their relationship with tropical cyclones in Puerto Rico. *Hydrological Sciences Journal*, 62(13), pp.2103-2119.
- J. Southworth, Zhu, L.* , Bunting, E.* , Ryan, S.J., Herrero, H.* , Waylen, P.R. and M. Hill, M., 2015. Changes in Vegetation Persistence across Global Savanna Landscapes, 1982-2010. *Journal of Land Use Science*. <http://dx.doi.org/10.1080/1747423X.2015.1071439>
- A.E. Gaughan,* , Staub, C.G.* , Hoell, A., Weaver, A. and P. R. Waylen, 2015. Inter- and intra-annual precipitation variability and associated relationships to ENSO and the IOD in southern Africa, *International Journal of Climatology* DOI: 10.1002/joc.4448
- D. Keellings* , Engström, J.* and P.R. Waylen. 2015. The Sunshine State: Investigating external drivers of sky conditions. *Physical Geography*
- C.G. Staub* , Stevens, F.R.* and P.R. Waylen, 2014. The geography of rainfall in Mauritius: Modelling the relationship between annual and monthly rainfall and landscape characteristics on a small volcanic island. *Applied Geography*, 54, 222-234.
- D. Keellings* and P. Waylen, 2014. Investigating drivers of bivariate heat waves in Florida. *Climate Dynamics*. DOI 10.1007/s00382-014-2345-8
- C. Gibbes* , Southworth, J., Waylen, P. and B. Child, 2014. Climate variability as a dominant driver of post-disturbance savanna degradation or recovery. *Applied Geography* 53, 389-401.
- P.R. Waylen and K. Owusu* , 2014. Changes in expectations and extremes in the rainfall climatology of Accra, Ghana, 1895-2005. *Applied Geography*, 52, 99-109.

- Y. Wang*, Waylen, P.R. and L. Mao, 2014. Modeling spatio-temporal properties of influenza-like illness peak events with crossing theory. *ISPRS International Journal of Geo-Information*, 3, p. 764- 780.
- P.R. Waylen, Southworth, J., Gibbes, C.* and H-P. Tsai*, 2014. Time series analysis of land cover change: developing statistical tools to determine significance of land cover change in persistence analysis. *Remote Sensing*, 6, p. 4473-4497.
- H-P. Tsai*, Southworth, J. and P.R. Waylen, 2014. Spatial persistence and temporal patterns in vegetation cover across Florida, 1982-2006. *Physical Geography*, 35, p.151-180.
- C. Monzón-Alvarado*, Waylen, P.R. and E. Keys, 2014. Fire management and climate variability: Challenges in designing environmental regulations. *Land Use Policy* 39, p.12–21.
- D. Keellings* and P.R. Waylen, 2014. Characterizing changes in climatological heat wave risk in Florida using extreme value analysis. *Applied Geography*, 46, p.90-97.
- M.A. Campo-Bescós, Muñoz-Carpena, R., Southworth, J., Zhu*, L., Waylen, P.R. and E. Bunting*. 2013. Combined spatial and temporal effects of environmental controls on long-term monthly NDVI in the southern Africa savanna. *Remote Sensing*, 5, p.6513-6538
- J. Southworth, Rigg, L., Gibbes, C.*, Waylen, P.R., Zhu*, L., McCarragher, S. and L. Cassidy*, 2013. Integrating dendrochronology, climate and satellite remote sensing to better understand savanna landscape dynamics in the Okavango Delta, Botswana, *Land*, 2, p.637-655.
- M.A. Campo-Bescos, Muñoz-Carpena, R., Kaplan, D., Southwoth, J., Zhu, L.* and P.R. Waylen, 2013. Beyond Precipitation: Physiographic Gradients: Dictate the Relative Importance of Environmental Drivers on Savanna Vegetation. *PLoSOne*, 8, e72348, 14pp.
- M.E. Quesada* and P.R. Waylen, 2013 Análisis climático de la precipitación anual e interanual en la Cuenca media del río Grande de San Ramón, Costa Rica. *Investigaciones Geograficas (Chile)*, 45, p.3-18
- X. Cui, C., Gibbes*, J. Southworth and P.R. Waylen, 2013. Using Remote Sensing to Quantify Change and Ecological Resilience in a Semi-Arid System. *Land*, 2, p.108-130.
- K. Owusu* and P.R. Waylen, 2013. The Changing Rainy Season Climatology of Mid-Ghana. *Theoretical and Applied Climatology*, 112, p.419-430.
- K. Owusu* and P.R. Waylen, 2013. Identification of Historic Shifts in Daily Rainfall Regime, Wenchi, Ghana. *Climatic Change*, 117, p.133-147
- M.E. Quesada* and P.R. Waylen, 2012. Diferencias hidrológicas anuales y estacionales en regiones adyacentes: Estudio de las subcuencas de los ríos Virilla y Grande de San Ramón, Costa Rica.. *Cuadernos de Geografía (Colombia)*, 21, p.167-175
- A.M. Szyniszewska* and P.R. Waylen, 2012. Determining daily rainfall characteristics from monthly rainfall totals in central and northeastern Thailand. *Applied Geography*, 35, p.377-393.
- D. Keellings* and P.R. Waylen, 2012. The Stochastic Properties of High Daily Maximum Temperatures Applying Crossing Theory to Modeling High-temperature Event Variables, *Theoretical and Applied Climatology*, 108 (3-4), p.579-590.
- A.E. Gaughan* and P.R. Waylen, 2012. Spatial and temporal precipitation variability in the Okavango- Kwando-Zambezi catchment, southern Africa. *Journal of Arid*

Environments, 82, p.19-30.

- P.R. Waylen, Keellings, D.* and Y. Qiu. 2012, Climate and Health in Florida: Changes in risks of annual maximum temperatures in the latter half of the Twentieth Century. *Applied Geography* 33, p.73- 81.
- C. M. Cañas* and P.R. Waylen. 2011, Modeling Production of Migratory Catfish Larvae (Pimelodidae) on the basis of Regional Hydro-climatology features of the Madre de Dios Basin in Southeastern Peru. *Hydrological Processes*. 27 JUN 2011, DOI: 10.1002/hyp.8192
- C.N. Caviedes and P.R. Waylen. 2011, Easter Island: A Climatologically Constrained Island. *Rapa Nui Journal*. 25(1), p.7 – 22.
- A.L. Deane* and P.R. Waylen, 2009. ENSO related fluctuations of rainfall and their consequences for some rodent populations in Central Chile. *Tiempo y Espacio*, (Chile), (23), p.105-120
- K. Owusu* and P.R. Waylen, 2009, Climate Change and Variability in Mid-Ghana. *Weather*. 64(5), p.115- 120.
- M.E. Quesada* and P.R. Waylen, 2008, Interacción oceánica y su vínculo con las fluctuaciones bimensuales y decadales en la precipitación de San José, Costa Rica, *Inter Sedes* (Costa Rica) 16, p.23-34.
- K. Owusu*, P.R. Waylen and Y. Qiu, 2008, Changing Rainfall Inputs in the Volta Basin: Implications for Water Sharing in Ghana, *GeoJournal*, 71, p.201-210.
- D. Coley* and P.R. Waylen, 2006. Forecasting Dry Seasonal Streamflow on the Peace River at Arcadia, Florida. *Journal of American Water Resources Association*. 42(4), p.851-862.
- G. Poveda, P.R. Waylen and R. Pulwarty, 2006. Annual and Interannual Variability of the Present Climate in Northern South America and Southern Mesoamerica. *Paleogeography, Paleoclimatology, Paleoecology*, 234(1), p.3-27.
- M. Marsik* and P.R. Waylen, 2006. An Application of the Distributed Hydrologic Model CASC2D to a Tropical Montane Watershed. *Journal of Hydrology*, (330), p.481-495
- N. Hoyos*, P.R. Waylen and A. Jaramillo, 2005. Seasonal and Spatial Patterns of Erosivity in a Tropical Watershed of the Colombian Andes. *Journal of Hydrology*. 314,177-191.
- P.R. Waylen and M.J. Harrison*, 2005. The Coincidence of Daily Rainfall Events in Liberia, Costa Rica and Tropical Cyclones in the Caribbean Basin. *International Journal of Climatology*. 25, p.1665- 1674.
- M.E. Quesada* and P.R. Waylen, 2004. Ocurrencia de Caudales Maximos en Cuencas Hidrograficas Ubicadas en Vertientes Opuestas, Costa Rica. *Ingeniería Hidráulica en México*, XIX(3), p.129- 138.
- C. Meindl*, D. Alderman and P.R. Waylen, 2002. On the Importance of Environmental Claims-Making: The Role of James O. Wright in Promoting the Drainage of Florida's Everglades in the Early Twentieth Century. *Annals of the Association of American Geographers*, 92(4), p.682-701.
- P.R. Waylen and G. Poveda, 2002. El Niño-Southern Oscillation and Aspects of Western South American Hydro-climatology. *Hydrological Processes*, 16, p.1247-1260.
- P.R. Waylen and M.E. Quesada*, 2001. The Effect of Atlantic and Pacific Sea Surface Temperatures on the Mid-summer Drought of Costa Rica. *Cuadernos de Investigación Geográfica*, 27, 193-205.
- P.R. Waylen and M.E. Quesada*, 2001. `Anomalías en las Temperaturas Superficiales` en los

- Océanos Pacífico y Atlántico y su Relación con las Lluvias de Julio y Agosto en Costa Rica, *Avances en Recursos Hidráulicos*, 8, p.55-64.
- M.E. Quesada* and P.R. Waylen, 2000. Variabilidad en las Crecidas de los Ríos de Dos Cuencas Hidrográficas de Costa Rica. *Revista Informe Semestral*, 36, p.85-95. Instituto Geográfico Nacional, Ministerio de Obras Públicas y Transportes, San José, Costa Rica.
- P.R. Waylen, R. Compagnucci and M. Caffera, 2000. Inter-annual and Inter-decadal Variability in Stream Flow from the Argentine Andes. *Physical Geography*, 21, p.452-465.
- J.M. Harrison* and P.R. Waylen, 2000. A Note Concerning the Proper Choice for Markov Model Order for Daily Precipitation in the Humid Tropics: A case Study in Costa Rica. *International Journal of Climatology*, 20, p.1861-1872.
- P.R. Waylen and S. Laporte., 1999. `Flooding along the Pacific Slope of Costa Rica. *Hydrological Processes*, 13, p. 2623-2638.
- S.J. Mason, P.R. Waylen, G.M .Mimmack, B. Rajaratnam and J.M. Harrison*, 1999. `Changes in Extreme Rainfall Events in South Africa. *Climatic Change*, 41, p. 249-257.
- P.R. Waylen, C.N. Caviedes, G. Poveda, M.E. Quesada*, and O.J. Mesa., 1998. `Rainfall Distribution and Regime in Costa Rica and its Response to the El Niño-Southern Oscillation. *Yearbook of the Conference of Latin Americanist Geographers*, 24, p. 75-84
- R.K. George*, P.R. Waylen and S. Laporte., 1998. `Interannual Variability of Annual Streamflow and the Southern Oscillation in Costa Rica. *Hydrological Sciences Journal*, 43, p. 409-24.
- P.R. Waylen and M.R. Zorn*, 1998. `Prediction of Mean Annual Flows in North and Central Florida. *Journal of the American Water Resources Association*, 34, 149-157.
- R.M. Graves* and P.R. Waylen, 1997 `Regional Flood Frequency Analysis in Southern Ontario using L- Moments. *Canadian Geographer*, 41, 178-198
- M.R. Zorn* and P.R. Waylen, 1997 `Response of Monthly Stream Flow to El Niño Southern Oscillation in North Central Florida. *Professional Geographer*, 49, 51-62.
- P.R. Waylen and S. Henworth, 1996. `A Note on the Timing of the ENSO-Related Variability of Precipitation in Zimbabwe. *International Journal of Climatology*, 16, 1137-1148.
- P. R. Waylen, C.N. Caviedes and M.E. Quesada*, 1996. `Interannual Variability of Monthly Precipitation in Costa Rica. *Journal of Climate*, 9, p. 2606-2613.
- P.R. Waylen, M.E. Quesada* and C.N. Caviedes., 1996. `Temporal and Spatial Variability of Annual Precipitation in Costa Rica and the Southern Oscillation. *International Journal of Climatology*., 16, p.173-193.
- P.R. Waylen, M.E. Quesada* and C.N. Caviedes, 1994. `The Effect of El Niño on Precipitation in San José, Costa Rica. *International Journal of Climatology*., 14, p.559-569.
- P.R. Waylen, C.N. Caviedes and C. Juricic., 1993. `El Niño-Southern Oscillation and the Surface Hydrology of Chile: A Window on the Future? *Canadian Water Resources Journal*, 18, p. 425- 441.
- D.W. LeBoutillier* and P.R. Waylen, 1993. Regional Variations in Flow Duration Curves for Rivers in British Columbia, Canada. *Physical Geography*, 14, p. 358-379.
- D.W. LeBoutillier* and P.R. Waylen, 1993. `A Stochastic Model of Flow Duration Curves. *Water Resources Research*, 29, p. 3535-3541.
- C.N. Caviedes and P.R. Waylen, 1993. `Anomalous Westerly Winds during El Niño Events: The Discovery and Colonization of Easter Island. *Applied Geography*. 13, p. 123-134.
- P.R. Waylen, 1991. `Modeling the Effects of Tropical Cyclones on Flooding in the Santa Fe River

