Rodrigo Vargas

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Contact Information

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Education

2007	Ph.D.	Environmental Sciences	University of California, Riverside
2002	Licenciatura	Biology	Universidad Nacional Autónoma de México (UNAM)

Appointments

2025 - present	Professor, School of Life Sciences, Arizona State University
2025 - present	Associate Faculty, Plant and Soil Sciences, University of Delaware
2021 - 2025	Professor, Plant and Soil Sciences, University of Delaware
2023 - 2025	Director, Water Science and Policy Graduate Program, University of Delaware
2022 - 2025	Joint appointment, Electrical and Computer Engineering, University of Delaware
2017 - 2025	Joint appointment, Department of Geography and Spatial Sciences, University of Delaware
2022	Visiting Professor, Swiss Federal Institute of Technology (ETH)
2017 - 2021	Associate Professor, Plant and Soil Sciences, University of Delaware
2012 - 2017	Assistant Professor, Plant and Soil Sciences, University of Delaware
2011 - 2012	Visiting Professor, Stanford University
2012 - 2015	Adjunct Professor, Centro de Investigación Científica y de Educación Superior de Ensenada (CICESE)
2010 - 2012	Assistant Professor, Centro de Investigación Científica y de Educación Superior de Ensenada (CICESE)
2007 - 2010	Postdoctoral Researcher, University of California, Berkeley
2002 - 2007	Graduate Research Assistant, University of California, Riverside
1998 - 2001	Undergraduate Research Assistant, Universidad Nacional Autónoma de México (UNAM)

Research Interests

Carbon cycle science, ecosystem ecology, global environmental change, biogeochemical cycles, soil-plant-atmosphere interactions, environmental data science, extreme events, environmental networks, climate change, nature-based solutions

Academic Honors and Awards

2025-2026	President-elect, Biogeosciences section, American Geophysical Union (AGU)
2024	AAAS Fellow
2023	Mexican Academy of Sciences Fellow

2022 Piers J. Sellers Global Environmental Change Mid-Career Award; American Geophysical Union (AGU)
2022 Earth Leadership Fellow
2021 Latino/Hispanic Heritage Impact Award; University of Delaware
2021 Highly Cited Researcher Web of Science (category: cross-field)
2021 Mid-Career Faculty Excellence in Scholarship Award; University of Delaware
2019 Highly Cited Researcher Web of Science (category: cross-field)
2019 *Investigador Nacional* Level 3 (SNI-CONACYT; Mexican recognition for scientific productivity [highest level])
2018 Mentorship/Advancement award of the Hispanic/Latino Graduate Student Association (HLGSA); University of Delaware
2018 Mexican Carbon Program International Award (for contributions to carbon cycle science in Mexico)
2017 NSF CAREER award
2016 Outstanding Reviewer; *Biogeochemistry*
2015 Editors' Citations for Excellence in Refereeing; *JGR-Biogeosciences*
2014 Exemplary Achievement in Community Service, International Interdisciplinary Initiatives Lecture Series; University of Delaware
2013 *Investigador Nacional* Level 2 (SNI-CONACyT; Mexican recognition for scientific productivity [out of 3 levels])
2011 Blaustein Visiting Professorship; Stanford University
2010 *Investigador Nacional* Level 1 (SNI-CONACyT; Mexican recognition for scientific productivity [out of 3 levels])
2006 Best student paper of Division S-7; Soil Science Society of America (SSSA)
2005 Mildred E. Mathias graduate student award; University of California
2004 Kearney Foundation Fellowship; University of California
2002 *Consejo Naconal de Ciencia y Tecnologia* (CONACyT) (Scholarship for Doctoral studies)
2002 Fulbright Fellow (Scholarship for Doctoral studies)
2002 *Mención Honorífica* (Honorable Mention) for *Licenciatura* degree
2002 PROBETEL Scholarship; Universidad Nacional Autónoma de México [UNAM]
2001 International Exchange Award; University of Waterloo
1998 UCMEXUS-CONACyT Scholarship; Universidad Nacional Autónoma de México [UNAM]

NATIONAL AND INTERNATIONAL ASSESSMENTS

2023 National Climate Change Roadmap: A research framework for US agriculture, forestry and working lands *(role: contributing author)*
2018 Second State of the Carbon Cycle Report (SOCCR2): A Sustained Assessment Report *(role: chapter lead)*
2015 Mexican Report on Climate Change. Group I: Scientific Bases, Models, and Modeling *(role: chapter co-author)*
2015 Status of the World's Soil Resources (SWSR) – Main Report *(role: contributing author)*

PUBLICATIONS

Total citations = 21945; h-index = 65; i10 index = 154 *Google Scholar Statistics (revised on 5/2025)*
Total publications with >100 citations each = 49

** Student; ** Postdoc; † Publication where Vargas is corresponding author*
Letters in bold represent members of the Vargas lab

[201] Sanders-DeMott R, Hutyra L, Hurteau MD, William S, Keeton WS, Fallon KS, Anderegg WRL, Hollinger DY, Kuebbing SE, Lucash M, Ordway EM, **Vargas R**, Walker W (2025) Ground-Truth: Can Forest Carbon Protocols Ensure High-Quality Credits? Earth's Future. 13(5):e2024EF005414 https://doi.org/10.1029/2024EF005414

[200] Wei X, Hayes D, Schwalm C, Fisher J, Huntzinger D, Ma L, **Vargas R**, Brunsell N (2025) Climate constrains the enhancement of CO_2 fertilization on forest gross primary productivity. *Environmental Research Letters*. 20(6): 064013 https://doi.org/10.1088/1748-9326/add177

[199] Poulter et al. [including **Vargas**] (2025) The North American Greenhouse Gas Budget: emissions, removals, and integration for CO_2, CH_4, and N_2O (2010-2019): Results from the Second REgional Carbon Cycle Assessment and Processes Study (RECCAP2). *Global Biogeochemical Cycles*. 39(4): e2024GB008310 https://doi.org/10.1029/2024GB008310

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[194] Oikawa PY, Sihi D, Forbrich I, Fluet-Chouinard E, Najarro M, Thomas O, Shahan J, Arias-Ortiz A, Russell S, Knox SH, McNicol G, Wolfe J, Windham-Myers L, Stuart-Haentjens E, Bridgham SD, Needelman B, **Vargas R**, Schäfer K, Ward EJ, Megonigal P, Holmquist J (2024) A new coupled biogeochemical modeling approach provides accurate predictions of methane and carbon dioxide fluxes across diverse tidal wetlands. *Journal of Geophysical Research-Biogeosciences.* 129(10): e2023JG007943 https://doi.org/10.1029/2023JG007943

[193] Arias-Ortiz et al [including **Vargas R**] (2024) Methane Fluxes in Tidal Marshes of the Contiguous United States: A Synthesis of Fluxes and Analysis of Predictor Variables.

