

# Andres Camilo Rey-Sanchez

Assistant Professor

Department of Marine, Earth and Atmospheric Sciences

North Carolina State University

[https://www.researchgate.net/profile/A\\_Camilo\\_Rey-Sanchez](https://www.researchgate.net/profile/A_Camilo_Rey-Sanchez)

<https://www.linkedin.com/in/camiloreysanchez/>

<https://github.com/Camilo-Rey>

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## EDUCATION

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<b>Ph.D. in Environmental Science</b> The Ohio State University, Columbus, OH Advisor: Dr. Gil Bohrer	12/2018
<b>M.S. in Civil Engineering</b> The Ohio State University, Columbus, OH Advisor: Dr. Gil Bohrer	08/2018
<b>B.S. in Forest Engineering</b> District University of Bogotá, Colombia Advisor: Dr. Carlos F. Garcia Olmos	04/2011

## ACADEMIC EMPLOYMENT HISTORY

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<b>Assistant Professor.</b> North Carolina State University	08/2021-present
<b>Postdoctoral Scientist.</b> University of California, Berkeley Supervisor: Dr. Dennis Baldocchi	01/2019-06/2021
<ul style="list-style-type: none"><li>• Led cross-disciplinary collaborations to build and test models of atmospheric boundary layer height data with radar wind profilers</li><li>• Developed a novel footprint analysis for detection of hotspots of greenhouse gases around eddy-covariance towers</li><li>• Validated evaporation estimates from NASA's ECOSTRESS satellite using eddy-covariance flux data</li><li>• Processed and analyzed data from eddy-covariance towers in natural and constructed wetlands for multiple collaborative projects</li></ul>	
<b>Research Assistant.</b> The Ohio State University Supervisor: Dr. Gil Bohrer	08/2014-12/2018
<ul style="list-style-type: none"><li>• Collected, processed, and analyzed data on greenhouse gas exchange in US wetlands and lakes for multiple collaborative projects</li><li>• Implemented artificial neural network models to improve predictions of gas exchange based on commonly measured environmental drivers</li></ul>	

- Reported research results in multiple peer-reviewed journals and communicated research findings in multiple events across the USA and internationally

**Co-instructor, Applied Hydrology.** The Ohio State University  
Supervisor: Dr. Gil Bohrer

08/2017-12/2017

- Lectured students on the following topics: flood routing methods, flows in unsaturated media, infiltration theory, runoff theory, hydrograph creation, well hydraulics, evaporation, transpiration, and interception
- Assisted students in the creation of hydrology projects applied to environmental engineering
- Developed lecture material, delivered lectures, created exam questions, proctored exams, and assisted students in office hours

**Research Assistant.** University of El Rosario  
Supervisor: Dr. Juan Posada

06/2010-07/2011; 04/2013-07/2014

- Developed high-power LED lamps of variable spectrum for plant physiology experiments in a multidisciplinary team environment
- Performed measurements and calibrations of multiple radiation sensors
- Analyzed data on plant light use efficiency resulting in one publication

**Research Assistant.** Smithsonian Tropical Research Institute  
Supervisors: Dr. Stefan Schnitzer and Dr. Leonor Álvarez

01/2013-03/2013

- Performed measurements of sap flux in lianas and tree species
- Programmed data loggers and collected field data

**Research Assistant.** Smithsonian Tropical Research Institute  
Supervisors: Dr. Kaoru Kitajima and Dr. Martijn Slot

08/2011-12/2011; 07/2012-03/2013

- Collected and analyzed data on leaf temperature and incident radiation on leaves in the canopy of a tropical forest
- Measured ex-situ temperature response curves of leaf dark respiration using controlled laboratory environments
- Assisted the setup and data analyses of a canopy warming experiment

**Research Assistant.** District University of Bogotá  
Supervisor: Dr. Carlos Francisco García

04/2009-04/2010

- Used HEC-HMS to model peak flows in mountainous watersheds
- Performed multiple discharge measurements to obtain stage-discharge equations
- Produced digital elevation models using ArcGIS