- Basin, Florida. *Geojournal*. 23, p. 361-373.
- P.R. Waylen, and A.M. Snook*, 1990. 'Patterns of Regional Success in the Football League, 1921 - 1987. *Area*. 22, p. 353-367.
- P.R. Waylen, and C.N. Caviedes, 1990. 'Annual and Seasonal Fluctuations of Precipitation and Streamflow in the Aconcagua River Basin, Chile. *Journal of Hydrology*. 120, p. 79-102.
- T.D. Tapley, Jr* , and P.R. Waylen, 1990. 'Spatial Variability in the Effects of ENSO Events and Annual Precipitation in Western Peru. *Journal of Hydrosciences*. 35, p. 429-446.
- P.R. Waylen and D.W. LeBoutillier*, 1989. 'Statistical Properties of Freeze Date Variables and the Length of the Growing Season. *Journal of Climate*. 2, p. 1314-1328.
- R. Ballerini and P.R. Waylen, 1989. 'Extreme Precipitation Events Generated by Periodic Processes. *Water Resources Research*. 25, p. 1403-1412.
- T.D. Tapley, Jr* and P.R. Waylen, 1989. 'A Mixture Model of Annual Precipitation in Western Peru. *Professional Geographer*. 41, p. 62-71.
- M-k. Woo and P.R. Waylen, 1988. 'Interbasin Water Transfers and the Regimes of Three Northwestern Ontario Rivers. *Canadian Geographer*. 32, p.319-327.
- P.R. Waylen, 1988. 'Statistical Analysis of Freezing Temperatures in Central and Southern Florida. *International Journal of Climatology*. 8, p. 607-628.
- P.R. Waylen and D.W. LeBoutillier*, 1988. 'Analysis and Prediction of Abnormally Cold Spells in Southern Saskatchewan. *Canadian Geographer*. 32, p. 223-236.
- D.W. LeBoutillier* and P.R. Waylen, 1988. 'Stochastic Analysis of Extreme Cold Spells, *Journal of Climate and Applied Meteorology*. 27, p. 67-76.
- P.R. Waylen and M-k. Woo, 1987. 'Probability of Low Flows Generated by Mixed Processes, *Hydrological Sciences Journal*. 32, p. 371-383.
- M.H.F. Hey* and P.R. Waylen, 1987. 'Probability of Daily Hail and Thunder Occurrences, *Journal of Climate and Applied Meteorology*. 26, p. 1014-1020.
- P.R. Waylen and C.N. Caviedes, 1986. 'El Niño and Annual Floods on the North Peruvian Littoral, *Journal of Hydrology*. 89, p. 141-156.
- K. Irvine and P.R. Waylen, 1986. 'Partial Series Analysis of Floods on Canadian Rivers, *Canadian Water Resources Journal*. 11, p. 83-91.
- M-k. Woo and P.R. Waylen, 1986. 'Probability Studies of Floods, *Applied Geography*. 6, p. 185-195.
- P.R. Waylen, 1985. 'Stochastic Analysis of Flooding in a Zone of Mixed Generating Processes, *Transactions of the Institute of British Geographers*. 10, p. 95-108.
- P.R. Waylen, 1985. 'A Method of Predicting Daily Peak Flows in the High Flow Season, *Journal of Hydrology*. 77, p. 89-105.
- P.R. Waylen, 1985. 'Statistical Analysis of Snowmelt Floods, contribution to 'Review of Snow and Ice Hydrology, *Canadian Geographer*. 29, p. 173-183.
- M-k. Woo and P.R. Waylen, 1985. 'Macro-scale Estimation of Evaporation from Regional Water Balance, *Hydrological Sciences Journal*. 30, p. 383-394.
- P.R. Waylen and M-k. Woo, 1984. 'Regionalization and Prediction of Flooding in the Fraser River Catchment, British Columbia. *American Water Resources Bulletin*. 20, p. 941-949.
- M-k. Woo and P.R. Waylen, 1984. 'Areal Prediction of Annual Floods Generated by Two Distinct Processes. *Hydrological Sciences Journal*. 29, p. 75-87.
- P.R. Waylen and M-k. Woo, 1983. 'Stochastic Analysis of High Flows Generated by Mixed

Processes.

Canadian Journal of Civil Engineering. 10, p. 639-648.

P.R. Waylen and M-k. Woo, 1983. `Stochastic Analysis of High Flows in Some Central British Columbia Rivers. *Canadian Journal of Civil Engineering*. 10, p. 205-213.

P.R. Waylen and M-k. Woo, 1983. `Annual Floods in Southwestern British Columbia. *Journal of Hydrology*. 62, p. 95-105.

P.R. Waylen, 1982. `Some Characteristics and Consequences of Snowmelt during Rainfall in Western Oregon - A Comment. *Journal of Hydrology*. 58, p. 185-188.

P.R. Waylen and M-k. Woo, 1982. `Prediction of Annual Floods Generated by Mixed Processes. *Water Resources Research*. 18, p. 1283-1287.

P.R. Waylen and M-k. Woo, 1982. `Prediction of Mean Annual Flows in the Fraser River Catchment, British Columbia. *American Water Resources Bulletin*. 18, p. 707-711.

P.R. Waylen and M-k. Woo, 1981. `Regionalization and Prediction of Annual Floods in the Fraser River Catchment, British Columbia. *American Water Resources Bulletin*. 17, p. 655-661.

P.R. Waylen, 1976. `The Ergodic Hypothesis with Particular Reference to Anti-dunes in a Small Flume Environment. *Geographic Journal*. 142, p. 562-563.

PAPERS IN NON-REFEREED JOURNALS:

C. N. Caviedes and P.R. Waylen., 1998. Respuestas del clima de América del Sur a las fases de ENSO. *Bulletin de L'Institut Francais d'Etudes Andines*, 27,p. 613-626.

C.N. Caviedes and P.R. Waylen, 1987. `El Niño y Crecidas Anuales en Los Ríos del Norte del Perú. *Bulletin de L'Institut Francais d'Etudes Andines*. 16, p. 1-19.

P.R. Waylen and C.N. Caviedes, 1986. `Flood Frequency Analysis of the Piura River, Peru. *Tropical Ocean-Atmosphere Newsletter*. 35, p. 1-3.

PAPERS IN PUBLISHED CONFERENCE PROCEEDINGS:

J.M. Harrison*, P.R. Waylen and S. Laporte M., 1999. Daily Precipitation Characteristics and ENSO: A Case Study of Costa Rica. *American Meteorological Society*, Annual Meeting, Dallas, Texas.
<http://www.confex2.com/ams/99annual/abstracts/1457.htm>

C. N. Caviedes and P.R. Waylen., 1998. Respuestas del clima de América del Sur a las fases de ENSO. Variations Climatiques et Ressources en Eau an Amérique du Sud: Importance et Conséquences des Evénements El Niño. *Bulletin de L'Institut Francais d'Etudes Andines*, 27, 3,p. 613-627.

S. Henworth and P.R. Waylen, 1998. `Streamflow Drought Regime of the Upper Save Valley, Zimbabwe.” *International Association of Hydrological Sciences*, Abidjan, Ivory Coast.

P.R. Waylen and C.N. Caviedes, 1996. `Piecing Together the Effects of El Niño on Precipitation Variability in Central America. *Proceedings of Workshop on Monitoring for Climate Change Detection in the Americas*. Viña del Mar, Chile.

P.R. Waylen, 1992. `Deriving the Characteristics of Cold Spells from Crossing Theory. *Proceedings of the 5th International Meeting on Statistical Climatology*. Toronto,

- Canada. Toronto, Canada. p. 301- 305.
- M-k. Woo and P.R. Waylen, 1988. 'Effects of Interbasin Transfer on Streamflow Regimes, Northwestern Ontario, Canada. Proceedings of the 7th Northern Research Basin Symposium/Workshop. Ilulissat/Jacobshaven, Greenland. p. 331-341.
- M-k. Woo and P.R. Waylen, 1988. 'Effect of Flow Diversion on the Runoff Regimes of Northern Ontario Rivers. Proceedings of the Symposium on Interbasin Transfer of Water: Impacts and Research Needs for Canada. W. Nicholaichuk and F. Quinn editors. National Hydrology Research Centre, Canadian Water Resources Association / Environment Canada, Saskatoon, Saskatchewan. p. 261- 278.
- P.R. Waylen, E. Chen and J. Gerber, 1987. 'A Method of Estimating Frost Probabilities in Florida. Proceedings of the 99th Annual Meeting of the Florida State Horticultural Society. Miami Beach, FL.

TECHNICAL REPORTS:

- P.R. Waylen, 1998. 'Tentative Forecasts of Annual Flood Size on the Piura River, Peru, based on Medium- term Ocean-Atmosphere Forecasts. Report submitted to NOAA, Office of Global Programs, Applications Division, on behave of the Water Resources Working Group at the Lima Conference 1997, *Es éste el niño del siglo?*, 39pp.
- S.J. Mason, G.M. Mimmack, P.R. Waylen and B. Rajaratnam, 1995. 'Changes in Flood Frequency in South Africa. in *Climatic Change Phenomena.* Ed. S.J. Mason and M.A. Joubert. ESKOM Technology Research and Investigation Research Report TRR/S95/193. P. 48-58, Johannesburg, South Africa.
- C.N. Caviedes and P.R. Waylen, 1991. 'Chapters for the Climatic History of South America. University of Florida, Department of Geography, Occasional Paper No. 8.
- P.R. Waylen, 1991. 'Modeling Flooding in the Santa Fe River Basin, Florida. University of Florida, Department of Geography, Occasional Paper No.7.
- T.M. Fik, and P.R. Waylen, 1990. 'Spatial Order and Negentropy: A Filtering Approach to Information Statistics. University of Florida, Department of Geography, Occasional Paper No.6
- P.R. Waylen and D.W. LeBoutillier, 1989. 'A statistical Test of Summed Rank Observations. University of Florida, Department of Geography, Occasional Paper No.1.
- P.R. Waylen, 1985. 'Probability Distribution of Low Flows in the Arctic Watershed of Northern Ontario. Technology Assessment in Subarctic Ontario. Report No. 22. McMaster University, Hamilton, Ontario.

- P.R. Waylen, M-k. Woo and A. Patterson, 1984. 'Modification of Streamflow Regime in Northern Ontario. Technology Assessment in Subarctic Ontario. Report No. 14. McMaster University, Hamilton, Ontario.
- P.R. Waylen and M-k. Woo, 1983. 'Prediction of Annual Floods Generated by Mixed Processes. Water Resources Journal. United Nations Economic and Social Commission for Asia and the Pacific. June, p. 88-91.
- M-k. Woo and P.R. Waylen, 1983. 'Prediction of Annual Floods in Northern Ontario Basins. Technology Assessment in Subarctic Ontario. Report No. 2. McMaster University, Hamilton, Ontario.
- M-k. Woo, J.J. Drake and P.R. Waylen, 1982. 'A Study to Model the Effects of Uranium Mining on a Permafrost Environment. Department of Indian and Northern Affairs. Canadian Federal Government, Ottawa.

INVITED LECTURES:

- P.R. Waylen and C.M. Annear, 2015. Fish follows water- geographers follow everything! Fishy narratives and surprises from the fisheries and lake levels of Lake Mweru, Zambia. Department of Geography, University of Alabama.
- J. Southworth, C. Gibbes*, P. Waylen, E. Bunting*, and X. Cui. 2011. Incorporating remote sensing methodologies into understanding environmental change: A multi-scalar and hierarchical approach for Southern Africa. University of Northern Illinois.
- P.R. Waylen, 2009. Fishy Tales from a Flood Hydrologist: Implications for Climate Variability in Northern South America and Southern Central America. Department of Wildlife Ecology and Conservation, UF.
- P.R. Waylen, Y. Qiu and B. Mayer, 2008 "EPI Does it with CLAS: What can Geography and Sociology do for you?", Emerging Pathogens Institute, University of Florida.
- P.R. Waylen, 2005, "Non-linear Forecasting of Streamflow and the Economic Impact of ENSO on Hydroelectric Power Generation in Colombia." Department of Geosciences, Florida Atlantic University.
- P.R. Waylen, 2001, "The Interaction of Ocean Temperatures in Modulating the Mid-summer Drought in Costa Rica." Center for Wetlands, University of Florida.
- P.R. Waylen, 2001, "Sea Surface Temperatures in the Atlantic and Pacific Oceans and Rainfall during July and August in Costa Rica." Universidad de Costa Rica, sede

Occidente, San Ramón, Costa Rica., August.