Global Change Biology. 30(9):e17462 https://doi.org/10.1111/gcb.17462

[192] Keenan TF, Bohrer G, Scott RL, **Vargas R** (2024) Editorial special issue: Celebrating 25 years of AmeriFlux. *Agricultural and Forest Meteorology*:110241. https://doi.org/10.1016/j.agrformet.2024.110241

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† [190] Durante P, **Guevara M***, **Vargas R**, Oyonarte C (2024) Predicting soil organic carbon with different approaches and spatial resolutions for the southern Iberian Peninsula, Spain. *Geoderma Regional.* (37)e00780 https://doi.org/10.1016/j.geodrs.2024.e00780

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† [188] **Hill A***, Forbich I, Schafer K, **Vargas R** (2024) Empirical dynamic modeling reveals complexity of methane fluxes in a temperate salt marsh. *Journal of Geophysical Research-Biogeosciences. 129(2):* e2023JG007630 https://doi.org/10.1029/2023JG007630

† [187] **Le VH**** and **Vargas R** (2024) An autocorrelated conditioned Latin hypercube method for temporal or spatial sampling and predictions. *Computers and Geosciences*. 184:105539. https://doi.org/10.1016/j.cageo.2024.105539

† [186] **Braden D***, Mondal P, Park T, et al., **Vargas R** (2024) Estimating Forest extent across Mexico. *Environmental Research Letters.* 19: 014083 https://doi.org/10.1088/1748-9326/ad193e

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† [184] **Le H**** and **Vargas R** (2024) Beyond a deterministic representation of the temperature dependence of soil CO_2 efflux. *Science of the Total Environment* 912:169391 https://doi.org/10.1016/j.scitotenv.2023.169391

[183] Abdaki M, Sanchez-Azofeifa A, **Vargas R**, Ludwig R, Hamann H (2024) Spatial and temporal variation of three Eddy-Covariance flux footprints in a Tropical Dry Forest. *Agricultural and Forest Meteorology.* 345:109863 https://doi.org/10.1016/j.agrformet.2023.109863

† [182] **Capooci M***, Seyfferth AL, Tobias C, Wozniak AS, Hedgpeth A, Bowen M, Biddle J, McFarlane K, **Vargas R** (2024) High methane concentrations in tidal salt marsh soils: where does the methane go? *Global Change Biology* 30(1):e17050 https://doi.org/10.1111/gcb.17050

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https://doi.org/10.1145/3603166.3632142

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† [169] **Vargas R** and **Le VH**** (2023) The paradox of measuring multiple greenhouse gases

from soils. *Biogeosciences*. 20:15-26 https://doi.org/10.5194/bg-20-15-2023

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† [165] **Vázquez-Lule A***, Seyfferth A, Limmer MA, **Mey P***, **Guevara M***, **Vargas R** (2022) Hyperspectral reflectance for measuring canopy-level nutrients and photosynthesis in a salt marsh. *Journal of Geophysical Research-Biogeosciences*. 127(11):e2022JG007088 https://doi.org/10.1029/2022JG007088

† [164] **Capooci M*** and **Vargas R** (2022) Trace gas fluxes from tidal salt marsh soils: implications for carbon-sulfur biogeochemistry. *Biogeosciences*. 19:4655-4670 https://doi.org/10.5194/bg-19-4655-2022

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† [162] **Hill A*** and **Vargas R** (2022) Methane and carbon dioxide fluxes in a temperate tidal salt marsh: comparisons between plot and ecosystem measurements. *Journal of Geophysical Research-Biogeosciences*. 127(9):e2022JG006904 http://doi.org/10.1029/2022JG006943

† [161] **Smith EM*, Guevara M*, Tarin T***, Pouyat R, **Vargas R** (2022) Spatial variability and uncertainty of soil nitrogen across the conterminous United States at different depths. *Ecosphere*. 13(7):e4170 https://doi.org/10.1002/ecs2.4170

† [160] **Llamas RM***, Valera L, Olaya P, Taufer M, **Vargas R** (2022) Downscaling satellite soil moisture using a modular spatial inference framework. *Remote Sensing*. 14(13), 3137 https://doi.org/10.3390/rs14133137

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13:1733 https://doi.org/10.1038/s41467-022-29391-5

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† [154] **Guevara M*** and **Vargas R** (2021) Predicción de carbono orgánico en los suelos de México a un metro de profundidad y 90m de resolución espacial (1999-2009). *Terra Latinoamericana*. 39:(1-19)e1241 https://doi.org/10.28940/terra.v39i0.1241

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† [150] **Barba J****, Poyatos R, **Capooci***, **Vargas R** (2021) Spatiotemporal variability and origin of CO_2 and CH_4 tree stem fluxes in an upland forest. *Global Change Biology.* 27(19):4879-4893 https://doi.org/10.1111/gcb.15783

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† [147] **Hill A***, **Vazquez-Lule A***, **Vargas R** (2021) Linking vegetation spectral reflectance with ecosystem carbon phenology in a coastal salt marsh. *Agricultural and Forest Meteorology*. 307:108481 https://doi.org/10.1016/j.agrformet.2021.108481

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wetlands. *Earth System Science Data*. 13:3607-3689 https://doi.org/10.5194/essd-13-3607-2021

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† [144] **Stell E***, Warner D, Jian J, Bond-Lamberty B, **Vargas R** (2021) Spatial biases of information influence global estimates of soil respiration: How can we improve global predictions? *Global Change Biology.* 27(16):3923-3938. https://doi.org/10.1111/gcb.15666

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† [140] **Villarreal S*** & **Vargas R** (2021) Representativeness of FLUXNET sites across Latin America. *Journal of Geophysical Research-Biogeosciences.*126(3):e2020JG006090 https://doi.org/10.1029/2020JG006090

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OUTREACH PUBLICATIONS

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PUBLICATIONS UNDER REVIEW

** Student; ** Postdoc; † Publication where Vargas is corresponding author*
Letters in bold represent members of the Vargas lab

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DATASETS PUBLISHED

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[4] **Reimer JJ****, **Vargas R**, Rivas D, Gaxiola-Castro G, Hernandez-Ayon M, Lara-Lara R (2016) CMS: MODIS GPP, fPAR, and SST, and ENSO Index, Baja California, Mexico, 2000-2013. ORNL DAAC, Oak Ridge, Tennessee, USA. http://dx.doi.org/10.3334/ORNLDAAC/1310

[3] **Villarreal S*, Vargas R**, Yepez E, Acosta JS, Castro A, Escoto-Rodriguez M, Lopez E, Martinez-Osuna J, Rodriguez J, Smith S, Vivoni E, Watts C (2016) CMS: Evapotranspiration and Meteorology, Water-Limited Shrublands, Mexico, 2008-2010. ORNL DAAC, Oak Ridge, Tennessee, USA. http://dx.doi.org/10.3334/ORNLDAAC/1309

[2] **Vargas R, Leon E*** (2015) CMS: Soil CO_2 Efflux and Properties, Site Vegetation Measurements, Mexico, 2011-2012. ORNL DAAC, Oak Ridge, Tennessee, USA. http://dx.doi.org/10.3334/ORNLDAAC/1298

[1] Kim, DG, **Vargas R**, Bond-Lamberty B, Turetsky MR (2012) A Global Database of Gas Fluxes from Soils after Rewetting or Thawing, Version 1.0. Data set. ORNL DAAC, Oak Ridge, Tennessee, USA. http://dx.doi.org/10.3334/ORNLDAAC/1078

INVITED PRESENTATIONS

International

Vargas R. *When and where to measure soil gases: an optimization approach for time series and spatial information*. April 27, **2023**. *European Geophysical Union meeting.* Vienna, Austria

Vargas R. *Cyberinfrastructure tools for soil moisture: the SOMOSPIE framework*. August 9, **2022**. *Agroscope.* Zurich, Switzerland

Vargas R. *Methane emissions from tree stems: a new carbon cycle frontier*. July 13, **2022***. University of Innsbruck.* Innsbruck, Austria

Vargas R. *Representativeness of environmental networks: a reality of an intangible goal*. June 6, **2022***. University of Innsbruck.* Innsbruck, Austria

Vargas R. *Towards defining soil functional types*. May 4, **2022***. University of Zurich (UZH).* Zurich, Switzerland

Vargas R. *Representativeness of environmental networks: a reality of an intangible goal*. April 27, **2022***. ETH.* Zurich, Switzerland

Vargas R. *Publishing Scientific Manuscripts*. March 31, **2022***. ETH.* Zurich, Switzerland

Vargas R. *Redes de monitoreo Ambiental: una realidad o una meta inalcanzable*. May 14, **2021***. Instituto de Ecologia, UNAM.* Mexico City, México. (online)

Goni M and **Vargas R**. Consejos para publicar artículos científicos: un webinar con editores de AGU. October 1, **2020**. *Webinar coordinated by the American Geophysical Union (270 participants).*

Vargas R. *Carbon monitoring systems across Mexico*. July 25, **2019***. CONABIO.* Mexico City, México.