## AWARDS AND FELLOWSHIPS

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**The Presidential Fellowship.** The Ohio State University. 05/15/2018-12/31/2018. *The Presidential Fellowship is the most prestigious award given by the Graduate School. Recipients of this award embody the highest standards of scholarship in the full range of Ohio State's graduate programs.*

**The Fay Fellowship of the Environmental Science Graduate Program (ESGP).** The Ohio State University. 08/2014-08/2015. *This fellowship is given on an annual basis to the best applicant in the ESGP and covers one year of tuition, stipend, and fees.*

**STRI Internship.** Smithsonian Tropical Research Institute. 08/2011. *Internship for post-bachelor's graduates. The internship lasts three months and includes a monthly stipend.*

**Young Researcher Fellowship.** Science, Technology, and Innovation Agency of Colombia (COLCIENCIAS). 03/2013-03/2014. *This highly competitive award provides an annual stipend for post-bachelor's students doing research in a Colombian University.*

**Award for the Best National Score in the "Saber Pro" Test for Forest Engineering.** Bogotá, Colombia. 11/2010. *Every year, the ministry of education gives an award to the best scores of the national standardized test within each major in the country.*

**Award for 3<sup>rd</sup> best presentation in the Agricultural and Environmental Science section at the Hayes Forum.** The Ohio State University. 03/03/2017. *Understanding the role of wetlands in the carbon balance and greenhouse gas emissions of the planet: A case study in an estuarine wetland in Northern Ohio.*

**Best student presentation award.** Ohio River Basin Consortium for Research and Education 32<sup>nd</sup> Annual Symposium. 09/27-29/2016. *Carbon fluxes from an estuarine wetland in Northern Ohio.*

## PEER-REVIEWED PUBLICATIONS

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28. **Rey-Sanchez, C.,** Arias-Ortiz, A., Kasak, K., Chu, H., Szutu, D., Verfaillie, J., & Baldocchi, D. (2022). Detecting Hot Spots of Methane Flux Using Footprint-Weighted Flux Maps. *Journal of Geophysical Research: Biogeosciences*, 127(8), e2022JG006977. <https://doi.org/10.1029/2022JG006977>
27. Kong, J., Ryu, Y., Liu, J., Dechant, B., **Rey-Sanchez, C.,** Shortt, R., et al. (2022). Matching high resolution satellite data and flux tower footprints improves their agreement in photosynthesis estimates. *Agricultural and Forest Meteorology*, 316, 108878. <https://doi.org/10.1016/j.agrformet.2022.108878>
26. Baldocchi, D. D., Keeney, N., **Rey-Sanchez, C.,** & Fisher, J. B. (2022). Atmospheric humidity deficits tell us how soil moisture deficits down-regulate ecosystem evaporation. *Advances in Water Resources*, 159, 104100. <https://doi.org/10.1016/j.advwatres.2021.104100>
25. Helbig, M., Gerken, T., Beamesderfer, E. R., Baldocchi, D. D., Banerjee, T., Biraud, S. C., **Rey-Sanchez C,** et al. (2021). Integrating continuous atmospheric boundary layer and tower-