- P.R. Waylen, 2000, From Moose Jaw to Tahiti: Factors Governing the Interannual Variability of Precipitation in Costa Rica. Jacksonville University program in International Studies, Jacksonville, Florida.
- P.R. Waylen, 1999. Invited participant in “Short Course on Climate Forecasting”. Postgraduate Program in Water Resources, Faculty of Mines, National University of Colombia, Medellín, Colombia.
- P.R. Waylen, 1997. Es éste el niño del siglo ?” International Research Institute for Climate Prediction - NOAA. Symposium on Potential Uses of Seasonal and Interannual Forecasts and the 1997-98 El Niño, Lima, Peru.
- P.R. Waylen, 1997. Hydroclimatology and Human Impacts of El Niño in Central America. Department of Geography, University of Nottingham, Nottingham, UK.
- P.R. Waylen, 1997. Effects of El Niño on the Climatology and Hydrology of Costa Rica. Faculty of Social Sciences, National University of Costa Rica, San Ramón, Costa Rica.
- P.R. Waylen, 1997. `The Importance of Geography in Studying the Effects of El Niño on the Climatic Variability of Costa Rica. Postgraduate Program in Water Resources, Faculty of Mines, National University of Colombia, Medellín, Colombia.
- P.R. Waylen, 1996. `ENSO and the Interannual Variability of Precipitation in Costa Rica.” National Oceanic and Atmospheric Administration - Inter American Institute Symposium on Impact of Climatic Variability in Meso-America. Washington, D.C.
- P.R. Waylen, 1995. `Effects of Land Use on the Hydrology of Three Small Basins in Central Zimbabwe. School of Geography, Oxford University, Oxford, U.K.
- P.R. Waylen, 1995. `El Niño and Variability of Precipitation in Central America. School of Geography, Oxford University, Oxford, U.K.
- P.R. Waylen, 1995. `Social and Political Impacts of El Niño: Case Studies from Costa Rica and Peru. International Research Institute for Climate Prediction - NOAA. Symposium on Potential Uses of Seasonal and Interannual Climate Prediction in Water Resources Management. Santa Fe, Argentina.
- P.R. Waylen, 1995. `At the Crossroads: El Niño and Precipitation in Costa Rica. Department of Geography, Kings College, London, U.K.
- Invited participant in Workshop to develop the scientific agenda of Inter-American

Institute workshop on climate change: Ocean-Land-Atmosphere Interactions in the Inter-tropical Americas. Panama City, Panama, 1994.

P.R. Waylen, 1992. 'Cats, Dogs and the Boy Child: Spatial Variability of Precipitation in Costa Rica. Department of Geography, University of Southampton, Southampton, U.K.

P.R. Waylen, 1992. 'Global Hydrology with Respect to Palaeohydrologic Change. INQUA Commission on Global Continental Palaeohydrology, Mogilany, Poland.

P.R. Waylen, 1992. 'Flood Frequency Methods in the Presence of Mixed Generating Processes. Department of Engineering Hydrology, University College Galway, Ireland.

P.R. Waylen, 1992, 'El Niño and the Surface Hydrology of Western South America. Department of Engineering Hydrology, University College Galway, Ireland.

P.R. Waylen, 1992, 'Modeling the Crossing Characteristics of a Seasonally Non-stationary Process - Freezes. Department of Engineering Hydrology, University College Galway, Ireland.

P.R. Waylen, 1992. 'El Niño and its effects upon the Hydrology of Western South America. Department of Geography, University of Southampton, Southampton, U.K.

P.R. Waylen, 1991. 'El Niño and the Surface Hydrology of Chile. Department of Geography, Wilfrid Laurier University, Waterloo, Canada

P.R. Waylen, 1991. 'Aspects of the Surface Hydrology of Chile and El Niño. Guest Speaker, Climate Club, National Center for Atmospheric Research, Boulder, Colorado.

P.R. Waylen, 1989. 'It Never Rains, It Pours: El Niño in South America Public lecture series, Frontiers of Science, organized by Department of Physics, University of Florida.

P.R. Waylen, 1987. 'Analysis of the Probability of Frosts in Florida. Guest Speaker, Institute of Food and Agricultural Sciences, University of Florida.

P.R. Waylen, 1986. 'Stochastic Models of Floods. Guest Speaker, Department of Statistics, University of Florida.

P.R. Waylen, 1986. 'Frequency Analysis of Catastrophic Flooding Resulting from El Niño in Northern Peru. Guest Speaker, Department of Geology, University of Florida.

- P.R. Waylen, 1986. 'Stochastic Flood Analysis in Cold Regions. Guest Speaker, Department of Geography, McMaster University, Hamilton, Ontario, Canada.
- P.R. Waylen, 1984. 'Analysis of Recent Flooding on the Coquihalla and Lillooet Rivers, British Columbia. Guest Speaker, Department of Geography, Brandon University, Manitoba, Canada.
- P.R. Waylen, 1983. 'Regionalization and Prediction of Flooding in the Fraser River Catchment. Visiting Speaker Series, Department of Geography, University of Calgary, Alberta, Canada.
- P.R. Waylen, 1983. 'Flooding in Southwestern British Columbia. Guest Speaker, Department of Civil Engineering, University of Calgary, Alberta, Canada.
- P.R. Waylen, 1981. 'Flood Frequency. In Series, The Hydrology of Rare Events. Department of Civil Engineering, McMaster University, Hamilton, Ontario, Canada.

INVITED PRESENTATIONS AT CONFERENCES:

- C. M. Cañas* and P.R. Waylen, 2010. Modeling hydro-climatology of Madre de Dios basin and production of migratory catfish larvae in Southeastern Peru. American Geophysical Unions Meeting of the Americas, Iguazu Falls, Brazil.
- K. Owusu* and P.R. Waylen. 2005. Analysis of Rainfall Variability in Sub-humid Ghana. Annual Meeting of the Association of American Geographers, Denver, Colorado.
- P. R. Waylen and G. Poveda, 2004. Interannual Variability of Flooding in the Southern Isthmus. Annual Meeting of the Geological Society of America, North Central Division, St. Louis, Missouri.
- G. Poveda, O.J. Mesa, and P.R. Waylen, 2003. 'Forecasting of River Flows in Colombia Based Upon ENSO and its Associated Economic Value. National Group for the Prevention of Natural Hazards, Seminar on Hydrological Extremes and Climates in Tropical Areas and their Control, Department of Civil Engineering, University of Brescia, Italy.
- P.R. Waylen, 1998. Effects of ENSO upon Hydrologic Extremes in Western South America., Keynote Speaker, International Geographical Union, Annual Meeting, Lisbon, Portugal.
- P.R. Waylen, 1998. 'From Medicine Hat to Manaus: Effects of ENSO on the

- Hemispherical Controls of Hydrologic Extremes in Central America.” Keynote Speaker, Hydrology Section, Canadian Geophysical Union, Annual Meeting, Québec City, Québec, Canada.
- P.R. Waylen, 1996. ‘Effects of El Niño on Precipitation in Central America. NOAA Workshop on Applications for Climate Forecasts in the Mesoamericas. Washington, D.C.
- P.R. Waylen and C.N. Caviedes, 1995. ‘Piecing Together the Effects of ENSO in Central America. Inter- American Institute Conference on Monitoring for Climate Change in The Americas, Viña del Mar, Chile.
- P.R. Waylen and M.E. Quesada*, 1994. ‘Regional Responses of Annual and Monthly Precipitation to El Niño in Costa Rica. American Association for the Advancement of Science (Pacific Division), Annual Meeting, San Francisco, California.
- C.N. Caviedes and P.R. Waylen, 1992. ‘River Responses to ENSO Events in the West of South America. NOAA sponsored conference on the ‘Effects of ENSO upon the Continent of South America. Fortaleza, Brazil.
- P.R. Waylen, 1992. ‘Deriving the Characteristics of Cold Spells from Crossing Theory. Fifth International Meeting on Statistical Climatology. Toronto, Ontario, Canada.
- P.R. Waylen, C.N. Caviedes and C. Juricic, 1991. ‘El Niño and the Surface Hydrology of Chile: A Window on the Future?. Waterscapes ‘91: Water Management for a Sustainable Future. Canadian Water Resources Association and the Saskatchewan Research Council, Saskatoon, Saskatchewan, Canada.
- P.R. Waylen and C.N. Caviedes, 1990. ‘El Niño, precipitation and streamflow in western South America. Conference of Latin American Geographers, Auburn, Alabama.
- P.R. Waylen, 1990. ‘Statistical Model of Freezes in Florida. Florida Society of Geographers, Cedar Key, Florida.
- P.R. Waylen and C.N. Caviedes, 1989. ‘Mixed Processes, Climatic Variability and Annual Floods in Temperate Central Chile. American Geophysical Union, Spring Meeting, Baltimore, Maryland.
- R. Ballerini and P.R. Waylen, 1988. ‘Extreme Value Theory and Seasonally Non-stationary Daily Rainfall Totals. American Geophysical Union, Spring Meeting, Baltimore, Maryland.
- P.R. Waylen, 1987. ‘Partial Duration Series and Flood Loss Estimates. American Association of Geographers, Annual Meeting, Portland, Oregon.

D.W. LeBoutillier* and P.R. Waylen, 1987. `Stochastic Analysis of Flow Duration Curves. American Association of Geographers, Annual Meeting, Portland, Oregon.

M-k. Woo and P.R. Waylen, 1985. `Probability Studies of Floods. in Research, Resources and the Environment in Third World Development. University of Waterloo, Waterloo, Ontario, Canada.

CONTRIBUTED PRESENTATIONS AT CONFERENCES:

International:

C. Murcia, R. Muñoz-Carpena, M. Convertino, A. R. Albertin, M. Sasa, M. A. Campo-Bescos, G. A. Kiker,

J. Southworth, W. D. Graham, P. Frederick, M. T. Brown and P. R. Waylen, 2013. "Water Sustainability in NW Costa Rica: the Challenge of Balancing the Needs of Natural and Human Systems Under Climate Change". Annual Meeting Association of Tropical Biology and Conservation, San José, Costa Rica.

C. Staub* and P.R. Waylen, 2013. "Spatio-temporal Trends in Rainfall Variability and the El Niño Southern Oscillation in Mauritius." Fifth International Conference on Climate Change and Impacts, Port St. Louis, Mauritius.

S. Chen* and P.R. Waylen, 2010, "Impact Analysis of Changing Riverine Frequencies caused by Climate Change on Transportation Infrastructure and Land Use." The International Association for China Planning, Beijing, China.

C. Cañas* and P.R. Waylen, 2008. Modeling River Hydrologic Regime and Spawning of Migratory Catfishes in Southeastern Peruvian Amazon. Joint International Meeting of the Geophysical Societies of Latin America and the American Geophysical Union, Fort Lauderdale, FL.

A.E. Gaughan* and P.R. Waylen, 2008. Spatial and Temporal Precipitation Dynamics: Variability in the Kavango-Zambezi Transboundary Conservation Area of Southern Africa. Pathways to Success: Integrating Human Dimensions into Fisheries and Wildlife Management. International Human Dimensions Program on Global Environment Change. Estes Park, CO.

Participant in Workshop on "Land Degradation and Desertification", Kings College, London, 2008.

K. Owusu* and P.R. Waylen, 2007. Rainfall Variability in the Volta River Basin, Ghana. International Geographical Unions Commission on Water Sustainability, Asheville, NC.

- C. Cañas* and P.R. Waylen, 2007. Hydrologic Regime and Catfish Larval Drift in the Madre de Dios River, Southeastern Peru. International Geographical Unions Commission on Water Sustainability, Asheville, NC.
- P.R. Waylen, 2007. Low Frequency Changes in the Rainfall Record of Accra, Ghana, 1895-2003. International Geographical Unions Commission on Water Sustainability, Asheville, NC.
- G. Poveda, O.J. Mesa and P.R. Waylen, 2001. Non-linear Prediction of Stream Flows into the El Peñol Hydroelectric Project, Colombia. International Geographical Union Study Group on “Environmental Changes and Extreme Hydrological Events”, Zaragoza, Spain.
- P.R. Waylen and M.E. Quesada*, 2001, The Effect of Atlantic and Pacific Sea Surface Temperatures on the Mid-Summer Drought of Costa Rica. International Geographical Union Study Group on “Environmental Changes and Extreme Hydrological Events”, Zaragoza, Spain.
- J. Granados, I. Jaramillo, P. Machado, A. Mendez, O. Mesa, G. Poveda and P.R. Waylen, 2000. “Variability and Non-linear Prediction of Stream Flow Inputs to Hydroelectric Projects in Colombia, Costa Rica and Panama.” Impacts of Climatic Variations on Water Resources: A Focus on Border Regions: NOAA/Inter-American Institute Symposium. University of California at Santa Barbara, California.
- F. Zermoglio*, M. Binford and P.R. Waylen, 2000. “Linking landscape pattern with Species Diversity in the Savanna of Noel Kempff Mercado National Park, Bolivia.” International Association of Landscape Ecologists, Annual Meeting, Fort Lauderdale, Florida
- P.R. Waylen and G. Poveda, 1999. “Caribbean Tropical Storms and Hydrologic Extremes in Pacific Costa Rica.” International Geographical Union Study Group on “Environmental Changes and Extreme Hydrological Events”, Aberystwyth, Wales.
- M.E. Quesada* and P.R. Waylen, 1998. Comportamiento de los Avenidas Maximas en las Cuencas Hidrográficas de los Ríos Candelaria y Sarapiquí: Relación con la Oscilación Sur. Central American Congress of Geographers, San José, Costa Rica.
- S. Henworth and P.R. Waylen, 1996. `Streamflow Drought Regime of the Senegesi and Mare Valleys, Zimbabwe.” International Association of Hydraulics Research, African Division, Biennial Congress - *From Flood to Drought*, Lost City, North-West Province, South Africa.
- C.N. Caviedes and P.R. Waylen, 1996. `ENSO and precipitation variability in Central

America. Conference of Latin American Geographers, Tegucigalpa, Honduras.