Vargas R. *Navegando por la ciencia del ciclo del carbono en México: ¿Quo vadis?* Mexican Carbon Program (PMC, *Programa Mexicano del Carbono*)- IX International Carbon Symposium. May 16-18, **2018***.* Alamos, Sonora, México.

Vargas R. *National map of organic carbon in the soils and mantle of Mexico*. Global Symposium on Soil Organic Carbon. March 21-23, **2017**. FAO, Rome, Italy.

Vargas R. *Land-atmosphere water and carbon dynamics across North America: site-studies, remote sensing, and network design.* January 21, **2016**. Yonsei University. Seoul, Korea.

Vargas R. *Carbon dynamics and water relations from plots to continental scales.* January 19, **2016**. Seoul National University. Seoul, Korea.

Vargas R. *CarboNA: una visión desde México.* Mexican Carbon Program (PMC, *Programa Mexicano del Carbono*)- VI International Carbon Symposium. May 20-22, **2015***.* Villahermosa, Tabasco, México.

Vargas R. *Soil respiration: experiments and observations across semi-arid ecosystems.* April 20, **2015**. CESIC-Centro de Edafología y Biología Aplicada del Segura, Murcia, Spain

Vargas R. *Carbon Cycle Science across North America: uncertainty, interoperability and the case of Mexico*. April 15, **2015**. Universidad de Almeria, Almeria, Spain

Vargas R. *Soil respiration: experiments and observations across semi-arid ecosystems.* April 14, **2015**. CESIC-Estación Experimetnal de Zonas Aridas, Almeria, Spain

Vargas R. *Carbon Cycle Science across North America: uncertainty, interoperability and the case of Mexico*. April 10, **2015**. Universidad de Granada, Granada, Spain

Vargas R. et al (6 co-authors). *Collaborative science and long-term research for carbon cycle science across the world.* August 19, ***2013***. 11th INTECOL Congress, London, UK **(Session keynote speaker)**

Vargas R. *Environmental networks and greenhouse gas fluxes in Mexico.* August 6, ***2013***. Universidad Nacional Autónoma de México, Mexico City, Mexico.

Vargas R. et al. (12 co-authors) *Hacia una Síntesis de flujos de agua y carbono en ecosistemas terrestres de México.* May 24, ***2013***. Simposio del Programa Mexicano del Carbono. COLPOS, Texcoco, Mexico. **(Meeting keynote speaker)**

Vargas R. *Looking deeper into the soil: the role of fine roots and plant photosynthesis on soil respiration in forests.* March 26, ***2013***. CRA-RPS. Rome, Italy

Vargas R. *El pulso de los ecosistemas de México: avances y retos en mediciones de flujos de agua y carbono.* June 29, ***2012***. Universidad Nacional Autónoma de México, Mexico City, Mexico.

Vargas R. *Macrosistemas biológicos, sensores y bases de datos en las interacciones tierra-océano.* Spring meeting CUDI-2012. May 23, ***2012.*** Enseanda, BC, Mexico.

Vargas R, Yepez EA. *Síntesis de flujos de carbono y vapor de agua: Red MexFlux.* October 12-14, ***2011***. Tercer simposio internacional del carbono en México, Toluca, Estado de México, México.

Vargas R. *Dinámica del carbono en bosques de la Península de Yucatán.* September 27, ***2011***. Centro de Investigación Científica de Yucatán, Mérida, Yucatán, México.

Yépez EA, **Vargas R**. *Monitoreo de flujos de carbono en los ecosistemas terrestres de México.* October 6, ***2010***. Segundo simposio internacional del carbono en México, San Calos, Sonora, México.

Vargas R. *Microbios, plantas y atmósfera: el cambio climático y los flujos de carbono.* September 20, ***2010***. Centro de Investigación Científica y Educación Superior de Ensenada (CICESE), México.

Vargas R. *La respiración de ecosistemas: oportunidades y retos a través de escalas espaciales y temporales.* September 9, ***2010***. Primera reunión EcoRed. Mérida, Yucatán, México.

Vargas R. *Understanding CO_2 efflux and production: do we need to look deeper into the soil?* ESF LESC Exploratory Workshop: Diurnal to century scale controls on soil respiratory fluxes. Towards a new generation of integrated experimental and modeling approaches. September 21-23, ***2009***. Innsbruck, Austria.

Vargas R. *Cómo influyen los factores biofísicos en la dinámica del carbono en ecosistemas terrestres? Ejemplos a través de distintas escalas espacio-temporales*. April 15, ***2009***. Centro de Investigación Científica y Educación Superior de Ensenada (CICESE), Ensenada, México.

Vargas R, Allen EB, Allen MF, Gomez-Pompa A. *Mycorrhizal functioning in restored seasonal tropical forest, Mexico, following fires and hurricanes.* 5th International Conference on Mycorrhiza (ICOM5). July 23-27, ***2006***. Granada, Spain.

National

Vargas R. *Where does the carbon go? Exploring carbon dynamics in a temperate salt marsh.* February 23, **2024***. Drexel University, Philadelphia,* PA, USA

Vargas R. *The quest of glocal (global to local) environmental monitoring systems.* January 22, **2024***. Arizona State University,* AZ, USA

Vargas R. *Where does the carbon go? Exploring carbon dynamics in a temperate salt marsh.* September 15, **2023***. Virginia Tech. Blacksburg*, VA, USA

Seyfferth A and **Vargas R.** *Biogeochemistry across the terrestrial-water interface.* April 5, **2023***. University of California-Riverside.* Riverside, CA, USA

Vargas R. *Representativeness of environmental networks: a reality of an intangible goal*. March 30, **2023***. University of New Mexico.* Albuquerque, NM, USA

Vargas R. *Soil carbon and global change:* processes, scales and the future of data-centered soil science. March 20, **2023***. Pacific Northwest National Laboratory. Richland*, WA, USA (online)

Vargas R. *Environmental data science to address global grand challenges*. HPC DARWIN Symposium. February 23, **2023***. University of Delaware.* Newark, DE, USA

Vargas R. *Soil carbon and global environmental change: enabling next generation data-centered soil science*. November 7, **2022***. SSSA meeting,* Baltimore, MD, USA

Vargas R. *Representativeness of environmental networks: a reality of an intangible goal*. May 19, **2022***. Stanford University.* Palo Alto, CA, USA (online)

Vargas R. *A journey in carbon cycle science*. March 17, **2022***. Yale University.* New Haven, CT, USA (online)

Vargas R. *The breathing of a salt marsh: learnings and challenges about carbon dynamics.* June 22, **2021***.* Restore America's Estuaries, Washington, DC, USA (online)

Vargas R. *An inconvenient truth of environmental observatory networks*. February 22, **2021***.* Northern Arizona University, Flagstaff, AZ, USA (online)

Vargas R. *Improving satellite soil moisture estimates using geomorphometry and machine learning*. October 4, **2019***.* Rutgers University*.* New Brunswick, NJ, USA.

Vargas R. *A journey of carbon cycle science: from plots to the global scale*. July 10, **2019***.* PNNL*.* Richland, WA, USA.