- based flux measurements to advance understanding of land-atmosphere interactions. *Agricultural and Forest Meteorology*, 307, 108509. <https://doi.org/10.1016/j.agrformet.2021.108509>
24. Irvin, J., Zhou, S., McNicol, G., Lu, F., Liu, V., Fluet-Chouinard, E., **Rey-Sanchez C.**, et al. (2021). Gap-filling eddy covariance methane fluxes: Comparison of machine learning model predictions and uncertainties at FLUXNET-CH4 wetlands. *Agricultural and Forest Meteorology*, 308–309, 108528. <https://doi.org/10.1016/j.agrformet.2021.108528>
  23. Delwiche, K. B., Knox, S. H., Malhotra, A., Fluet-Chouinard, E., McNicol, G., Feron, S., **Rey-Sanchez C.**, et al. (2021). FLUXNET-CH4: A global, multi-ecosystem dataset and analysis of methane seasonality from freshwater wetlands. *Earth System Science Data Discussions*, 1–111. <https://doi.org/10.5194/essd-2020-307>
  22. **Rey-Sanchez C.**, Wharton S., Vilà-Guerau de Arellano J, Paw U K.T., Hemes K.S., Fuentes J.D., Osuna J., Szutu D., Ribeiro J.V., Verfaillie J., Baldocchi D. (2021). Evaluation of Atmospheric Boundary Layer Height from Wind Profiling Radar and Slab Models and its Responses to Seasonality of Land Cover, Subsidence, and Advection. *Journal of Geophysical Research: Atmospheres*, 126(7). <https://doi.org/10.1029/2020JD033775>
  21. Anderson, M.C., Yang, Y., Knipper, K., Yang, Y., Gao, F., Hain, C., Kustas, W.P., Cawse-Nicholson, K., Hulley, G., Fisher, J.B., Alfieri, J.G., Meyers, T., Prueger, J., Baldocchi, D., **Rey-Sanchez, C.** (2021). Interoperability of ECOSTRESS and Landsat for mapping evapotranspiration time series at sub-field scales. *Remote Sensing of Environment*, 252, 112189. <https://doi.org/10.1016/j.rse.2020.112189>
  20. Ma, S., Eichelmann, E., Wolf, S., **Rey-Sanchez, C.**, & Baldocchi, D. D. (2020). Transpiration and evaporation in a Californian oak-grass savanna: Field measurements and partitioning model results. *Agricultural and Forest Meteorology*, 295, 108204. <https://doi.org/10.1016/j.agrformet.2020.108204>
  19. Villa, J. A., Ju, Y., Stephen, T., **Rey-Sanchez, C.**, Wrighton, K. C., & Bohrer, G. (2020). Plant-mediated methane transport in emergent and floating-leaved species of a temperate freshwater mineral-soil wetland. *Limnology and Oceanography*, 65(7): 1635–1650. <https://doi.org/10.1002/lno.11467>
  18. Baldocchi, D. D., Ryu, Y., Dechant, B., Eichelmann, E., Hemes, K., Ma, S. **Rey-Sanchez C.**, et al. (2020). Outgoing Near-Infrared Radiation From Vegetation Scales With Canopy Photosynthesis Across a Spectrum of Function, Structure, Physiological Capacity, and Weather. *Journal of Geophysical Research: Biogeosciences*, 125(7), e2019JG005534. <https://doi.org/10.1029/2019JG005534>
  17. Liu, J., Zhou, Y., Valach, A., Shortt, R., Kasak, K., **Rey-Sanchez, C.**, et al. (2020). Methane emissions reduce the radiative cooling effect of a subtropical estuarine mangrove wetland by half. *Global Change Biology*, 26(9): 4998–5016. <https://doi.org/10.1111/gcb.15247>
  16. Russell, S. J., Vines, C. D., Bohrer, G., Johnson, D. R., Villa, J. A., Heltzel, R., **Rey-Sanchez C.**, Matthes, Jaclyn H. (2020). Quantifying CH4 concentration spikes above baseline and attributing CH4 sources to hydraulic fracturing activities by continuous monitoring at an off-site tower. *Atmospheric Environment*, 228, 117452. <https://doi.org/10.1016/j.atmosenv.2020.117452>
  15. Kasak, K., Valach, A. C., **Rey-Sanchez, C.**, Kill, K., Shortt, R., Liu, J., et al. (2020). Experimental harvesting of wetland plants to evaluate trade-offs between reducing methane