P.R. Waylen, 1992. 'Deriving the Characteristics of Cold Spells from Crossing Theory. Proceedings of the 5th International Meeting on Statistical Climatology. Toronto, Canada. Toronto, Canada.

C.N. Caviedes and P.R. Waylen, 1989. 'El Niño and Possible Voyages of Migration in the Central Pacific. Conference of Latin American Geographers, Queretaro, Mexico.

M-k. Woo and P.R. Waylen, 1988. 'Effects of Interbasin Transfer on Streamflow Regimes, Northwestern Ontario, Canada. 7th Northern Research Basin Symposium Workshop. Ilulissat/Jacobshaven, Greenland.

M-k. Woo and P.R. Waylen, 1987. 'Effect of Flow Diversion on the Runoff Regimes of Northern Ontario Rivers. International Symposium on Interbasin Transfer of Water: Impacts and Research Needs for Canada, Environment Canada, Saskatoon, Saskatchewan, Canada.

K. Irvine and P.R. Waylen, 1985. 'Partial Series Analysis of Floods in Canadian Rivers. Canadian Waters, organized by the Rawson Academy, Toronto, Ontario, Canada.

P.R. Waylen, 1985. 'Geographic Variability of Flooding in Southwestern British Columbia, Canada. Institute of British Geographers, Annual Meeting, Leeds, U.K.

National:

C. Huguenin*, Waylen, P. and Serafin, K., 2021, December. Characterizing inter and intra annual variability in hydroclimatic extremes: The case of the Tempisque river basin in Northwestern Costa Rica. In *AGU Fall Meeting Abstracts* (Vol. 2021, pp. A25H-1770).

K. Vazquez*., Huguenin, C*., Waylen, P.R. and Muneeppeerakul, R., 2020, December. Effects of Water Variability on Resilience and Migration Patterns in a Water-Subsidized System: a Modeling Study of a NW Costa Rica Basin. In *AGU Fall Meeting Abstracts* (Vol. 2020, pp. GC072-0005).

G. Poveda, Moncada, O., Waylen, P.R. and Rasmussen, R., 2019, December. The pluviometric optimum on the Andes of Colombia. In *AGU Fall Meeting Abstracts* (Vol. 2019, pp. A24K-09).

C.G. Staub*, Stevens FR*, Waylen PR 2015. Spatial Analysis and GIS Applications for Estimating Monthly Rainfall Totals on Mauritius (59341). Poster presented at *American Geophysical Union Meeting*, San Francisco, CA.

D. Keellings, D.* and P. Waylen, 2014. Investigating Drivers of Bivariate Heat Waves in

- Florida using Extreme Value Analysis. *Association of American Geographers Annual Meeting*, Tampa, FL.
- C.G. Staub*, Stevens, F.R.*, Martinez, C., Waylen, P.R., 2014. The influence of Pacific and Indian Ocean sea surface temperatures on monthly rainfall in Mauritius. *Association of American Geographers Annual Meeting*, Tampa, FL.
- D. Keellings* and P. Waylen, 2013. "Characterizing climatological heat wave risk in Florida using extreme value analysis." American Association of Geographers Annual Meeting, Los Angeles, CA.
- P. Waylen, J. Southworth, C. Gibbes* and H. Tsai*, 2013. Developing time series analyses of the statistical significance of land cover change processes in vegetation persistence analyses. American Association of Geographers Annual Meeting, Los Angeles, CA.
- L.Rigg. J. Southworth, C. Gibbes*, P. Waylen, S. McCarragher, and L. Cassidy. 2013. "Linking dendrochronology, satellite remote sensing and climate in savanna landscapes." American Association of Geographers Annual Meeting, Los Angeles, CA.
- J. Southworth, C. Gibbes*, P. Waylen and B. Child, 2013. How do climate variability and climate change influence vegetation cover and vegetation change in dryland ecosystems across Southern Africa? American Association of Geographers Annual Meeting, Los Angeles, CA.
- Y. Wang*, P. Waylen and L. Mao "Spatio-Temporal Modeling of Weekly ILI Peak Events with Crossing Theory." American Association of Geographers Annual Meeting, Los Angeles, CA.
- C. Gibbes*, J. Southworth and P.R. Waylen. 2012. An investigation of variability and change in the human and natural systems within a vulnerable semi-arid region. American Geophysical Union Meetings, San Francisco, CA.
- C. G. Staub* and P R Waylen, 2012, Long term trends in rainfall variability in the Republic of Mauritius. Annual Meeting American Association of Geographers, New York, NY.
- J.E. Steele*, E.L. Bunting*, E.,Keys, S. Muyengwa*, B.Child, P.Waylen and J. Southworth, 2012, The role of socioeconomic institutions in mitigating impacts of climate variability and climate change in Southern Africa. Annual Meeting American Association of Geographers, New York, NY.
- J. Southworth, M. W. Binford, P.R. Waylen, A. Gaughan*, C. Gibbes* and F. Stevens*. 2010. Understanding and predicting the impact of climate variability and climate

change on land use and land cover change via socio-economic institutions in Southern Africa. Poster Presentation, NASA Land-cover/land-use change Science Team Meeting, April 20-22 2010, Bethesda, MD. National Meeting.

C.Gibbes*, Cui, X., Bunting, E.*, Southworth, J., and P. Waylen, 2010, Quantifying ecological resilience in African savannas. Global Land Project - "Land Systems, Global Change and Sustainability", Arizona State University, Tempe, AZ.

C.M. Cañas* and P. R. Waylen, 2009. Relating Hydro-Climatology to Catfish Larvae Drifting in the Madre de Dios River, Southeastern Peru . American Association of Geographers Annual Meeting, Las Vegas, NV.

A. Szyniszewska* and P.R. Waylen, 2009. Determining the Daily Rainfall Characteristics from the Monthly Rainfall Totals: Central and NE Thailand. American Association of Geographers Annual Meeting, Las Vegas, NV.

A.E. Gaughan,* and P.R. Waylen, 2009. Spatial and Temporal Variability of Precipitation within the Okvango-Kwando-Zambezi Catchment Area of Southern Africa. American Association of Geographers Annual Meeting, Las Vegas, NV.

A.E Gaughan,* and P.R. Waylen, 2010. Spatial and Temporal Variability of Precipitation within the Okvango-Kwando-Zambezi Catchment Area of Southern Africa. American Meteorological Society Annual Meeting, Atlanta, GA.

S. Shen* and P.R Waylen, 2010. Impacts of Changing Riverine Flood caused by Climate Change on Transportation and Land Use. Association of Collegiate Schools of Planning, Annual Meeting, Minneapolis, MN.

A.E. Gaughan*, and P.R. Waylen, 2010. Spatial and Temporal Variability of Precipitation within the Okvango-Kwando-Zambezi Catchment Area of Southern Africa. American Meteorological Society Annual Meeting, Atlanta, GA.

C.M. Cañas* and P. R. Waylen, 2009. Relating Hydro-Climatology to Catfish Larvae Drifting in the Madre de Dios River, Southeastern Peru". American Association of Geographers Annual Meeting, Las Vegas, NV.

A. Szyniszewska* and P.R. Waylen, 2009. Determining the Daily Rainfall Characteristics from the Monthly Rainfall Totals: Central and NE Thailand. American Association of Geographers Annual Meeting, Las Vegas, NV.

A. Szyniszewska* and P.R. Waylen, 2008. Assessing the Probability of Climate Shocks in Central Thailand. Annual Meeting American Association of

Geographers, Boston, MA.

M. Marsik*, P.R. Waylen and M.E. Quesada*, 2008. Changing Discharge Contributions to the Rio Grande de Tarcoles, Costa Rica. Annual Meeting American Association of Geographers, Boston, MA.

K. Owusu* and P.R. Waylen, 2008. The Changing Rainfall Climatology of Mid-Ghana: Implications for Rain-fed Agriculture. Annual Meeting American Association of Geographers, Boston, MA.

J.M. Harrison* and P.R. Waylen, 2001. The Effect of the Madden-Julian Oscillation on Daily Precipitation in Mexico. American Association of Geographers Annual Meeting, New York, NY.

C.D. Hoyos, Mesa, O.J., Poveda, G. and P.R. Waylen, 2000. Variability and Non-linear Prediction of Stream Flows into the El Peñol Hydroelectric Project, Colombia. American Geophysical Union Fall Meeting, San Francisco, CA.

W.A. Reiners, Liu, S., Waylen, P.R., Gerow, K.G., Keller, M. and D.S. Schimel, 2000. Sensitivity of N₂O and NO Regional Fluxes to ENSO in Northeastern Costa Rica. American Geophysical Union Fall Meeting, San Francisco, CA.

A.L. Deane* and P.R. Waylen, 1999. "Statistical Analysis of Biologically Important Rainfall Events in North Central Chile." NOAA 24th Annual Climate Diagnostics and Prediction Workshop, Nov 1- 5, Tucson, AZ.

J.M. Harrison*, P.R. Waylen and S. Laporte M., 1999. Daily Precipitation Characteristics and ENSO: A Case Study of Costa Rica. American Meteorological Society, Annual Meeting, Dallas, TX.

J.M. Harrison* and P.R. Waylen, 1997. 'The Regionalization of Costa Rican Precipitation Using Markov Occurrence Models and L-Moment Intensity Model. American Association of Geographers, Annual Meeting, Fort Worth, TX.

M.R. Zorn* and P.R. Waylen, 1997. 'Identifying the Appropriate Probability Distribution by which to Model Mean Monthly Streamflow in Florida. American Association of Geographers, Annual Meeting, Fort Worth, TX.

J.M. Harrison* and P.R. Waylen, 1996. 'The Regionalization of Precipitation Patterns in Central America using Cluster analysis. American Association of Geographers, Annual Meeting, Charlotte, North Carolina

M.R. Zorn* and P.R. Waylen, 1996. ' The Spatial Variation in Mean Monthly Streamflow across Florida. American Association of Geographers, Annual Meeting, Charlotte, NC.

- J.M. Harrison* and P.R. Waylen, 1998. 'Modeling the Effects of ENSO on Costa Rican Precipitation. American Association of Geographers, Annual Meeting, Boston, Massachusetts.
- C. Meindl* and P.R. Waylen, 1998. 'Selling of Floridas Everglades using Climatological Misconceptions. American Association of Geographers, Annual Meeting, Boston, Massachusetts
- M.R. Zorn* and P.R. Waylen, 1998. 'Responses of Monthly Discharges to ENSO Events across Florida. American Association of Geographers, Annual Meeting, Boston, Massachusetts.
- P.R. Waylen and S. Henworth, 1995. 'Effects of Land Use upon Annual Flows and Floods in Three Small Zimbabwean Catchments. American Association of Geographers, Annual Meeting, Chicago, Illinois.
- M. Zorn* and P.R. Waylen, 1994. 'Effects of ENSO Events on Streamflow in the Santa Fe River, North Florida. American Association of Geographers, Annual Meeting, San Francisco, California.
- R. Franklin* and P.R. Waylen, 1991. 'Correlation of Daily Precipitation in Central Florida. American Association of Geographers, Annual Meeting, Miami, FL.
- D.W. LeBoutillier* and P.R. Waylen, 1990. 'A Stochastic Model of Flow Duration Curves for Rivers in British Columbia, Canada. American Geophysical Union, Fall Meeting, San Francisco, CA..
- P.R. Waylen and C.N. Caviedes, 1990. 'Regional Survey of the effects of El Niño on the Hydrology of South America. American Association of Geographers, Annual Meeting, Toronto, Ontario, Canada.
- M-k Woo and P.R. Waylen, 1990. 'Numerical Simulation of Monthly Temperature and Precipitation in Canada under Climate Change Scenarios. American Association of Geographers, Annual Meeting, Toronto, Ontario, Canada.
- P.B. Bright* and P.R. Waylen, 1990. 'Annual Floods and El Niño in the Argentinean Andes. American Association of Geographers, Annual Meeting, Toronto, Ontario, Canada.
- D.W. LeBoutillier* and P.R. Waylen, 1990. 'Empirical Model of Flow Duration Curves in British Columbia. American Association of Geographers, Annual Meeting, Toronto, Ontario, Canada.
- A.M. Snook* and P.R. Waylen, 1990. 'Southerners Rule U.K.? A Geographic Analysis of