Vargas R, Hayes DJ. *Where does all the carbon go? Piecing together the North American carbon puzzle from a synthesis of top-down and bottom-up estimates*. NOAA webinar series "From Science to Solutions: the state of the carbon cycle". May 21, **2019**. Remote presentation (https://www.youtube.com/watch?v=kieMr43YBcU)

Vargas R. *Carbon monitoring systems across Mexico: from plot scale to national networks*. July 2, **2019***.* NASA AMES*.* Mountain View, CA, USA.

Vargas R. *Greenhouse gas emissions from tree stems: a new frontier for global biogeochemical cycles.* Clemson University*.* March, **2019**. Clemson, SC, USA

Vargas R., et al. *The role of topography for controlling soil CO_2 and CH_4 fluxes.* SSSA 2018-2019 International Soils Meeting. January 6, **2019**. San Diego, CA, USA

Vargas R and Seyfferth A. *The force awakens: ecological forecasting needs soil chemistry.* SSSA 2018-2019 International Soils Meeting. January 6, **2019**. San Diego, CA, USA

Vargas R. *Predicting soil moisture across time and space: a soil science perspective.* November 7, **2018**. Pennsylvania State University, State College, PA, USA

Vargas R. *Ecoinformatics and ecological forecasting: Delaware and beyond. Earth and Observation Interdisciplinary Science Lecture Series.* May 2, **2018**. University of Delaware, Newark, DE, USA

Vargas R. *Ecological Forecasting: the carbon cycle in my backyard, Delaware and beyond. Symposium in honor of Susan Trumbore for winning the 2018 Benjamin Franklin Medal in Earth and Environmental Science*. April 18, **2018**. University of Delaware. Newark, DE, USA.

Vargas R. *Time series analysis and machine learning for ecological applications: enhancing collaboration for data science.* February 26, **2018**. University of Delaware, Newark, DE, USA

Vargas R. *A journey of carbon dynamics across North America.* November 12, **2017**. Donald Danforth Plant Science Center. St Louis, MO, USA.

Vargas R. et al. *Latin America Networks.* June 7, **2017**. FLUXNET conference, University of California Berkeley. Berkeley, CA, USA.

Vargas R. *Digital soil mapping of soil moisture and soil carbon across North America.* October 21, **2016**. Temple University. Philadelphia, PA, USA.

Vargas R. *Soil moisture and soil carbon across North America.* March 21, **2016**. Boston University. Boston, MA, USA.

Vargas R, Guevara M*, Cruz-Gaistardo C, Paz F, de Jong B, Etchevers J**.** *Spatial variability of soil carbon across Mexico and the United States.* AGU Fall meeting. December 16, **2015**. San Francisco, CA, USA.

Vargas R. *Carbon dynamics and water relations from plots to continental scales.* October 9, **2015**. Department of Civil and Environmental Engineering. University of Delaware, Newark, DE, USA.

Vargas R. et al. *Changes in precipitation intensity and frequency influence carbon dynamics in an arid grassland: results from a multiannual experiment.* ESA annual meeting. August 14, **2015**. Baltimore, MD, USA.

Vargas R. *Advancing carbon cycle science in North America: emerging opportunities and information across Mexico*. January 12, **2015**. Arizona State University. Tempe, Arizona, USA

Vargas R, Michael H, **Sanchez Z****, Seyfferth A. *Ecohydrology of greenhouse gas fluxes in a temperate estuary*. AGU Fall meeting. December 15-19, **2014**. San Francisco, CA, USA.

Vargas R. *The Effect of Fire, Extreme Precipitation and Drought on Ecosystem Fluxes of Water-Limited Ecosystems*. December 15-19, **2014**. San Francisco, CA, USA.

Vargas R. *Responses of aridlands to precipitation variability: Why should we care for water and carbon fluxes?* February 14, ***2013***. University of Delaware, Newark, DE, USA

Vargas R. *Advancing carbon cycle science in North America: opportunities in land and ocean across Mexico. October* 20, ***2012***. University of New Mexico, Albuquerque, NM, USA

Vargas R. *Advancing carbon cycle science in North America: opportunities in land and ocean across Mexico.* January 18, ***2012***. Stanford University, Palo Alto, CA, USA.

Vargas R. *Biophysical controls of carbon dynamics in terrestrial ecosystems across space and time.* Second DENIN research symposium. January 12, ***2011.*** University of Delaware, Newark, DE, USA.

Vargas R. *Altered precipitation influence carbon dynamics in arid ecosystems.* October 27, ***2010***. Stanford University, Palo Alto, CA, USA.

Vargas R. *On the temporal correlation between photosynthesis and soil respiration: reconciling lags and observations.* June 29, ***2010***. University of Delaware, Newark, DE, USA

Vargas R. *From soil ecology to micrometeorological measurements. Why soil ecologists need to talk to atmospheric scientists.* April 23, ***2010***. University of Kansas, Lawrence, KA, USA.

Vargas R. *Biophysical controls on terrestrial carbon dynamics: disturbances, water pulses, and large-scale patterns.* March 22, ***2010***. University of Arizona, Phoenix, AZ, USA.

Vargas R. *Looking deeper into the soil: environmental controls and seasonal lags of soil CO_2 production and efflux.* Environmental Science, Policy and Management Seminar Series. January 22, ***2009***. University of California, Berkeley, CA, USA

Hamilton M, **Vargas R**, Allen MF. *Application of embedded networked systems for spatio-temporal rhizosphere research.* ASA-CSSA-SSSA International Annual Meetings. November 4-8, ***2007***. New Orleans, LA, USA. (presented by Vargas R).

Vargas R. *Soil respiration in natural spatial gradients and diurnal variation in a hysteresis effect.* Workshop on Automated soil respiration measurements. September 10-12, ***2007***. Durham, NH, USA.

Vargas R and Allen MF. *Hurricanes, soils, and sensor networks: what can we see in the soil?* December 1, ***2006***. Center for Embedded Networked Systems Seminar. University of California, Los Angeles, CA, USA.

OTHER PRESENTATIONS

** Student; ** Postdoc; Letters in bold represent members of the Vargas lab*

2024

Vargas R. Where does the carbon go? Carbon dynamics in a temperate salt marsh. International Carbon Dioxide Conference (ICDC11). July 29-August 2, 2024. Manaus, Brazil.

Vargas R and **Llamas R***. Downscaling Soil Moisture Using Time-Specific Adaptable Machine Learning Models. Accelerating Informatics for Earth Science. June 13, 2024. Arlington, VA, USA

Vargas R. Where does the carbon go? Mid Atlantic Ocean Forum. May 13, 2024. Lewis, DE, USA.

Kayler (et al including **Vargas**) The Deep Soil Ecotron – A Facility to Explore, Model, and Sense Deep Soil. EGU General Assembly. April 14–19, 2024. Vienna, Austria.