- emissions and removing nutrients accumulated to the biomass in constructed wetlands. *Science of The Total Environment*, 715, 136960. <https://doi.org/10.1016/j.scitotenv.2020.136960>
14. Grau-Andrés, R., Davies, G. M., **Rey-Sanchez, C.**, & Slater, J. (2019). Bryophyte community composition and diversity are indicators of hydrochemical and ecological gradients in temperate kettle hole mires in Ohio, USA. *Mires and Peat*, 24 (37): 1–15  
<https://doi.org/10.19189/MaP.2019.APG.StA.1783>
  13. **Rey-Sanchez, C.**, Bohrer, G., Slater, J., Li, Y.-F., Grau-Andrés, R., Hao, Y., et al. (2019). The ratio of methanogens to methanotrophs and water-level dynamics drive methane transfer velocity in a temperate kettle-hole peat bog. *Biogeosciences*, 16(16): 3207–3231.  
<https://doi.org/10.5194/bg-16-3207-2019>
  12. Villa, J. A., Ju, Y., Vines, C., **Rey-Sanchez, C.**, Morin, T. H., Wrighton, K. C., & Bohrer, G. (2019). Relationships Between Methane and Carbon Dioxide Fluxes in a Temperate Cattail-Dominated Freshwater Wetland. *Journal of Geophysical Research: Biogeosciences*, 124(7): 2076–2089. <https://doi.org/10.1029/2019JG00516>
  11. **Rey-Sanchez, C.**, & Posada, J. M. (2019). Effect of temporally heterogeneous light on photosynthetic light use efficiency, plant acclimation and growth in *Abatia parviflora*. *Functional Plant Biology*: 46(7):684–693. <https://doi.org/10.1071/FP18279>
  10. Li, X., Xiao, J., He, B., Arain, M.A., Beringer, J., Desai, A.R., Emmel, C., Hollinger, D.Y., Krasnova, A., Mammarella, I., Noe, S.M., Ortiz, P.S., **Rey-Sanchez, C.**, Rocha, A.V., Varlagin, A. (2018) Solar-induced chlorophyll fluorescence is strongly correlated with terrestrial photosynthesis for a wide variety of biomes: First global analysis based on OCO-2 and flux tower observations. *Global Change Biology*. 24:3990-4008. DOI: 10.1111/gcb.14297
  9. **Rey-Sanchez AC**, Morin T, Stefanik K, Wrighton K, Bohrer G (2018). Determining total emissions and environmental drivers of methane flux in a Lake Erie estuarine marsh. *Ecological Engineering*. 114:7-15. DOI: 10.1016/j.ecoleng.2017.06.042
  8. Morin, TH, **Rey-Sanchez AC**, Vogel CS, Matheny, AM, Kenny WT, Bohrer G. (2018). Carbon dioxide emissions from an oligotrophic temperate lake: An eddy covariance approach. *Ecological Engineering*. 114:25-33. DOI: 10.1016/j.ecoleng.2017.05.005
  7. Sanchez A, **Rey-Sanchez AC**, Posada JM, Smith WK (2018). Interplay of seasonal sunlight, air and leaf temperature in two alpine páramo species, Colombian Andes. *Agricultural and Forest Meteorology* 253:38-47. DOI: 10.1016/j.agrformet.2018.01.033
  6. **Rey-Sanchez AC**, Bohrer G, Morin TH, Shlomo D, Mirfenderesgi G, Gildor H, Genin A (2018). Evaporation and CO<sub>2</sub> fluxes in a coastal reef: Comparing eddy covariance measurements to model estimates. *Ecosystem Health and Sustainability* 3:10, 1392830. DOI: 10.1080/20964129.2017.1392830
  5. Angle J, Morin TH, Solden L, Narrowe A, Smith G, Borton M, **Rey-Sanchez AC**, Daly R, Mirfenderesgi G, Hoyt D, Riley W, Miller C, Bohrer G, Wrighton K (2017). Methanogenesis in oxygenated soils is a substantial fraction of wetland methane emissions. *Nature Communications* 8:1567. DOI:10.1038/s41467-017-01753-4
  4. Morin TH, Bohrer G, Stefanik KC, **Rey-Sanchez AC**, Matheny, AM, Mitsch WJ (2017). Combining eddy-covariance and chamber measurements to determine the methane budget from a small, heterogeneous urban floodplain wetland park. *Agricultural and Forest Meteorology* 237:160-170. DOI: 10.1016/j.agrformet.2017.01.022