- Success in the English Football League, 1923-1987. American Association of Geographers, Annual Meeting, Toronto, Ontario, Canada.
- P.R. Waylen, 1989. 'Probability Distributions of Freezes; First, Last and Growing Season. American Association of Geographers, Annual Meeting, Baltimore, MD.
- D.W. LeBoutillier* and P.R. Waylen, 1988. 'Physical Factors Governing the Nature of Flow Duration Curves in Southern British Columbia, Canada. American Association of Geographers, Annual Meeting, Phoenix, AZ.
- T.D. Tapley, Jr* and P.R. Waylen, 1988. 'Spatial Variability of Annual Precipitation and El Niño in Western Peru. American Association of Geographers, Annual Meeting, Phoenix, AZ.
- T.D. Tapley, Jr* and P.R. Waylen, 1987. 'A Mixture Model of Annual Precipitation Totals for Western Peru. American Geophysical Union, Fall Meeting, San Francisco, CA.
- D.W. LeBoutillier* and P.R. Waylen, 1987. 'A Probability Model for Flow Quantiles from the Annual Flow Frequency Regime. American Geophysical Union, Fall Meeting, San Francisco, CA.
- P.R. Waylen and C.N. Caviedes, 1986. 'Catastrophic Flooding and El Niño in Northern Peru. American Geophysical Union, Fall Meeting, San Francisco, CA.
- M.H.F. Hey* and P.R. Waylen, 1985. 'Probability Analysis of Hail and Thunderstorm Occurrence in Southern Saskatchewan. Canadian Association of Geographers, Annual Meeting, Trois Rivieres, Québec.
- D.W. LeBoutillier* and P.R. Waylen, 1985. 'Stochastic Structure of Cold Spells in Southern Saskatchewan. Canadian Association of Geographers, Annual Meeting, Trois Rivieres, Québec.
- K. Stevenson* and P.R. Waylen, 1985. 'Probability Distribution of Daily Precipitation Totals in Agricultural Saskatchewan. Canadian Association of Geographers, Annual Meeting, Trois Rivieres, Québec, Canada.
- P.R. Waylen, 1984. 'Spatial Variability of High Flow Characteristics in Southwestern British Columbia. Canadian Association of Geographers, Annual Meeting, Nanaimo, British Columbia, Canada.
- P.R. Waylen, 1983. 'A Method for Predicting the Distribution of Daily Peak Flows During the High Flow Season. American Geophysical Union, Fall Meeting, San Francisco, CA..

- P.R. Waylen and M-k Woo, 1983. `Stochastic Analysis of Snowmelt Dominated Flood Regimes. Canadian Association of Geographers, Annual Meeting, Winnipeg, Manitoba, Canada.
- P.R. Waylen and M-k Woo, 1983. `Prediction of Snowmelt and Rainfall Generated Floods in Northern Ontario. Canadian Association of Geographers, Annual Meeting, Winnipeg, Manitoba, Canada.
- P.R. Waylen, 1983. `Regional Variations in Daily Peak Flows in Central British Columbia. American Association of Geographers, Annual Meeting, Denver, CO.
- P.R. Waylen and M-k. Woo, 1980. `Regionalisation and Prediction Annual Floods in the Fraser River Catchment, B.C. Canadian Association of Geographers, Annual Meeting, Montreal, Québec, Canada.

Regional:

- Keellings, D.* and P.Waylen, 2014. Investigating drivers of bivariate heat waves in Florida. Southeastern Division of the American Association of Geographers Annual Meeting, Athens, GA.
- Annear, C. and P. Waylen, 2014. Socializing the Rain: Human Community Adaptation to Rainfall Variability, Mweru-Luapula, Zambia. Northeast Workshops on Southern Africa Annual Conference, Burlington, VT.
- Keellings, D.* and P.Waylen, 2013. Increasing Risk of Heat Waves in Florida: Characterizing Changes in Heat Wave Risk using Extreme Value Analysis. Southeastern Division of the American Association of Geographers Annual Meeting, Roanoke, VA.
- Rohli, R., S. Reynolds, J. Johnson, P. Waylen and M. Francek, 2013. Metacognition and Learning in Undergraduate Geography Courses. Southwestern Division of the American Association of Geographers annual meeting, Nacogdoches, TX.
- Waylen, P., S. Reynolds, J. Johnson, R. Rohli and M. Francek, 2013. Introductory Physical Geography: What's in your course textbook? Southeastern Division of the American Association of Geographers annual meeting, Roanoke, VA.
- Waylen, P.R., J. Southworth, C. Gibbes* and H. Tsai*. 2012. Developing statistical tools to determine significance of land cover changes in persistence analyses. Southeastern Division of the American Association of Geographers Annual Meeting, Asheville, NC.
- Waylen, P.R., C. Annear and Y. Qiu, 2011, "Isabi, Ilekonga Menshi (A Fish Follows

Water): Estimating Annual Precipitation Inputs to the Lake Mweru Basin, Zambia-Congo, and their Spatial and Temporal Variability, 1925-86.” Annual Meeting of the Southeastern Division of the American Association of Geographers, Savannah, GA.

Keellings, D.* and P.R. Waylen, 2011.”Investigating Drivers of Maximum Daily Temperatures in Florida using Extreme Value Analysis.” Annual Meeting of the Southeastern Division of the American Association of Geographers, Savannah, GA.

Keellings, D.* and P.R. Waylen, 2010. A Method of Predicting the Risks of Annual Maximum Daily Temperatures. Annual Meetings of the Southeastern Division of the Association of American Geographers, Birmingham, AL.

Keellings, D.* and P.R. Waylen, 2009. Stochastic Properties of Heat Waves, Lake City, Florida, 1892- 2006. Southeastern Division Association of American Geographers, Knoxville, TN.

P.R. Waylen and K. Owusu*, 2008. Conveying Changes in Agricultural Rainfall Climatology in Mid- Ghana, 1950-70 to 1980-2000. Annual Meeting of the Southeastern Division of the American Association of Geographers, Greensboro, NC.

K. Owusu* and P.R. Waylen, 2007.Rainfall Variability and the Changing Water Inputs to the Volta Basin: Implications for Water Resource Sharing. Southeastern Division of the Association of American Geographers, Charleston, SC.

P.R. Waylen and K. Owusu*, 2007. Going, Going ... Gone? West Africa’s Disappearing Short Dry Spell. Southeastern Division of the Association of American Geographers, Charleston, SC.

J.M. Harrison* and P.R. Waylen, 2001. “The Effect of the Madden Julian Oscillation on Daily Precipitation in Mexico.” Annual Meeting of American Association of Geographers Southeastern Division, Lexington, KY

M.R. Zorn* and P.R. Waylen, 1996. Prediction of Mean Annual Flows in North Florida.” Southeastern Division, American Association of Geographers, Annual Meeting, Athens, GA

T.M. Fik and P.R. Waylen, 1991. `Negentropy, Spatial Order and Information Statistics. Western Regional Science, Annual Meeting, Monterey, CA.

State:

J. Richardson, *, Van Horn, J.* and P. Waylen, 2015. Declining Streamflow due to Center-Pivot Irrigation, Santa Fe River, Florida. *Florida Society of Geographers, Annual*

Meeting, Jacksonville, FL.

D. Keellings,* and P.Waylen, 2014. Investigating drivers of bivariate heat waves in Florida. *Florida Society of Geographers, Annual Meeting*, Jacksonville, FL.

J. Engström*, Keellings, D.*, and P.R. Waylen. 2015. The Sunshine State: Investigating External Drivers of Sky Conditions. *Florida Society of Geographers, Annual Meeting*, Jacksonville, FL.

P.Waylen, H, Tsai* and J. Southworth. 2013. Spatial and Seasonal Persistence of Agricultural and Palustrine Wetland Land covers in Florida, 1982-2006. *Florida Society of Geographers Annual Meeting*, Tallahassee, FL.

D. Keellings* and P. Waylen, 2011. Investigating Drivers of Maximum Daily Temperatures in Florida using Extreme Value Analysis. Florida Climate Institute, Annual Meeting, Gainesville, FL.

P.Waylen, C. Annear and Y.Qiu. 2011. Estimating Historic Precipitation Inputs into Lake Mweru, Zambia. Florida Climate Institute, Annual Meeting, Gainesville, FL.

H-P Tsai*, J. Southworth, P. Waylen, and Y. Qiu, 2011. An assessment of vegetation responses to precipitation variability in Florida. . Florida Climate Institute, Annual Meeting, Gainesville, FL.

P.R.Waylen and D. Keellings* 2011. Climate and Health in Florida: Changes in risks of annual maximum temperatures in the latter half of the Twentieth Century. Emerging Pathogens Research Day, University of Florida. (Poster)

X. Ciu, C. Gibbes*, J. Southworth and P.R. Waylen, 2011. Assessing ecological response of savanna landscapes to climate change. Florida Society of Geographers, Gainesville, FL.

P.R. Waylen and D. Keellings*, 2011, Who's Hot and Who's Not: Changing Risks of Annual Maximum Temperatures in Florida. Florida Society of Geographers, Gainesville, FL.

P.R. Waylen and A.E. Gaughan*, 2010, Spatial and Temporal Variability of Precipitation in the Okavango- Kwando-Zambezi Catchment, Southern Africa. Ontario Division of the Canadian Association of Geographers, Toronto, Canada.

E. Bunting*, C. Gibbes*, J. Southworth and P.R. Waylen, 2010. Climate Variability across the Kwando, Okavango, and Zambesi catchments. Florida Climate Institute, Kick-off, Tallahassee, FL. (Poster)

- C. Cañas* and P.R. Waylen, 2010. Modeling Hydro-climatology of Madre de Dios Basin and Production of Migratory Catfish Larvae in Southeastern Peru. Florida Climate Institute, Kick-off, Tallahassee, FL. (Poster)
- X. Ciu, C. Gibbes*, J. Southworth and P.R. Waylen, 2010. Measuring Semi-arid Savanna Cyclical Patterns and Dynamics. Florida Climate Institute, Kick-off, Tallahassee, FL. (Poster)
- A. E. Gaughan* and P.R. Waylen, 2010. Spatial and Temporal Precipitation Variability in the Okavango- Kwando-Zambesi Catchment, Southern Africa. Florida Climate Institute, Kick-off, Tallahassee, FL. (Poster)
- C. Cañas* and P.R. Waylen, 2010. Modeling Hydro-climatology of Madre de Dios Basin and Production of Migratory Catfish Larvae in Southeastern Peru. Florida Climate Institute, Kick-off, Tallahassee, FL. (Poster)
- D. Keellings* and P.R. Waylen, 2010. The Stochastic Properties of High Daily Maximum Temperatures.. Florida Climate Institute, Kick-off, Tallahassee, FL. (Poster)
- D. Keellings* and P.R. Waylen, 2009. Statistical Properties of “Heat Wave” Occurrences, Lake City, Florida, 1892-2006. Florida Environmental Health Associations (FEHA) Annual Educational Meeting, Daytona Beach, FL.
- Y. Qiu and P.R. Waylen, 2009. Building Spatial Consensus Ontology Based on Integrated Geo-enabled Service Oriented Architecture. Annual Meeting Florida Society of Geographers, St. Augustine, FL.
- P.R. Waylen, K. Owusu* and Y. Qiu, 2009. Spatial Extent of Intra-annual, Interannual and Inter-decadal Variability in the West African Rainy Season. Annual Meeting Florida Society of Geographers, St. Augustine, FL.
- P.R. Waylen and Y. Qiu, 2008. The Changing Significance of Winter Contributions to Annual Rainfall Totals in Florida. Florida Society of Geographers, Miami, FL
- P.R. Waylen and C. Cañas*, 2007. Ichthyological Procreation in the Upper Amazon Basin. Florida Society of Geographers Meeting, Jacksonville, FL
- P.R. Waylen and C. Matyas, 2006. Changes in Seasonal Rainfall Patterns, Jacksonville, Florida, 1872- 2005. Florida Society of Geographers, St. Petersburg, FL
- M. Marsik*, M. Quesada* and P.R. Waylen, 2006. Changes in Flow Contributions from Tributaries of the Tarcoles River, Costa Rica. Florida Society of Geographers, St. Petersburg, LA.