2023

Smith EM*, Ballantyne A, Bond-Lamberty B, Le VH, Murray-Tortarolo G, **Vargas R.** Spatiotemporal Variability and Associated Uncertainty of Soil Respiration across the Conterminous United States. AGU Fall meeting. December 11-15, 2023. San Francisco, CA, USA

Park T, **Vargas R**, Nemani RR, Brosnan IG. December. Mapping National Forest Aboveground Biomass in Mexico by Integrating GEDI and Landsat Times Series Data. December 11-15, 2023. San Francisco, CA, USA

Oikawa PY, Silberman J, Matsumura M, Gough CM, Haber, Tenda S, Neubauer SC, Schafer KV, Dhakal S, Knox S, Poppe K, Russell S, **Vargas R**, Windham-Myers L, Stuart-Haentjens EJ. Constraining CO_2 and CH_4 fluxes from Diverse Tidal Wetlands: Measurements and modeling across a network of eddy covariance sites in North America and Canada. AGU Fall meeting. December 11-15, 2023. San Francisco, CA, USA

Ballantyne A, Bond-Lamberty B, **Vargas R**, Liu Z, Endsley A, **Smith EM*.** Evaluation of top-down and bottom-up estimates global respiration and their relationship with model simulations. AGU Fall meeting. December 11-15, 2023. San Francisco, CA, USA

Pennington S, Pressburger L, Bond-Lamberty B, Day D, **Vargas R**. Soil Carbon Model Sensitivity with TEMPEST, a Large-Scale Coastal Forest Manipulation Experiment. AGU Fall meeting. December 11-15, 2023. San Francisco, CA, USA

Vargas R, Seyfferth A, Hopple A, Bond-Lamberty B, Montgomery A, Pennington S, Murguia-Flores F. STEEP-CF: Storm Treatments Effects of Ecosystem Processes of Coastal Forests. ESSS PI Meeting. May 16, 2023. Bethesda, Washington DC, USA.

Vargas R. Grand challenges in environmental data science. Darwin HPC Annual Meeting. February 16, 2023. University of Delaware, Newark, DE, USA.

2022

Vargas R and **Le H**.** The paradox of assessing multiple greenhouse gases from soils for nature-based solutions. AGU Fall meeting. December 12-16, 2022. Chicago, IL, USA

Fettrow S, Jeppi V, Wozniak A, Michael H, **Vargas R**, Seyfferth, Biogeochemical Cycling of Blue Carbon in Coastal Wetlands Under Rising Seas. AGU Fall meeting. December 12-16, 2022. Chicago, IL, USA

Oikawa et al (including **Vargas R**). Constraining CO_2 and CH_4 fluxes from Diverse Tidal Wetlands: Standardizing measurements and analysis across a network of eddy covariance sites in North America and Canada. AGU Fall meeting. December 12-16, 2022. Chicago, IL, USA

Braden D, Mondal P, Park T, **Vargas R**. Identifying Variability in Forest Cover Estimates in Mexico by Comparing Multiple Satellite-Derived Data Products. AGU Fall meeting. December 12-16, 2022. Chicago, IL, USA

Park T, **Vargas R**, Brosan I, Nemani R. Mapping national forest aboveground biomass in Mexico by integrating GEDI, Sentinel-1 and Sentinel-2 data. AGU Fall meeting. December 12-16, 2022. Chicago, IL, USA

Poulter B et al (including **Vargas R**). The Greenhouse Gas Budget of North America 2010-2019: Results from the Second Regional Carbon Cycle and Processes study (RECCAP2) AGU Fall meeting. December 12-16, 2022. Chicago, IL, USA

Franklin S, **Capooci M***, Guber A, Kravchenko A, **Vargas R**, Vasilas B, Yan J. *Impacts of non-equilibrium flow on microbial activity and carbon turnover*. November 7, 2022*. SSSA meeting,* Baltimore, MD, USA

2021 (COVID-19)

Hill A* and **Vargas R.** Methane and Carbon Dioxide Fluxes in a Temperate Salt Marsh: Comparisons Between Plot, Ecosystem and Component Measurements. AGU Fall meeting. December 13-17, 2021. New Orleans, LA, USA.

Capooci M* and **Vargas R**. Continuous, Automated CO_2, CH_4, and N_2O Fluxes from Tidal Salt Marsh Soils: A Snapshot. AGU Fall meeting. December 13-17, 2021. New Orleans, LA, USA.

Yepez et al (including **Vargas R**). Contrasting Net Ecosystem Production Across Ecological Succession at Subtropical Dry Forest of Northwestern Mexico. AGU Fall meeting. December 13-17, 2021. New Orleans, LA, USA.

McNicol G et al (including **Vargas** R). Monthly estimates of global freshwater wetland methane emissions for 2001-2018 from upscaled eddy covariance fluxes. AGU Fall meeting. December 13-17, 2021. New Orleans, LA, USA.

Vargas R. Cyberinfrastructure tools for soil moisture: challenges and applications. Platform for Advanced Scientific Computing (PASC) Conference. July 5-9, 2021. *Virtual meeting.*

Hill A* and **Vargas R.** St Jones Reserve coastal salt marsh study site in Dover, Delaware, USA. 2021 Secnet community meeting information June 25, 2021. *Virtual meeting*

Hayes D et al (including **Vargas R**). A convergence among estimates of a large North American carbon sink: reconciling bottom-up, top-down and sideways data sets at the continental scale. 7th NACP open science meeting. March 2021. *Virtual meeting*

Hill A*, **Vazquez-Lule A***, **Vargas R**. Linking vegetation spectral reflectance with ecosystem carbon phenology in a coastal salt marsh. 7th NACP open science meeting. March 2021. *Virtual meeting*

Vargas R and **Yepez E**. Carbon cycle science across Mexico: the journey of the MexFlux network. 7th NACP open science meeting. March 2021. *Virtual meeting*

Vazquez-Lule A*, Seyfferth A, Limmer M, Mey P, **Guevara M***, **Vargas R**. Influence of salt marsh vegetation nutrients on the gross primary production: a canopy surface hyperspectral approach. 7th NACP open science meeting. March 2021. *Virtual meeting*

Capooci M* and **Vargas R**. Diel and seasonal patterns of soil CO2 efflux in a temperate tidal marsh. 7th NACP open science meeting. March 2021. *Virtual meeting*

2020 (COVID-19)

McNicol G et al (including **Vargas** R). Upscaling FLUXNET-CH4: data-driven model performance, predictors, and regional to global methane emission estimates for freshwater wetlands. AGU Fall meeting. December 11, 2020. *Virtual meeting.*

Poulter B, et al (including **Vargas R**). Converging science and policy-based greenhouse gas budgets for North America for the Second Regional Carbon Cycle and Processes Study (RECCAP-2). AGU Fall meeting. December 11, 2020. *Virtual meeting.*

Stell E*, Warner DL, Bond-Lamberty B, **Vargas R**. Mapping global Rs at fine-scale resolution and optimizing future sample site locations. Delaware Data Science Darwin Computing Symposium. February 12, 2020. Newark DE, USA

Hill A*, **Vázquez-Lule A***, **Vargas R**. Small Yet Mighty… The Coastal Salt Marsh: A comparison of different in-situ sensors and vegetation indices for carbon modeling in a spatially restrictive ecosystem**.** Delaware Wetland Conference. January 29-30, 2020. Wilmington, DE, USA

Vázquez-Lule A* & **Vargas R**. Carbon Dioxide and Methane Exchange at Ecosystem Scale in a Tidal Salt Marsh of Delaware**.** Delaware Wetland Conference. January 29-30, 2020. Wilmington, DE, USA

Wardrup J*, Guevara M*, **Vargas R**. Soil organic carbon datasets and geomorphology within tidal wetlands from Delmarva to Maine**.** Delaware Wetland Conference. January 29-30, 2020. Wilmington, DE, USA

2019

Vargas R. Breaking interoperability barriers for carbon cycle science across North America. AGU Fall meeting. December 9-13, 2019. San Francisco, CA, USA.

Hayes DJ, **Vargas R**, Butman DE, Jacobson AR, Birdsey R. A convergence among estimates of a large North American cabon sink: linkages across bottom-up, top-down and sideways data sets. AGU Fall meeting. December 9-13, 2019. San Francisco, CA, USA.