3. **Rey-Sanchez AC**, Slot M., Posada J.M., Kitajima K (2016). Spatial and seasonal variation of leaf temperature within the canopy of a tropical forest. *Climate Research* 71:75-89. DOI: 10.3354/cr01427
2. Slot M, **Rey-Sanchez C**, Gerber S, Lichstein JW, Winter K, Kitajima K (2014). Thermal acclimation of leaf respiration of tropical trees and lianas: response to experimental canopy warming, and consequences for tropical forest carbon balance. *Global Change Biology* 20:2915–292. DOI: 10.1111/gcb.12563
1. Slot M, **Rey-Sanchez C**, Winter K, Kitajima K (2014). Trait-based scaling of temperature-dependent foliar respiration in a species-rich tropical forest canopy. *Functional Ecology* 28:1074-1086. DOI: 10.1111/1365-2435.12263

#### ARTICLES IN PREPARATION

**Rey-Sanchez C**, Verfaillie J., Szutu D., Mallick K., Wang T., Baldocchi D. Combining ECOSTRESS, CubeSats, and under-canopy radiation measurements for enhanced estimates of evaporation at 3 m resolution in Alfalfa and Maize fields. To be submitted to *Remote Sensing of Environment*

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#### TEACHING EXPERIENCE

**Instructor, Micrometeorology.** Department of Marine, Earth and Atmospheric Sciences. North Carolina State University. Spring 2022.

**Co-instructor, Applied Hydrology.** Department of Civil, Environmental and Geodetic Engineering. The Ohio State University. Fall 2017.

**Teaching Assistant, Applied Hydrology.** Department of Civil, Environmental and Geodetic Engineering. The Ohio State University. Fall 2016.

**Instructor, Ecophysiology: Measurements of photosynthesis using the LICOR 6400.** Introductory Course in Tropical Field Biology (Gigante Course). Smithsonian Tropical Research Institute. 10/2011.

**Teaching Assistant, Hydrology for Forest Engineering.** District University of Bogotá, Colombia. 07/2008-12/2008; 02/2009-06/2009; 02/2010-06/2010.

#### **Student Mentorship of Undergraduate Research Assistants:**

**2016-2017:** Brian Cassidy, Austin Rechner, Dominique Hadad, Anna Thompson. The Ohio State University.

**2018:** Alexa Barattucci, Tasmina Uddin, Tim Becker, Di Xu. The Ohio State University.

**2019-2020:** Katrina Cone, Lily Klinek. UC Berkeley.

**2021:** Noor Wahle, UC Berkeley

## SERVICE AND PROFESSIONAL ASSOCIATION MEMBERSHIPS

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### **Reviewer**

*Nature Communications, Agricultural and Forest Meteorology, Atmospheric Science Letters, Biogeosciences, Geophysical Research Letters, Journal of Geophysical Research: Biogeosciences (2019 Editors' Citation for Excellence in Refereeing); PlosONE; Plant Physiology; Ecological Engineering; Plant, Cell & Environment, Journal of Advances in Modeling Earth Systems (JAMES)*

### **Memberships**

- American Geophysical Union
- American Meteorological Society

### **Member of Scientific Advisory Panel**

SPRUCE (Spruce and Peatland Responses Under Changing Environments, Oak Ridge National Laboratory). 03/2020-present.

### **Review Panel Participation**

- NSF Research Experience for Undergraduate (REU) Panel. National Science Foundation. 2021
- NSF Mid-scale Research Infrastructure-2 (Mid-Scale RI-2). National Science Foundation. 2021

### **Others**

President of the Environmental Science Graduate Program Student Association. 06/2015-06/2017. *Responsibilities included leading meetings, directing goals, and organizing academic and social events.*

## SKILLS

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**Instrumentation:** eddy covariance towers, environmental monitoring systems, gas chromatography, analytical laboratory techniques, Picarro portable gas analyzer G4 series, portable photosynthesis system LICOR 6400, PreSens dissolved oxygen probes, Decagon soil moisture probes and data loggers, Maxim temperature sensors, GaAsP Hamamatsu light sensors, Omega thermocouples, Scholander pressure bomb, SAP-flow meters, and LICOR environmental sensors