- P.R. Waylen and G. Poveda, 2004, Two Tropical Jets and the Climate of Northwestern South America. Florida Society of Geographers, Pensacola Beach, FL.
- P.R. Waylen, R. Compagnucci and M. Caffera, 1999. "Interannual and interdecadal Variations in Stream flow the Argentine Andes." Canadian Association of Geographers (Ontario Division), Hamilton, Ontario, Canada.
- P.R. Waylen and C. Meindl*, 1999. Using Climatological Misconceptions to Sell the Everglades. Florida Society of Geographers, Annual Meeting, Gainesville, Florida.
- P.R. Waylen, E. Chen and J.F. Gerber. 1986. `A Method of Estimating the Probability of Cold Spells in Florida. Florida State Horticultural Society, Annual Meeting, Miami Beach, Florida.
- P.R. Waylen, 1986. `Catastrophic Flooding on the Piura River, Peru Resulting from the Occurrence of El Niño. Florida Society of Geographers, Annual Meeting, Fort Myers, Florida.
- M.H.F. Hey* and P.R. Waylen, 1984. `Probability Analysis of Hail, Thunderstorm, and Freezing Rain Occurrences. Canadian Association of Geographers, (Prairie Division), Swan River, Manitoba, Canada.
- D.W. LeBoutillier* and P.R. Waylen, 1984. `Fourier Series Analysis of Mean Minimum Temperatures in Southern Saskatchewan. Canadian Association of Geographers, (Prairie Division), Swan River, Manitoba, Canada.
- K. Stevenson* and P.R. Waylen, 1984. `Probabilistic Analysis of Daily Precipitation Totals in Saskatoon and Regina. Canadian Association of Geographers, (Prairie Division), Swan River, Manitoba, Canada.
- M-k. Woo and P.R. Waylen, 1983. `Flood Regimes of Northern Ontario Rivers. Canadian Association of Geographers, (Ontario Division), Hamilton, Ontario, Canada.
- P.R. Waylen and M-k. Woo, 1981. `Analysis of Flooding on the Coquihalla River, British Columbia, December 1980. Canadian Association of Geographers, (Ontario Division), Ottawa, Canada.

RESEARCH GRANTS:

- 2014 "Death, disease and distribution: challenging current approaches and methodologies to the study of zoonotic diseases." University of Florida Informatics Institute. (PI. Jane Southworth). Role Co-PI. \$36,000
- 2011 "Interdisciplinary workgroup on water sustainability in the Tempisque Basin, NW Costa Rica." NSF Catalyzing New International Collaborations. (PI. Elizabeth Losos, Duke University). Role Co-PI. \$34,335

- 2010 “Virtualizing the CLAS Computer Teaching Laboratory Environment.” UF Internal Technology Fees. (P.I. Scot Matusz) \$97,000
- 2009 “Land Use Change and Climate Variability in Southern Africa.” NASA. (P.I. Jane Southworth). \$871,000
- 2008 “Environmental Change and Health.” TSCG \$ 18,000 2004. “Economic Impacts of Environmental Uncertainty in Thailand.” National Science Foundation. (P.I.s M. Binford (Florida), R. Townsend and A. Kolata (Chicago)) \$649,641
- 1998 “Benefits of Incorporating ENSO Forecasts into Reservoir Operation and Hydroelectric Power Distribution Procedures.” Inter-American Institute. (P.I. with G. Poveda, O. Mesa (Universidad Nacional de Colombia, Medellín), C. Candanedo (I.H.R.E., Panama), and S. Laporte (I.C.E, Costa Rica)) \$116,000
- “Conditioning the Estimation of Extreme Flood Probabilities in the Piura River, Peru, upon El Niño”. National Oceanic and Atmospheric Administration, Office of Global Programs, Applications. (P.I. with N. Ordinola, Universidad de Piura, Peru) \$ 4,000
- 1997 “Regional Application of ENSO-Based Climate Forecasts to Agriculture in the Americas.” National Oceanic and Atmospheric Administration. (Consortium of Florida Universities, P.I., J. Jones.)\$450,000
- Use of Climate Forecasts in Operating Hydro-power Reservoirs in Colombia Inter-American Institute - National Science Foundation. Travel and seed monies. (P.I. with O. Mesa and G. Poveda) \$ 5,000
- The effect of El Niño on Daily Precipitation Characteristics in Central America: A Case Study in Costa Rica. National Science Foundation

Dissertation Improvement Grant

- (P.I. with J.M. Harrison) \$ 10,000
- 1995 Use of Climate Forecasts in Operating Hydro-power Reservoirs in Colombia Inter-American Institute - National Science Foundation. Travel and seed monies. (P.I. with O. Mesa and G. Poveda) \$ 5,000
- 1995 `Creation of a Daily Precipitation Data Base for Zimbabwe. Division of Sponsored Research, University of Florida Graduate Assistantship \$ 6,004
- 1994 `Effects of the Interaction of ENSO and Northern Hemispheric Circulation on Precipitation and Runoff in Central America. National Oceanic and Atmospheric Administration, Office of Global Programs-Climate and Global Change (P.I. with C. Caviedes) \$ 16,095
- 1994 `Establishing a Data Bank of South American Hydrometeorological Observations. Division of Sponsored Research, University of Florida \$ 5,023
- 1992 `Stochastic Analyses of Global Continental Waters in the Past 20,000 Years. Committee for Advanced Studies, University of Southampton, U.K. \$ 2,700

*Curriculum Vitae**Peter R. WAYLEN*

1990	`Climatic Comparison of the Citrus Growing Regions of Brazil and Florida. University of Florida Division of Sponsored Research Graduate Assistantship. (Co P.I. with C. Caviedes)	\$ 5,400
1989	`The Expected Risk of Extreme Freezes in Florida University of Florida Division of Sponsored Research, Graduate Assistantship.	\$ 771
1988	`A Model of Flow Duration Series in Southern British Columbia, Canada. National Science Foundation of the U.S. Doctoral Improvement Grant, (P.I. with D. LeBoutillier)	\$ 7,558
1987	`Effect of ENSO Events upon the Hydrology of South America. National Science Foundation of the U.S. (Co P.I. with C. Caviedes)	\$ 40,735
	`Geographic applications of IBM vector processor. Northeastern Regional Data Center (P.I. with D. LeBoutillier)	\$ 1,450
1986	`Frost Probabilities in Florida. University of Florida Division of Sponsored Research	\$ 1,920
	University of Florida Division of Sponsored Research	\$ 773
	University of Florida Institute of Food and Agricultural Science	\$ 250
	University of Florida College of Liberal Arts and Science	\$ 550
1984	`Flooding in Western and Central Canada. National Science and Engineering Research Council of Canada (N.S.E.R.C.) Two Year Operating Grant Deans Discretionary Grant University of Saskatchewan	\$ 26,000 \$ 220
1983	`Flooding in Western and Central Canada. N.S.E.R.C. One Year Operating Grant	\$ 8,729
	`Analysis of Extreme Cold Temperatures in Saskatchewan. N.S.E.R.C. University of Saskatchewan Presidents Award	\$ 1,890
	Deans Discretionary Grant University of Saskatchewan	\$ 200
1979	McMaster University Science and Engineering Research Board	\$ 500

TEACHING GRANTS:

- 2006 Center for Institutional Technology, University of Florida Modernize the content of Physical Geography Lab course (Co. P.I.) \$10,000
2003 Grant from International Programs, University of Florida for proposal to Internationalize the content of GEO 3280 Principles of Geographic Hydrology. \$ 3,000

RESEARCH CONTRACTS:

- 2011 South African Regional Environmental Program. UF sub-contract with Chemonics International Inc., contracted to USAID \$268,000
1992 'Estimation of Maximum Likely Flood in Boreal Regions. Atria Engineering and Hydraulics, Mississauga, Ontario, Canada. (for Canadian Electricity Generating Association.) \$ 13,000
1989 'Global Climate Change and the Stochastic Properties of Temperature Variables. National Sciences and Engineering Research Council of Canada, (through McMaster University) \$ 3,000
1989 Analysis of Streamflow in the Ontario Arctic Watershed. McMaster University Technology Assessment of Subarctic Ontario. \$ 4,592

DOCTORAL THESES SUPERVISED:

- CAÑAS, Carlos.
University of Florida,
2012
'From Lowlands to Highlands, from Regional Climate to Freshwater Fisheries: Hydroclimatology and Fish Species Richness in Southeastern Peru.'
(Director, Fisheries Development and Management, Wildlife Conservation Society Andes-Amazon Project, Lima, Peru)
ENGSTROM, Johanna, 2016
'Drivers of Precipitation and Streamflow Variability in the Southeastern US.'
(Research Associate, Department of Geography, University of Alabama)
HARRISON, J. Michael.
'The Modeling of Daily Precipitation in Costa Rica.'
University of Florida, 1998
(Assistant Professor, University of Southern Mississippi)
HOYOS, Natalia.
'Spatial and Temporal Patterns of Soil Erosion Potential in a Mountainous Tropical Watershed, Central Andean Cordillera of Colombia.'

University of Florida, 2004
(Assistant Professor, University of Antioquia, Medellín, Colombia)

KEELLINGS, David
Investigating Heatwaves in Europe and Florida Using Extreme Value
Analysis University of Florida, 2015
(Post-doctoral Fellow, Emerging Pathogens Institute and Department of Geography,
University of Florida)

LEBOUTILLIER, David.
`Stochastic Analysis of Flow Duration Curves in British Columbia,
Canada. University of Florida, 1990.
(Assistant Professor, Indiana State University)

LEDESMA, Rene.
`Effects of Reservoir Sedimentation and the Economics of Watershed Management:
Case of Aguacate Dam, Dominican Republic.
University of Florida, 1996
(Ministry of Natural Resources, Dominican Republic)

MARSIK, Matthew. (Co-Chair)
Incorporation of Land Use Change into a Spatial Distributed
Hydrologic Model University of Florida, 2008
(Post-doc, School of Urban Hydrology, University of Washington, Seattle)

MONZÓN-ALVARADO, Claudia, (Co-Chair)
Governance of Fire Management in Calakmul, Mexico: Institutions, Local
Practice and Human- environmental Outcomes.
University of Florida 2014
(Cátedra de Conacyt, Ecosystem Services Observatory, El Colegio de la Frontera Sur,
Chiapas, Mexico)

NNAJI, Austine.
Climate Variation in the Sub-Saharan Region of West Africa: A Study of Rainfall Variation
in Northern Nigeria.
University of Florida, 1999
(Assistant Professor, Tenure track, Valdosta State University, Georgia.)

OWUSU, Kwadwo.
Changing Rainfall Climatology of West Africa. Implications for Rainfed Agriculture in
Ghana and Water Sharing in the Volta Basin.
University of Florida, 2009
(Lecturer, Department of Geography, University of Ghana, Legon, Accra)

STAUB, Caroline (Co-chair)

Hydroclimate processes on small islands: Linkages between climate, human activity and water availability in Mauritius

University of Florida, 2015

(Post-doctoral Fellow, Department of Food and Resource Economics, Institute of Food and Agricultural Sciences, University of Florida)

SWETT, Robert.

Spatial and Temporal Characteristics of Runoff Processes on a Puerto Rican Watershed Representative of the Humid Montane Tropics.

University of Florida, 1999

(Sea Grant Program, College of Agriculture and Life Sciences, University of Florida)

TSAI, Huiping (Co-chair)

A spatial-temporal analysis of vegetation change, land cover change, and health impacts in Florida.

University of Florida, 2012

(Post-doc Center for Environmental Restoration and Disaster Reduction (CERDR), National Chung Hsing University, Taiwan)

WANG, Ying (Co-chair)

Spatio-temporal modeling for peak events of seasonal influenza – A case study in Florida.

University of Florida, 2014

(Demographer, Bureau of Economic and Business Research, University of Florida)

ZORN, Matthew

Effects of El Niño-Southern Oscillation on Monthly Stream Flows in Florida.

University of Florida, 1997

(Assistant Professor, Carthage College, Kenosha, Wisconsin)

MASTERS THESES SUPERVISED:

ADKINS, Sally.

Impact of Atlantic and Pacific Sea Surface Temperature Anomalies on the Magnitude and Timing of Annual Floods in Northern Florida.

M.S. (University of Florida), 2004

(Director, Gainesville Clean Water Partnership, Public Works Department, City of Gainesville)

BRIGHT, Blaise.

El Niño-Southern Oscillation Events and Annual Flood Characteristics along the Argentine Andes.

M.S. (University of Florida),

1991 (Retail Management)

CAÑAS, Carlos.

‘Analysis of Hydrologic Regime and Catfish Larval Drift in Madre de Dios Rivers, Southeastern Peru.’

M.S. (University of Florida),
2007 (Ph.D. Program, University
of Florida)

CAPPS HERRON, Holli

‘Changing Characteristics of
extreme rainfalls in Ghana.’

M.S. (University of Florida),
2021

Ph.D. Program, University of
Florida)

CODY, Carol.

‘A Regional Analysis of Trends in Florida Temperatures, 1933-1992.

M.S. (University of Florida), 1993
(GIS Analyst, Environmental Protection Agency)

COLEY, David.

‘Forecasting Seasonal Streamflow/Precipitation on the Peace River at Arcadia, FL.
Conditioned upon Pacific-Atlantic Sea Surface Temperatures,

M. S. (University of Florida),
2003 (GIS Specialist, City of
Gainesville)

DEANE, Amy.

‘Statistical Analysis of Biologically Important Rainfall Events in North Central Chile.

M.S. (University of Florida), 1999
(Ph.D. Program, Indiana State University)

FRANKLIN, Ross.

‘Spatial Correlation of Daily Rainfall in Central Florida.