Lichiheb N, Heuer M, Myles LT, Hicks B, Saylor RD, **Vargas R**, **Vazquez-Lule A***, StLaurent KA. Atmospheric amonia measurements over a coastal salt marsh ecosystem along the Mid-Atlantic US. AGU Fall meeting. December 9-13, 2019. San Francisco, CA, USA.

Runkle B *et al.* How drying and wetting events impact landscape methane fluxes. AGU Fall meeting. December 9-13, 2019. San Francisco, CA, USA.

Vargas R, Li S, Nemani RR. Validation of tree cover maps across Mexico. AGU Fall meeting. December 9-13, 2019. San Francisco, CA, USA.

Smith E*, **Guevara M***, **Vargas R**. Spatial Variability of Soil Nitrogen, Nitrogen Deposition, and Biomass Relationships in the Conterminous United States. Data Science Institute Symposium. November 15, 2019. Newark, DE, USA.

Hill A*, **Barba J****, Hom J, Patterson M, **Vargas R**. Is the Grass Really Greener on the Other Side of the Fence? Examining CO2 exchange within suburban lawn and urban forest floor. Delaware Data Science Symposium. November 15, 2019. Newark DE, USA.

Villarreal S*, **Guevara S***, Alcaraz-Segura D, **Vargas R**. "Diseño de una red de monitoreo ambiental mediante el uso de datos públicos" Reunión Anual Unión Geofísica Mexicana, October 28, 2019. Puerto Vallarta, Mexico.

Hill A*, **Barba J****, Hom J, Patterson M, **Vargas R**. Is the Grass Really Greener on the Other Side of the Fence? Examining CO2 exchange within suburban lawn and urban forest floor. Baltimore Ecosystem Study Annual Meeting. October 23-24, 2019. Baltimore MD, USA.

Vargas R, Villarreal S**. Representativeness of eddy covariance networks across the Americas. AmeriFlux annual meeting. September 17-19, 2019. Boulder, CO, USA.

Vargas R, **Warner DL***, Bond-Lamberty B, Jian J, **Stell E***. Spatial predictions and associated uncertainty of annual soil respiration at the global scale. AGU Chapman conference. August 26-29, 2019. San Diego, CA, USA.

Llamas R*, **Guevara M***, Rorabaugh D, Taufer M, **Vargas R**. Spatial Gap-Filling of ESA CCI Satellite-Derived Soil Moisture based on Linear Geostatistics. ISPRS WG IV/1, Vi/5 and SC Summer School, Geospatial Technologies for Natural Environment Management and Monitoring. Wroclaw University of Science and Technology. August 26-30, 2019. Wroclaw, Poland.

Guevara M*, **Vargas R**, Taufer M. Evaluation of Global Soil Moisture Predictions based on Remote Sensing and Digital Terrain Analysis. Pedometrics. June 2-6 2019, Ontario, Canada.

Capooci M*, **Vargas R**. Using Automated Measurements to Understand Biophysical Controls on Soil CO_2 Efflux in a Tidal Salt Marsh. May 28-31, 2019. Society of Wetland Scientists Annual Meeting, Baltimore, MD, USA.

Hill A*, **Barba J****, Hom J, Patterson M, **Vargas R**. Four years of continuous carbon exchange at the surface from forest and lawn within a suburban neighborhood in Baltimore, Maryland. University of Delaware CANR Graduate Research Symposium. May 3, 2019. Newark, DE, USA.

Capooci M*, **Vargas R**. Patterns and biophysical controls on soil CO_2 efflux in a tidal salt marsh using automated measurements. May 3, 2019. Research Symposium, University of Delaware, College of Agricultural & Natural Resources, Newark, DE, USA.

Llamas R*, **Guevara M***, Rorabaugh D, Taufer M, **Vargas R**. Large-Scale Soil Moisture Modeling Based on Linear Geostatistics and Remotely Sensed Data. 9th Annual University of Delaware Graduate Student's Forum for Research and Creative Works. University of Delaware. April 26, 2019, Newark, Delaware, USA.

Capooci M*, **Vázquez-Lule A***, **Vargas R**. Patterns and drivers of salt marsh carbon fluxes. Delaware Applied Coastal Research Symposium. March 28, 2019. Newark, DE, USA.

Hill A*, **Barba J****, Hom J, Patterson M, **Vargas R**. Four years of continuous carbon exchange at the surface from forest and lawn within a suburban neighborhood in Baltimore, Maryland. Delaware Environmental Institute Graduate Research Symposium. March 7, 2019. Newark DE, USA.

Stell E*, **Guevara M***, **Vargas R**. Spatial Variability of Soil Nitrogen, Nitrogen Deposition, and Biomass Relationships in the Conterminous United States. Delaware Environmental Institute Graduate Research Symposium. March 7, 2019. Newark, DE, USA.

Stell E*, **Guevara M***, **Vargas R**. Soil swelling potential across Colorado: a digital soil mapping approach. Delaware Environmental Institute Graduate Research Symposium. March 7, 2019. Newark, DE, USA.

Llamas R*, **Guevara M***, Rorabaugh D, Taufer M, **Vargas R**. Large-Scale Soil Moisture Modeling Based on Linear Geostatistics and Remotely Sensed Data." Delaware Environmental Institute Symposium. March 7th, 2019, Newark, Delaware, USA.

Barba J**, Poyatos R, **Capooci M***, **Vargas R**. Automated measurements of greenhouse gases fluxes from tree stems and soils: magnitudes, patterns and drivers. 1st Meeting of the Iberian Ecological Society. February 4-7, 2019, Barcelona, Spain.

Capooci M*, **Vargas R**. Using Automated Measurements to Understand the Patterns and Biophysical Controls on CO_2 Efflux in Tidal Salt Marsh Soils. Delaware Wetlands Conference. January 29-30, 2020. Wilmington DE, USA.

Vazquez-Lule A*, **Vargas R**. Carbon Dioxide and Methane Exchange at Ecosystem Scale in a Tidal Salt Marsh of Delaware. Delaware Wetlands Conference. January 29-30, 2020. Wilmington DE, USA.

2018

Bond-Lamberty BP, Bailey VL, Chen M, Gough CM, **Vargas R**. Detection and attribution of climate-driven changes in terrestrial soils. AGU Fall Meeting. December 10-14, *2018*. Washington DC, USA. *(Invited)*

Vargas R, Barba J**, Poyatos R. Spatiotemporal variability of greenhouse gases stem emissions in an upland forest. AGU Fall meeting. December 10-14, *2018*. Washington DC, USA.

Hannun RA, Wolfe GM, Kawa SR, Newam PA, Hanisco TF, Diskin GS, DiGAngi JP, Nowak JB, Barrick JD, Thronhjill KL, Noormets A, **Vargas R**, Clark KL, Kustas WP, Hurtt GC, Ma L. Upscaling airborne eddy covariance fluxes of greenhouse gases using landcover information and temporal trends from towers. AGU Fall meeting. December 10-14, *2018*. Washington DC, USA.

Holm J, Saliendra NZ, Malone S, **Vargas R**, Patterspon MS. Influences of land use, and direction and anthropogenic cycles on urban to rural carbon fluxes in the mid-Atlantic region. AGU Fall meeting. December 10-14, *2018*. Washington DC, USA.

Rojas-Robles NE, Yepez EA, Garatuza-Payan J, Rivera M, Madrigal J, Coronel C, **Vargas R**. Carbon sequestration potential across a successional gradient of tropical dry forest in Northwestern Mexico. AGU Fall meeting. December 10-14, *2018*. Washington DC, USA.

Barba J**, Bradford MA, Brewer PE, Bruhn D, Covey K, van Haren J, Megonigal JP, Nørgaard Mikkelsen T, Pangala SR, Pihlatie M, Poulter B, Rivas-Ubach A, Schadt CW, Terazawa K, **Warner DL**, Zhang Z, **Vargas R**. Tree stems methane emissions research: a path forward. AGU Fall meeting. December 10-14, *2018*. Washington DC, USA.