**Programming:** Matlab, R, Python

**GIS applications:** ArcGIS, QGIS, AutoCAD, Google Earth Engine

**Modelling software:** HEC-HMS, HEC-GeoHMS

**Languages:** written and spoken fluency in English and Spanish

## PRESENTATIONS

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### *Invited Talks*

**Rey-Sanchez C.** Land cover heterogeneity and surface flux effects on the development of the atmospheric boundary layer. Atmospheric Chemistry Virtual Workshop. Environmental Molecular Science Laboratory. Pacific Northwest National Laboratory. October 17, 2022.

**Rey-Sanchez C.** An academic journey from forest hydrology to atmospheric sciences. Celebration of the Forest Engineer National Day. District University of Bogota. October 13, 2022.

**Rey-Sanchez C.** How do different land covers affect the height of the atmospheric boundary layer? Seminar talk at the Department of Environment and Geological Sciences. Appalachian State University. Boone, North Carolina. October 22nd, 2021

**Rey-Sanchez C,** Slater J, Hao Y, Grau-Andres R, Davies M, Rich, V., Bohrer G. The ratio of methanogens to methanotrophs drives methane transfer velocity in a temperate peat bog. SPRUCE All-Hands Meeting. Virtual Meeting. 05/13/2020.

**Rey-Sanchez C.** The use of flux footprint models. Coastal Carbon Research Coordination Network Methane Working Group. Mountain View, California. 12/08/2019.

**Rey-Sanchez C,** Slater J, Hao Y, Grau-Andres R, Davies M, Rich, V., Bohrer G. Methane from peat bogs: Where does it come from and how is it cycled? Earth and Environmental Sciences Seminar. Lawrence Berkeley National Laboratory. Berkeley, California. 05/06/2019.

**Rey-Sanchez C,** Morin TH, Bohrer G. Techniques for monitoring and modelling carbon dioxide and methane fluxes in wetlands. University La Sallista. Antioquia, Colombia. 02/10/2017.

### *Contributed Talks*

**Rey-Sanchez C,** Verfaillie J., Szutu D., Mallick K., Wang T., Baldocchi D. Combining ECOSTRESS, CubeSats and footprint modelling to improve the estimates of evaporation in Corn and Alfalfa fields. Ameriflux Annual Meeting (Virtual) September 20, 2021.

**Rey-Sanchez C,** Wharton S., Vilà-Guerau de Arellano J, Paw U K.T., Hemes K.S., Fuentes J.D., Osuna J., Szutu D., Ribeiro J.V., Verfaillie J., Baldocchi D. The effect of Land Cover, Subsidence, and Advection on Seasonal Changes in Atmospheric Boundary Layer Height and the Budgets of Methane and other GHGs. 23rd Conference on Atmospheric Chemistry. 101st American Meteorological Society Annual Meeting. January 12, 2021.

**Rey-Sanchez C,** J. Verfaillie, D. Szutu, K.T. Paw U, D. Baldocchi. Detecting hotspots of methane emissions in wetlands through eddy-covariance measurements and footprint modelling. American Geophysical Union (AGU) Fall Meeting. 12/9-12/13/2019. San Francisco, California.

**Rey-Sanchez C,** Slater J, Hao Y, Grau-Andres R, Davies M, Rich, V., Bohrer G. An upscaling framework for methane emissions in a kettle-lake peat bog in Ohio. Ameriflux PI meeting. 10/22-23/2018. Bloomington, Indiana.

**Rey-Sanchez C,** Slater J, Hao Y, Grau-Andres R, Davies M, Bohrer G. Production and emission of methane in disturbed and undisturbed areas in a peat bog in Ohio. Society of Wetland Scientists 2018 Annual Meeting. 05/29-06/01, 2018. Denver, Colorado.



**Rey-Sanchez AC**, Morin T, Stefanik K, Wrighton K, Bohrer G. Methane production/consumption within the soil column and associated atmospheric emissions among different land cover types of a Lake Erie estuarine wetland. 33rd Conference on Agricultural and Forest Meteorology/12th Fire and Forest Meteorology Symposium/Fourth Conference on Biogeosciences. 05/13-16/2018. Boise, Idaho.