M.S. (University of Florida), 1991
(Environmental Planner, Florida Mineral Products)

GEORGE, R., Kyle.

‘Influence of the El Niño/Southern Oscillation Phenomenon on River Discharge in Costa
Rica.

M.A.L.A.S. (University of Florida), 1996
(U.S. Military Intelligence Foreign Areas Officer - Chilean War College)

GESSLER, R. Darren.

‘Precipitation Variability Over Ecuador Associated with the El
Niño/Southern Oscillation. M.Sc. (University of Florida), 1995.

GRAHAM, Douglas,

'The Samuel Dam: Land Use, Soil Erosion and Sedimentation in Amazonia.

M.A. (University of Florida),

1987. (Ph.D. program, University
of Wisconsin)

HEY, Mervin.

'Statistical Analysis of Daily Hail- and Thunder-storm Occurrences in Southern
Saskatchewan. M.Sc. (University of Saskatchewan), 1985.

(National Hydrologic Research Institute, Saskatoon, Canada)

HILFIKER, Stephen.

'Dates of First Freezes as Indicators of Subsequent Winter Severity in Florida.

M.A. (University of Florida), 1990.

(Environmental Auditor, Winsco Engineering,
Naples, Florida)

KEELLINGS, David.

The Stochastic Properties of High Daily Temperatures.

M.S. (University of Florida), 2010. (Ph.D. Program University of Florida)

KONG, Weiyu

'ENSO and the Covariance of Annual Rainfalls in the Arenal and Tempisque Basins, Costa
Rica. '

M.S. (University of Florida),

2014. (GIS Private Industry)

LEBOUTILLIER, David.

'Stochastic Structure of Cold Spells in Southern

Saskatchewan. M.Sc. (University of Saskatchewan),
1985.

(Ph.D. program, University of Florida)

MARSIK, Matt.

'Simulation of Flooding Responses to Land Cover Change in the Quebrada Estero
Watershed, San Ramón, Alajuela, Costa Rica.'

M.S. (University of Florida),

2003. (Ph.D. Program, University
of Florida)

OWUSU, Kwadwo.

'Analysis of Rainfall Variability: Sub-humid Ghana.'

M.S. (University of Florida),

2004. (Ph.D. Program, University
of Florida)

SCHARFF, Timothy.

`Statistical Analysis of a Mid-Winter Singularity in Florida. M.Sc. (University of Florida), 1989.

(Data Acquisition and Management, South Florida Water Management District, West Palm Beach, Florida)

SZYNISZEWSKA, Anna.

Variability of Daily Rainfalls in Central Thailand.

M.S. (University of Florida),

2009 (Ph.D. Program, University of Florida)

TAPLEY, Thomas, Jr.

`The Annual Precipitation of Western Peru and the Influence of the El Niño-Southern Oscillation Phenomenon.

M.Sc. (University of Florida), 1988.

(Ph.D. program, The Johns Hopkins University, Baltimore, Maryland)

WALSH, Lisa-Ann G. (Co-Chair)

Geomorphic Evaluation of Cross-sections in the Kissimmee River, Florida, 1928-1960. M.Sc. (University of Florida), 2011

(Planner Marion County)

TEACHING RECORD:

University of Saskatchewan

Year	Course Title	Enrolment
1982-83:	Introductory Physical Geography (Geog. 110.6)	80
	Glacial Geomorphology (Geog. 236.3)	90
	Advanced Geomorphology (Geog. 435.6)	7
1983-84:	Introductory Physical Geography (Geog. 110.6)	78
	Geography of Water (Geog. 470.6)	4
	Spatial Analysis I. (Geog. 801.3)	10
	Advanced Hydrology I. (Geog. 827.3)	7
	Advanced Hydrology II. (Geog. 828.3)	3
	Readings Course (Geog. 898.6)	1
1984-85:	Principles of Fluvial Systems (Geog. 325.3)	18
	Geography of Water (Geog. 425.3)	8

Spatial Analysis I. (Geog. 801.3) 10
Departmental Seminar Series (Geog. 990.3)

University of Florida

Year	Course Title	Enrolment
1985-86	Physical Geography (Geo. 2200)	125
	Physical Geography (Geo. 2200)	65
	Advanced Physical Geography (Geo. 4201)	12
	Selected Topics in Geography (Geo. 4938)	1
	1986 Summer: Physical Geography (Geo. 2200)	109
	1986-87: Physical Geography (Geo. 2200)	189
	Introductory Quantitative Methods (Geo. 3162)	30
	Introductory Quantitative Methods (Geo. 6938)	5
	Principles of Geographic Hydrology (Geo. 3280)	20

Physical Geography (Geo. 2200. Honors Section)	17
Seminar on Land and Water Utilization (Geo 6356)	4
1987 Summer:	
Physical Geography (Geo. 2200)	238
Selected Topics in Geography (Geo. 4938)	2
1987-88:	
Physical Geography (Geo. 2200)	8
Models in Geographic Hydrology (Geo. 4280)	2
Introductory Quantitative Methods (Geo. 3162)	40
Introductory Quantitative Methods (Geo. 6938)	2
Principles of Geographic Hydrology (Geo. 3280)	12
1988 Summer:	
Physical Geography (Geo. 2200)	132
Selected Topics in Geography (Geo. 4938)	2
1988-89:	
Physical Geography (Geo. 2200, Honors section)	15
Introductory Quantitative Methods (Geo. 3126)	43
Introductory Quantitative Methods (Geo. 6938)	3
Principles of Geographic Hydrology (Geo. 3280)	16
Models in Geographic Hydrology (Geo. 4285)	5
Selected Topics in Geography (Geo. 6938)	2
Individual Research (Geo. 5905)	1
1989 Summer	
Physical Geography (Geo. 2200)	108
Selected Topics in Geography (Geo. 4938)	1
1989-90	
Physical Geography (Geo. 2200. Honors section)	18
Introductory Quantitative Methods (Geo. 3126)	43
Introductory Quantitative Methods (Geo. 6938)	3
Principles of Geographic Hydrology (Geo. 3280)	26
Individual Research (Geo. 5905)	1
1990 Summer:	
Physical Geography (Geo. 2200)	103
Selected Topics in Geography (Geo. 4938)	2
1990-91:	

Introductory Quantitative Methods (Geo. 3126)	27
Introductory Quantitative Methods (Geo. 6938)	2
Principles of Geographic Hydrology (Geo. 3280)	20
Introductory Physical Geography (Geo. 2200, Honors Section)	25
1993-94:	
Principles of Geographic Hydrology (Geo. 3280)	10
Selected Topics in Geography (Geo. 6938)	3
Introductory Physical Geography (Geo. 2200, Honors Section)	24
Models in Geographic Hydrology (Geo. 4285)	8
Physical Geography (Geo. 2200)	132
1994 Summer:	
Physical Geography (Geo. 2200)	35
Selected Topics in Geography (Geo. 6938)	7
1994-95:	
Principles of Geographic Hydrology (Geo. 3280)	9
Selected Topics in Geography (Geo. 6938)	3
Introductory Physical Geography (Geo. 2200, Honors Section)	24
Physical Geography (Geo. 2200)	151
1995 Summer:	
Physical Geography (Geo. 2200)	131
Selected Topics in Geography (Geo. 4905)	1
1995-96:	
Principles of Geographic Hydrology (Geo. 3280)	12
Selected Topics in Geography (Geo. 6938)	2
Physical Geography (Geo. 2200)	161
Physical Geography (Geo. 2200)	142
Selected Topics in Geography (Geo. 6938)	3
1996 Summer:	
Physical Geography (Geo. 2200)	143
Selected Topics in Geography (Geo. 6938)	1
1996-97:	
Principles of Geographic Hydrology (Geo. 3280)	30
Selected Topics in Geography (Geo. 6938)	9
Physical Geography (Geo. 2200)	160
Physical Geography (Geo. 2200)	135

1997 Summer:	
Introductory Quantitative Analysis for Geographers (Geo. 3162)	38
1997-98:	
Principles of Geographic Hydrology (Geo. 3280)	26
Selected Topics in Geography (Geo. 6938)	1
Physical Geography (Geo. 2200)	162
Physical Geography (Geo. 2200)	150
Honors Thesis (Geo.4970)	1
Individual Work (Geo. 4905)	1
1998-99:	
Physical Geography (Geo. 2200)	150
Introductory Quantitative Analysis for Geographers (Geo. 3162)	35
Selected Topics in Geography (Geo. 6938)	4
Principles of Geographic Hydrology (Geo. 3280)	35
Physical Geography (Geo. 2200)	143
1999 Summer:	
Physical Geography (Geo. 2200)	150
1999-2000:	
Physical Geography (Geo. 2200)	182
Selected Topics in Geography (Geo. 6938)	4
Principles of Geographic Hydrology (Geo. 3280)	15
Physical Geography (Geo.2200)	109
Honors Thesis (Geo.4970)	1
Individual Work (Geo. 4905)	1
Models in Geographic Hydrology (Geo. 4285)	6
2000 Summer:	
Physical Geography (Geo. 2200)	149
Selected Topics in Geography (Geo 6938)	1
2000-2001:	
Physical Geography (Geo. 2200)	158
Selected Topics in Geography (Geo. 6938)	2
Principles of Geographic Hydrology (Geo. 3280)	18
Physical Geography (Geo. 2200)	270
Individual Work (Geo. 4905)	1
Models in Geographic Hydrology (Geo. 4285)	3
Selected Topics in Geography (Geo. 6938)	5

2001 Summer:	
Geography (Geo. 2200)	122
Selected Topics in Geography (Geo 6938)	1
2001-2002:	
Physical Geography (Geo. 2200)	145
Principles of Geographic Hydrology (Geo. 3280)	27
Selected Topics in Geography (Geo. 6938)	1
Physical Geography (Geo. 2200)	285
Models in Geographic Hydrology (Geo. 4285)	3
Selected Topics in Geography (Geo. 6938)	1
2002 Summer:	
Physical Geography (Geo. 2200)	103
2002-2003:	
Physical Geography (Geo. 2200)	149
Principles of Geographic Hydrology (Geo. 3280)	40
Selected Topics in Geography (Geo. 6938)	1
Physical Geography (Geo. 2200)	252
Global Impacts of El Niño (Geo. 3930 Honors Section)	5
2003 Summer:	
Physical Geography (Geo. 2200)	130
Selected Topics in Geography (Geo 6938)	3
2003-2004:	
Physical Geography (Geo. 2200)	143
Principles of Geographic Hydrology (Geo. 3280)	30
Physical Geography (Geo. 2200)	240
Models in Geographic Hydrology (Geo. 4285)	2
Selected Topics in Geography (Geo. 6938)	4
2004 Summer:	
Physical Geography (Geo. 2200)	146
2004-05:	
Principles of Geographic Hydrology (Geo. 3280)	28
Physical Geography (Geo. 2200)	245
2005-06:	
Principles of Geographic Hydrology (Geo. 3280)	24

Selected Topics (Geo. 6938)	4
Physical Geography (Geo. 2200)	176
2006-07:	
Principles of Geographic Hydrology (Geo. 3280)	19
Selected Topics (Geo. 6938)	2
Physical Geography (Geo. 2200)	143
2007-08:	
Principles of Geographic Hydrology (Geo. 3280)	17
Physical Geography (Geo. 2200)	162
2008-09:	
Principles of Geographic Hydrology (Geo. 3280)	20
Physical Geography (Geo. 2200)	190
2009-10:	
Principles of Geographic Hydrology (Geo. 3280)	17
Physical Geography (Geo. 2200)	187
2010-11:	
Principles of Geographic Hydrology (Geo. 3280)	25
Physical Geography (Geo. 2200)	165
2012 Summer:	
Physical Geography (Geo. 2200) – on line	107
2012-13:	
Physical Geography (Geo. 2200)	45
Principles of Geographic Hydrology (Geo 3280)	17
Physical Geography (Geo. 2200)	73
2013 Summer	
Physical Geography Lab, (Geo. 2200.1)	43
2013-14:	
Physical Geography (Geo. 2200)	34
Principles of Geographic Hydrology (Geo 3280)	12
Physical Geography (Geo. 2200)	63
Models in Geographic Hydrology (Geo 4285)	2
2014 Summer	
Physical Geography (Geo. 2200)	18

2015	
Physical Geography (Geo 2200)	25
Physical Geography (Geo 2200)	38

University of Waterloo

1991-92:	
Geographic Hydrology (Geog 303)	22
Statistical Hydrometeorology (Geog 403)	3
Quantitative Methods II (Environmental Studies 278)	203
Introductory Physical Geography (Geog 102)	211
1992-93:	
Quantitative Methods II (Environmental Studies 278)	50
Introductory Physical Geography (Geog 102)	173
Honors Undergraduate Thesis (Geog 491)	1
Geographic Hydrology (Geog 303)	17
Quantitative Methods II (Environmental Studies 278)	10

PROFESSIONAL ORGANIZATIONS:

American Association for the Advancement of Science	Member since 1998
American Institute of Hydrology	Member since 1998
Florida Society of Geographers	Member since 1998
Southeastern Geographers	Member since 2005