Villarreal S., Guevara M., Alcaraz-Segura D., **Vargas R.,** Optimizing an Environmental Observatory Network Design Based on Publicly Available Data. AGU Fall meeting. December 10-14, *2018*. Washington DC, USA.

Cavallero N, Sherestha G, Zhu Z, **Vargas R**, Birdsey R, Ste-Marie C. A carbon cycle partnership and program: reaching out towards international engagement and collaborations. AGU Fall meeting. December 10-14, *2018*. Washington DC, USA.

Hayes DJ, **Vargas R**, Bridsey R. A synthesis across the major components of the North American carbon budget. AGU Fall meeting. December 10-14, *2018*. Washington DC, USA.

Trifunovic B*, **Vazquez-Lule A***, **Capooci M***, **Vargas R**. Patterns and Drivers of CO_2 and CH_4 Emissions from a Temperate Salt Marsh Creek. AGU Fall Meeting. December 10-14, *2018*. Washington DC, USA.

Capooci M*, Vargas R. Patterns and biophysical controls on soil CO_2 efflux in a tidal salt marsh using automated measurements. AGU Fall Meeting. December 10-14, *2018*. Washington DC, USA.

Llamas, RM, **Guevara M**, Rorabaugh D, Taufer M, **Vargas R**. Large-Scale Soil Moisture Modeling Based on Linear Geostatistics and Remotely Sensed Data. AGU Fall Meeting. December 10-14, *2018*. Washington DC, USA.

Warner DL*, **Vargas R**, Bond-Lamberty B. Patterns of soil respiration at 1-km spatial resolution across the globe. AGU Fall Meeting. December 10-14, *2018*. Washington DC, USA.

Stell E*, Guevara M*, Vargas R. Soil swelling potential across Colorado: a digital soil mapping approach. AGU Fall Meeting. December 10-14, *2018*. Washington DC, USA.

Vázquez-Lule A*, Vargas R. Contrasting biophysical drivers of ecosystem-scale NEE and CH_4 fluxes across phenological phases in a tidal salt marsh. AGU Fall Meeting. December 10-14, *2018*. Washington DC, USA.

Lichiheb N, Heuer M, **Vargas R**, **Vazquez-Lule A***, St. Laurent K, Senn D Klemenz S, Hahn C, Saylor RD, Myles LT. Measurements of nitrogen and carbon fluxes over coastal salt marsh ecosystem in the northeastern U.S. using eddy covariance systems. AGU Fall Meeting. December 10-14, *2018*. Washington DC, USA.

Vázquez-Lule A*, Colditz R, Herrera-Silveira J, **Guevara M*,** Rodriguez-Zuniga M T, Cruz I, Ressl R, **Vargas R**. Greenness Trends and Carbon Stocks of Mangroves across Mexico. ForestSAT Conference. October 1-5, *2018*. College Park, Maryland, USA

Vázquez-Lule A*, Colditz R, Herrera-Silveira J, **Guevara M*,** Rodriguez-Zuniga M T, Cruz I, Ressl R, **Vargas R**. Greenness Trends and Carbon Stocks of Mangroves across Mexico. IX

Simposio Internacional del Carbono en México. May 16-18, *2018*. Alamos, Sonora, Mexico

Delgado-Balbuena J, YA, Ángeles-Pérez G, Arredondo T, Ayala-Niño F, Bullock S, Castellanos AE, Cueva A, Figueroa-Espinoza B, Garatuza-Payán J, Hinojo-Hinojo C, Maya-Delgado Y, Méndez-Barroso L, Oechel W, Paz-Pellat F, Perez-Ruiz ER, Rodríguez JC, Rojas-Robles NE, Sanchez-Mejia ZM, Uuh-Sonda J, **Vargas R**, Vivoni ER, Watts C. Intercambio neto de carbono en ecosistemas semiáridos de México. IX Simposio Internacional del Carbono en México. May 16-18, *2018*. Alamos, Sonora, Mexico

Villarreal S*, Guevara M*, Alcaraz-Segura D, **Vargas R,** Optimizing an Environmental Observatory Network Design Based on Publicly Available Data. College of Agriculture and Natural Resources Research Symposium, University of Delaware. April 30, *2018*, Newark, DE, USA.

Vázquez-Lule A*, Vargas R. Carbon Fluxes and Phenology Changes in a Delaware Tidal Salt Marsh. College of Agriculture and Natural Resources Research Symposium, University of Delaware. April 30, *2018*. Newark, DE, USA.

Trifunovic B*, Seyfferth A, **Vargas R**. Patterns and Drivers of CO_2 and CH_4 Emissions from a Temperate Salt Marsh Creek. College of Agriculture and Natural Resources Research Symposium, University of Delaware. April 30, *2018*. Newark, DE, USA.

Llamas RM*, **Guevara M***, Rorabaugh D, Taufer M, **Vargas R**. Understanding the feedback between soil moisture and the climate system: a novel gap-filling approach to enhance the quality of soil moisture estimates. College of Agriculture and Natural Resources Research Symposium, University of Delaware. April 30, *2018*, Newark, Delaware, USA.

Capooci M*, Barba J,** Seyfferth A, **Vargas R**. Effects of a storm-surge related salinity decrease on greenhouse gas emissions tidal salt marsh mesocosms. College of Agriculture and Natural Resources Research Symposium, University of Delaware. April 30, *2018*. Newark, DE, USA.

Barba J**, Poyatos R, **Vargas R**. Automated Measurements of CO_2, CH_4 and N_2O fluxes from tree stems and adjacent soils. 12th International Symposium on Biogeochemistry of Wetlands. April 23-26, *2018*. Coral Springs, FL, USA.

Capooci M*, Barba J,** Seyfferth A, **Vargas R**. Effects of a storm-surge related salinity decrease on greenhouse gas emissions tidal salt marsh mesocosms. 8th Annual University of Delaware Graduate Student's Forum for Research and Creative Works. University of Delaware. April 20, *2018*, Newark, Delaware, USA.

Vázquez-Lule A*, Colditz R, Herrera-Silveira J, **Guevara M*,** Rodriguez-Zuniga M T, Cruz I, Ressl R, **Vargas R**. Greenness Trends and Carbon Stocks of Mangroves across Mexico. 8th Annual University of Delaware Graduate Student's Forum for Research and Creative Works. University of Delaware. April 20, *2018*. Newark, Delaware, USA.

Villarreal S*, Guevara M*, Alcaraz-Segura D, **Vargas R.** Optimizing an Environmental Observatory Network Design Based on Publicly Available Data. 8th Annual University of Delaware Graduate Student's Forum for Research and Creative Works. University of Delaware. April 20, *2018*, Newark, Delaware, USA.

Llamas RM*, **Guevara M***, Rorabaugh D, Taufer M, **Vargas R**. Understanding the feedback between soil moisture and the climate system: a novel gap-filling approach to enhance the quality of soil moisture estimates. 8th Annual University of Delaware Graduate

Student's Forum for Research and Creative Works. University of Delaware. April 20, *2018*, Newark, Delaware, USA.

Villarreal S*, Guevara M*, Alcaraz-Segura D, **Vargas R,** Optimizing an Environmental Observatory Network Design Based on Publicly Available Data. The Earth's Carbon Cycle in the 21st Century: Climate, Ecosystems, and Energy. A symposium honoring Susan Trumbore, Benjamin Franklin Medalist in Earth and Environmental Science. University of Delaware, College of Earth, Ocean and Environment. April 18, *2018*, Newark, DE, USA.