**Rey-Sanchez AC**, Slater J, Hao Y, Grau-Andres R, Davies M, Bohrer G. Measuring Methane Emissions in a Peat Bog in Ohio with Fluctuating Water Level: Comparison of Disturbed vs. Undisturbed Areas. 46<sup>th</sup> Annual Water Management Association of Ohio Conference. 11/01/2017. Worthington, Ohio.

**Rey-Sanchez AC**, Morin TH, Bohrer G. Understanding the role of wetlands in the carbon balance and greenhouse gas emissions of the planet: A case study in an estuarine wetland in Northern Ohio. Hayes Forum at The Ohio State University. 03/03/2017. Columbus, Ohio (**Award for 3<sup>rd</sup> place in the Agricultural and Environmental Science section**).

**Rey-Sanchez AC**, Morin, T, Bohrer G. Semi-continuous monitoring of methane in wetlands' soils through the use of pore water dialysis 'peepers'. Innovative Environmental Monitoring Symposium. 10/17-18/2016. Athens, Ohio.

**Rey-Sanchez AC**, Morin, T, Bohrer G. Carbon fluxes from an estuarine wetland in Northern Ohio. Ohio River Basin Consortium for Research and Education 32<sup>nd</sup> Annual Symposium. 09/27-29/2016. Youngstown, Ohio (**Best Student Presentation Award**).

**Rey-Sanchez AC**, Morin T, Stefanik K, Wrighton K, Bohrer G. The carbon balance in a heterogeneous estuarine wetland in Northern Ohio. 16<sup>th</sup> Annual Meeting of the American Ecological Engineering Society. 06/07-09/2016. Knoxville, TN.

**Rey-Sanchez AC**, Posada JM, Slot M, Kitajima K. Modeling the Spatial and Temporal Variation of Leaf Temperature in the Canopy of a Tropical Forest. 48<sup>th</sup> National Congress of the Colombian Academy of Biological Sciences (ACCB). 10/09/2013. Bogotá, Colombia.

**Rey-Sanchez AC**, Posada JM. Optimal Photosynthetic Use of Light: Do Seedlings Behave like Trees? Smithsonian Tropical Research Institute (STRI): Barro Colorado Island (BCI) BAMBI Seminar. 10/25/2012. Barro Colorado Island, Panamá.

### *Posters*

**Rey-Sanchez C**, Wharton S., Vilà-Guerau de Arellano J, Paw U K.T., Hemes K.S., Fuentes J.D., Osuna J., Szutu D., Ribeiro J.V., Verfaillie J., Baldocchi D. On the use of eddy-covariance and ECOSTRESS data to model the height of the atmospheric boundary layer. Ameriflux Land-Atmosphere Interactions Workshop. June 10-11, 2021.

**Rey-Sanchez C**, Wharton S., Vilà-Guerau de Arellano J, Paw U K.T., Hemes K.S., Fuentes J.D., Osuna J., Szutu D., Ribeiro J.V., Verfaillie J., Baldocchi D. Atmospheric Boundary Layer Height and its Responses to Seasonality of Land Cover, Subsidence, and Advection. Ameriflux Annual Meeting. Thursday, October 8th, 2020

**Rey-Sanchez AC**, Davies M, Slater J, Hao Y, Grau-Andres R, Rich V., Bohrer G. Patterns of porewater methane concentration and atmospheric emissions within different sites of a peat bog in Ohio. American Geophysical Union Fall Meeting. 12/2018. Washington, D.C.

**Rey-Sanchez AC**, Morin T, Stefanik K, Angle JC, Wrighton K, Bohrer G. Patterns of in-soil methane production and atmospheric emission among different land covers of a Lake Erie estuarine wetland. American Geophysical Union Fall Meeting. 12/2017. New Orleans, Louisiana

**Rey Sanchez AC**, Bohrer G. Using Artificial neural networks to model evaporation and CO<sub>2</sub> fluxes in a coastal reef. Ohio Supercomputer Center Statewide Users Group Conference. 09/2017. Columbus, Ohio.