COMMITTEE WORK:

University of Saskatchewan

College:	Social Science A Department:
	Undergraduate
e	Graduate (Vice-Chairman)
	Computers and Research (Chairman)
	Visiting Speakers (Chairman)
	Faculty Search Personnel Committee (elected)

University of Florida

University:	Member of University Committee to establish new General Education course in Environmental Science.
	Member Climate Institute Planning Committee

Member, Internal Research Advisory Committee, Emerging Pathogens Institute Member of the University General Education Councils Focus Group on General Education
Teaching and Advising Awards Committee
Organizing Committee – Climate Variability and Climate Change, Symposium “Sustainable Water Resources: Florida Challenges, Global Solutions.” Water Institute, University of Florida

College: Associate Dean 2014 -18
Teaching and Advising Awards Committee
Ruth McQuown Fellowship Selection Committee
Travel Committee
Faculty Sabbatical Leaves
Deans Advisory Council
Search Committee for Associate Dean
Chair Search Committee, Department of Anthropology
Chair Search Committee, Department of Botany
Salary Plan for Professors Review Committee
Chair of Social and Behavioral Sciences Chairs Committee
Chair Search Committee, Department of Political Science
Tenure and Promotion Committee

Department: Chair (2004- 2011)
Graduate Coordinator (1987-91, 1994-1998)
Chair, Medical Geography Search Committee
Chair, Steering Committee
Chair web-site committee
Chair Faculty Merit Increase Committee
Coordinator Liaison with Innovation Hub
Computer and Data Processing (Chairman)
Organizer of Departmental Seminar Series
Executive Committee (elected)
Chair Search
Cartographer Search and Screen (Chairman)
Faculty Search and Screen (Chairman)
Faculty Salary Bonus Award Committee
Undergraduate Committee

Teaching Improvement Program Award Selection
Committee Professorial Excellence Program Award
Selection Committee Sustained Performance
Evaluation Program (Chairman) Instrument for Peer
Teaching Evaluation
STEP Salary Adjustment Program
(Chairman) Ryan Poehling Fellowship
(Chairman)
SPPP Award (Chairman)
Junior Faculty Mentor
Graduate Teaching Assistant
Mentor University of Waterloo
University: College representative to Mathematics Council

Departmental: Waterloo author of joint University of
Waterloo/Wilfrid Laurier University graduate
program submitted to the Ontario Council of
Graduate Studies, 1992.
Graduate
Computers

SERVICES TO DISCIPLINE:

- 2015: External Masters Committee member Department of Geography,
University of Alabama External reviewer for promotion to Associate
Professor, Texas A& M University
- 2013: External reviewer for promotion to Associate Professor, University of
Wisconsin, Milwaukee. 2011: External reviewer for promotion to Full
Professor, McMaster University, Canada.
External reviewer of grant proposal. National Science Foundation. *Geography and
Spatial
Sciences*
- 2010: External reviewer Department of Environment, Geography and Geological
Sciences, Lehmann College, CUNY.
- 2009: Co-organizer Annual Meeting of the Florida Association of Geographers, St
Augustine, Florida, January
- 2008: Participant Sea Grant Strategic Planning Workshop, St. Petersburg, Fl.
External reviewer for promotion to Full Professor, University of the West Indies, St.
Augustine Campus, Trinidad and Tobago.

- 2007: Chair of Session at Southeastern Division of American Association of Geographers Meeting, Charleston, South Carolina.
- 2006: External Reviewer, Early Research Awards Program, Ministry of Research and Innovation, Government of Ontario, Canada.
Chair of Session at Florida Society of Geographers Meeting, St. Petersburg, Florida.
- 2005: External Reviewer for promotion to Associate Professor and tenure, Department of Geography, University of Oklahoma.
External Reviewer for promotion to Associate Professor and tenure, Department of Environmental Sciences, University of Richmond.
External Reviewer for promotion to Associate Professor and tenure, School of Geography and Earth Sciences, McMaster University, Canada.
- 2004: Organizer of 3 sessions at the Florida Society of Geographers honoring the career of Professor César Caviedes.
- 2003 Member International Organizing Committee, International Geographical Unions Commission for Water Sustainability Meeting, Yerevan, Armenia.
- 2000: External Reviewer of applicants to position at Climate Research Division, Scripps Institute of Oceanography, La Jolla, California.
External Reviewer of grant proposal. National Science Foundation. *Hydrologic Sciences*.
- 1999: External Reviewer The Inter-American Institute for Global Change Research reviewing proposals submitted under the Program to Expand Scientific Capacity in the Americas (PESCA) program.
External Ph.D. Examiner, “*Annual Runoff Variability in a Global Context*” Department of Geography and Environmental Studies, University of Melbourne, Australia.
External Reviewer of grant proposal. National Science Foundation. *Earth Sciences - Geology and Paleontology*.
Chair of paper session, Florida Society of Geographers, Annual Meeting, Gainesville, Florida. Chair of Session, Downscaling from General Circulation Models. International Geographical Union Meeting - Environmental Change and Hydrologic Extremes - Aberystwyth, Wales.
External Reviewer of grant proposal. National Science Foundation. *Hydrologic Sciences*.
External Reviewer of grant proposal. National Science Foundation. *Atmospheric Sciences*.

1998: External Reviewer of grant proposals (2), National Oceanic and Atmospheric Administration

Human Dimensions and Economic Impact of Climate Change Program.

External Reviewer of grant proposals. National Science Foundation/Environmental Protection Agency *Water and Watersheds.*

Reviewer of *Great Systems and Global Environments: A Physical Geography of Earth.* By William Marsh, published by W.H. Freeman and Co., New York.

External Reviewer of grant proposal. National Science Foundation. *Hydrologic Sciences.*

Chair of Session at International Geographical Union Meeting - Environmental Change and Hydrologic Extremes - Lisbon, Portugal.

Panel Member The Inter-American Institute for Global Change Research reviewing proposals submitted under the Collaborative Research Network (CRN) program.

External Reviewer of grant proposal. National Science Foundation. *Geography and Regional Science.*

External Reviewer of Full Professor Promotion- University of Melbourne, Australia.

1997: External Reviewer of grant proposal, National Oceanic and Atmospheric Administration *Human Dimensions and Economic Impact of Climate Change Program.*

External Reviewer of grant proposals. National Science Foundation/Environmental Protection Agency *Water and Watersheds*

.Co-chair Water Resources Working Group, "Es éste el Niño del Siglo?"

International Research Institute for Climate Prediction - NOAA. Symposium on Potential Uses of Seasonal and Interannual Forecasts and the 1997-98 El Niño, Lima, Peru.

1996: National Science Foundation/Environmental Protection Agency Panelist. *Water and Watersheds.*

Grant proposals.

Co-chair Water Resources Working Group, National Oceanic and Atmospheric Administration - Inter American Institute Symposium on Impact of Climatic Variability in Meso-America. Washington, D.C.

1995: External reviewer of annual reports. Department of Geography, University of South Florida.

Chair of session at International Research Institute for Climate Prediction - NOAA Symposium, Santa Fe, Argentina.

1994: External reviewer of annual reports. Department of Geography, University of South Florida. 1992: Reviewer for grant proposal to Natural Environment Research Council, U.K.

Chair of working group on Global Hydrology for INQUA Commission into Global

Continental
Palaeohydrology.

- 1991: Member of the Science Management Audit group of the Institute of Hydrology, Natural Environment Research Council of the United Kingdom.
- 1990: Reviewer for Florida Water Resources Research Center grant proposals. 1988: Reviewer for National Science Foundation grant proposals.
Program Committee of 1991 A.A.G. Meetings, Miami.
Reviewer for Florida Water Resources Research Center grant proposals.
- 1987: Organizer of session "Advances in Quantitative Physical Geography." Canadian Association of Geographers, Annual Meeting, Hamilton, Ontario.
- 1986: Reviewer of "Floods in Cold Regions." by M. Church in Floods, Climate and Landscape, editor
P.C. Patton.
- 1985: Invited contribution to Area on "Impressions of the I.B.G. meetings at Leeds." 1984: Reviewer of National Science and Engineering Research Council grant.
- 1983: University of Saskatchewan Member At Large to Prairie Division of Canadian Association of Geographers.

EDITORIAL BOARDS:

Revista Meteorologica, Meteorological Journal of the Argentinean Meteorological Service, Buenos Aires, Argentina. 1995-1998
Avances en Recursos Hidráulicos, Univesidad Nacional de Colombia, Medellín, Colombia. 2001-04
Hydrological Processes, Wiley, UK. 2010-
Resources: Natural Resources and Management, 2011-

BOOK REVIEW:

"Beyond El Niño: Decadal and Interdecadal Climate Variability." ed A. Navarro, Springer, Berlin,
Geographical Journal

REVIEWS FOR:

African Journal of Agricultural Research
African Journal of Environmental Science and

Technology American Water Resources Bulletin.
Annals of the Association of American
Geographers. Canadian Geographer.
Canadian Journal of Earth
Sciences. Catena.
Climate Research
Climatological Bulletin.
Earth Interactions
Environmental
Management.
Environmental Monitoring and
Assessment Geographical Analysis
Geographical
Research Geology
Geophysical Research Letters
Geoscience Data Journal
Hydrological Processes
International Journal of Agricultural Economics and
Extension International Journal of Climatology
International Journal of Water Resources and Environmental
Engineering Investigaciones Geograficas
Journal of American Water Resources
Association Journal of Applied Meteorology
and Climatology Journal of Climate.
Journal of Hydrologic
Engineering. Journal of
Hydrology
Journal of Hydrometeorology
Journal of Statistical Computation and
Simulation Journal of Water Management
and Planning
Land
Mitigation and Adaptation Strategies for Global
Change Nature
Perspectiva
Geografica
Physical
Geography.
Proceedings of the National Academy of
Sciences Professional Geographer
Remote Sensing
Revista
Meteorologica
Southeastern
Geographer Water

International
Water Resources Research.

PUBLIC AND COMMUNITY CONTRIBUTIONS:

- 2009: Unpaid consultant to BBC on documentary dealing with ENSO and civilization 2005: Interview on WJCB-TV, Gainesville, on Hurricane Season Forecasts.
- 2004: Interview on Mid-Florida Public Radio WJCT concerning El Niño
Interview on WUFT, National Public Radios “Environment Florida” concerning El Niño 2001: Member of Florida Advisory Board, Physicians for Social Responsibility
- 1998: Interview on WJCB-TV, Gainesville, on El Niño and winter storms in Florida Interview on WESH-TV, Orlando, on El Niño and hydro-electric power.
Interview on WOGX-TV, Gainesville, on El Niño and winter storms in Florida Interview On WRUF Radio, Gainesville, on summer hurricane season Interview On WRUF Radio, Gainesville, on outlook for summer flooding
Interview on WUFT-TV, “North Florida Journal” on the factors affecting the number of summer hurricanes.”
Interview on WUFT-TV, El Niño, La Niña and the summer hurricane season Interview on WJCB-TV, La Niña and the summer hurricane season.
Interview on WJCB-TV, La Niña and hurricane Georges.
- 1997: Interview on Radio Red, Mexico City, on El Niño and hydro-power “Weather model can save global energy” Independent Florida Alligator, Gainesville Interview in Northwest Florida Daily News, Fort Walton Beach, on El Niño Interview on WJCB-TV, Gainesville, on El Niño and hurricanes
Interview on WUFT-TV, Gainesville, on El Niño and hydro-electric power Interview on WRUF-AM, Gainesville, on El Niño and hydro-electric power Interview on WUFT-FM, Gainesville, on El Niño and hydro-electric power
“Forecasting El Niño Could Save Millions in Energy Costs”, University Science News, November.
- 1995: Interview on WUFT-TV, Gainesville, on hurricane season 1994: Interview in Ocala Sentinel on weather.
Interview in CLAS Notes on El Niño.
- 1993: Interview on WUFT-TV, Gainesville on cold spells.

- 1991: Interview on WUFT-TV, Gainesville on flooding on the Suwannee and Santa Fe Rivers.
Interview in Lakeland Ledger on probabilities of dates of first and last freezes. Interview on Canadian Broadcasting Corporation, Saskatchewan on El Niño.
- 1990: Interview on WRUF-A.M., Gainesville, on tropical storms.
Interview in Lakeland Ledger on severe freeze research.
- 1988: Review of frost research in "Frost Protection" edition of Citrus and Vegetable Grower, October.
Review of frost research in The Record., December
"Frost Prediction." presentation to Polk County Citrus Growers Association, Lake Alfred, Florida. "A 22-Year Cycle of Killer Frosts." in Florida Trend, Business Magazine. March.
- 1987: "Scientist can now predict freezes." Independent Florida Alligator, Gainesville.
Interview on WCJB T.V., Gainesville, on frost prediction.
- 1983: "Probability of a Major Storm." Farm Light and Power, October.
Consultant to Saskatchewan Government Insurance Company, Regina, Saskatchewan, Canada. Interview with Canadian Broadcasting Corporation Radio, Saskatchewan on extreme precipitation.