**Rey-Sanchez AC**, Morin T, Stefanik K, Wrighton K, Bohrer G. Carbon fluxes in a heterogeneous estuarine wetland in Northern Ohio. Comparing eddy covariance and chamber measurements. American Geophysical Union Fall Meeting. 12/12-16/2016. San Francisco, California.

**Rey AC**, Medina JC, García CF. Changes in the processes of the forest hydrological cycle in response to different land-cover types within the San Cristobal River watershed. XIII World Forest Congress (WFC). 9/21/2009. Buenos Aires, Argentina.

### *Work Presented by Coauthors*

Housen Chu, Patty Y Oikawa, Thomas Fenster, **Camilo Rey-Sanchez**, Dennis D Baldocchi, Joe Verfaillie, Stephen Chan, Sigrid Dengel, Sebastien Biraud, Margaret S Torn. A footprint-informed decomposition approach for deriving flux response functions at AmeriFlux sites. AGU Fall Meeting 2021

Gil Bohrer, Jorge A Villa, Yang Ju, Taylor Stephen, **Camilo Rey-Sanchez**, Kelly Wrighton. Wetland plant phenology and the consequences to methane emissions at a Lake Erie estuarine mineral-soil marsh. AGU Fall Meeting 2019

EJ Stuart-Haëntjens, Brady S Hardiman, Robert Timothy Fahey, Gil Bohrer, Camilo Rey-Sanchez, Susan J Cheng, Timothy Hector Morin, Peter Curtis, Christoph S Vogel, Christopher Michael Gough. Lessons from a 15-year eddy-covariance dataset: could changing soil water content tip the temperate forest carbon balance? AGU Fall Meeting 2019.

Jorge A Villa, Taylor Stephen, **Camilo Rey Sanchez**, Gil Bohrer. Relationship between methane flux and carbon uptake in three cosmopolitan wetland plant genera. AGU Fall Meeting 2018

Chante Vines, **Camilo Rey Sanchez**, Derek Johnson, Jaclyn Hatala Matthes, Sarah Russell, Gil Bohrer. Baseline Methane Concentrations using Eddy Covariance Methods near a Hydraulic Fracturing Site. AGU Fall Meeting 2018.

Timothy Hector Morin, William J Riley, **Camilo Rey Sanchez**, Gil Bohrer, Zelalem Amdie Mekonnen, Kay C Stefanik, Kelly C Wrighton. Seasonal water level strongly affects CH<sub>4</sub> emissions in a natural estuarine wetland: Current and future predictions using a mechanistic model. AGU Fall Meeting 2018.

Xing Li, Jingfeng Xiao, Binbin He, Muhammad Altaf Arain, Jason Beringer, Ankur R Desai, Carmen Emmel, David Y Hollinger, Alisa Krasnova, Ivan Mammarella, Steffen Noe, Penelope Serrano-Ortiz, AC Rey Sanchez, Adrian V Rocha, Andrej Varlagin.

Bohrer G, **Rey-Sanchez AC**, Kenny WT, Morin TH. Eddy-Covariance Observations and Large-Eddy-Simulations of Near-Shore Fluxes from Water Bodies. Oral Presentation, American Geophysical Union Fall Meeting. 12/2017. New Orleans, Louisiana.

Vines C, **Rey-Sanchez AC**, Bohrer G. Using footprint analysis to determine flux measurements source over a heterogeneous surface. Poster, Fifth Annual Water and Land Symposium at Kent State University. 10/2017. Kent, Ohio.

Morin TH, **Rey-Sanchez AC**, Bohrer G, Riley W, Angle J, Mekonnen Z, Stefanik K, Grant R, Wrighton K. Utilizing patch and site level greenhouse-gas concentration measurements in tandem with the prognostic model, ecosys. Poster, Joint NACP and Ameriflux PI Meeting. 03/2017. North Bethesda, Maryland.

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