Llamas RM*, **Guevara M***, Rorabaugh D, Taufer M, **Vargas R**. Understanding the feedback between soil moisture and the climate system: a novel gap-filling approach to enhance the quality of soil moisture estimates. The Earth's Carbon Cycle in the 21st Century: Climate, Ecosystems, and Energy. A symposium honoring Susan Trumbore, Benjamin Franklin Medalist in Earth and Environmental Science. University of Delaware, College of Earth, Ocean and Environment. April 18, *2018*, Newark, Delaware, USA.

Barba J*, Poyatos R, **Vargas R**. Automated CO_2, CH_4 and N_2O fluxes from tree stems and soils: magnitudes, temporal patterns and drivers. 2018 Research Symposium, University of Delaware, College of Agricultural & Natural Resources. April 30, *2018*. Newark, DE, USA.

Capooci M*, Barba J,** Seyfferth A, **Vargas R**. Effects of a storm-surge related salinity decrease on greenhouse gas emissions tidal salt marsh mesocosms. The Earth's Carbon Cycle in the 21st Century, symposium in honor of Susan Trumbore. April 18, *2018*. Newark, DE, USA.

Barba J**, Poyatos R, **Vargas R**. Automated CO_2, CH_4 and N_2O fluxes from tree stems and soils: magnitudes, temporal patterns and drivers. The Earth's Carbon Cycle in the 21st Century, symposium in honor of Susan Trumbore. April 18, *2018*. Newark, DE, USA.

Trifunovic B*, Seyfferth A, **Vargas R**. Patterns and Drivers of CO_2 and CH_4 Emissions from a Temperate Salt Marsh Creek. The Earth's Carbon Cycle in the 21st Century, symposium in honor of Susan Trumbore. April 18, *2018*. Newark, DE, USA.

Vázquez-Lule A*, Vargas R. Carbon Fluxes and Phenology Changes in a Delaware Tidal Salt Marsh. Delaware Wetlands Conference. January 31 - February 1, *2018*. Wilmington, DE, USA. The Earth's Carbon Cycle in the 21st Century, symposium in honor of Susan Trumbore. April 18, *2018*. Newark. DE, USA.

Warner DL*, **Guevara M***, Inamdar S, **Vargas R.** Upscaling soil-atmosphere CO_2 and CH_4 fluxes across a complex forested landscape. The Earth's Carbon Cycle in the 21st Century, symposium in honor of Susan Trumbore. April 18, *2018*. Newark, DE, USA.

Vázquez-Lule A*, Colditz R, Herrera-Silveira J, **Guevara M*,** Rodriguez-Zuniga M T, Cruz I, Ressl R, **Vargas R**. Greenness Trends and Carbon Stocks of Mangroves across Mexico. Delaware Environmental Institute Symposium. March 16, *2018*, Newark. Delaware, USA.

Llamas, RM*, **Guevara M***, Rorabaugh D, Taufer M, **Vargas R**. Understanding the feedback between soil moisture and the climate system: a novel gap-filling approach to enhance the quality of soil moisture estimates. Delaware Environmental Institute Symposium. March 16, *2018*, Newark, Delaware, USA.

Capooci M*, Barba J,** Seyfferth A, **Vargas R**. Effects of a storm-surge related salinity decrease on greenhouse gas emissions tidal salt marsh mesocosms. Delaware Environmental Institute Symposium. March 16, *2018*, Newark, Delaware, USA.

Villarreal S*, Guevara M*, Alcaraz-Segura D, **Vargas R.** Optimizing an Environmental Observatory Network Design Based on Publicly Available Data. The Earth's Carbon Cycle in the 21st Century: Climate, Ecosystems, and Energy. Delaware Environmental Institute Symposium. March 16, *2018*, Newark, Delaware, USA.

Trifunovic B*, **Warner DL***, Seyfferth A, **Vargas R**. Tidal Influence on Greenhouse Gas Emissions From Water in a Salt Marsh Creek. Delaware Wetlands Conference. January 31 - February 1, *2018*. Wilmington, DE, USA.

Vázquez-Lule A*, Vargas R. Carbon Fluxes and Phenology Changes in a Delaware Tidal Salt Marsh. Delaware Wetlands Conference. January 31 - February 1, *2018*. Wilmington, DE, USA.

Capooci M*, Barba J,** Seyfferth A, **Vargas R**. Effects of a storm-surge related salinity decrease on greenhouse gas emissions tidal salt marsh mesocosms. Delaware Wetlands Conference. January 31 - February 1, *2018*. Wilmington, DE, USA.

2017

Miller JB, Jacobson AR, Bruhwiler L, Michalak A, Hayes DJ, **Vargas R**. Analysis of top-down and bottom-up North American CO_2 and CH_4 emissions estimates in the second State of the Carbon Cycle Report. AGU Fall meeting. December 11-15, *2017*. New Orleans, LA, USA.

Hayes DJ, **Vargas R**, Alin SR, Conant RT, Hutyra L, Jacobson AR, Kurz WA, Liu S, McGuire AD, Poulter B, Woodall CW. SOCCR-2, Chapter 2: a synthesis of the North American Carbon Budget. AGU Fall meeting. December 11-15, *2017*. New Orleans, LA, USA.

Capooci M*, **Barba J****, Seyfferth A, **Vargas R**. Effects of a storm-surge related salinity decrease on greenhouse gas emissions in tidal salt marsh mesocosms. AGU Fall meeting. December 11-15, *2017*. New Orleans, LA, USA.

Guevara M*, Arroyo C, Warner DL, Equihua J, **Vazquez Lule A***, Schwartz A, Tauffer M, **Vargas R**. Global response of the growing season to soil moisture and topography. AGU Fall meeting. December 11-15, *2017*. New Orleans, LA, USA.

Forbich I, Nahrawi HB, Lecrec M, O'Connel J, Mishra DR, Fogarty MC, Edson JB, **Vazquez Lule A***, **Vargas R**, Giblin AE, Alber M. Variation in salt marsh CO2 fluxes across a latitudinal gradient along the US Atlantic coast. December 11-15, *2017*. New Orleans, LA, USA.

Vazquez Lule A*, Colditz RR, Herrera-Silveira J, **Guevara M***, Rodriguez-Zuniga MT, Cruz I, Ressl R, **Vargas R**. Greenness and carbon stocks of mangroves: a climate-driven effect. AGU Fall meeting. December 11-15, *2017*. New Orleans, LA, USA.

Barba J,** Poyatos R, **Vargas R**. Automated CO_2, CH_4 and N_2O fluxes from tree stems and soils: magnitudes, temporal patters and drivers. AGU Fall meeting. December 11-15, *2017*. New Orleans, LA, USA.

Vargas R, **Kowalska N****, **Vazquez Lule A***, Seyfferth A, Reimer J, Cai WJ, Moffat CF. Contrasting extreme flooding events and their influence on carbon dynamics in a salt marsh. AGU Fall meeting. December 11-15, *2017*. New Orleans, LA, USA.

Hannun RA, Wolfe GM, Kaw SR, Newman PA, Hanisco TF, Diskin GS, DiGangi JP, Nowak JB, Barrick JDW, Thornhill II KE, Noormets A, **Vargas R**, Clark KL, Kustas WP. Elucidating Carbon Exchange at the Regional Scale Via Airborne Eddy Covariance Flux Measurements. AGU Fall meeting. December 11-15, *2017*. New Orleans, LA, USA.

Cueva A*, Bullock SH, Mendex-Alonzo R, Lopez-Reyes E, **Vargas R.** *Modelación de la productividad primaria bruta diaria mediante cámaras digitales y datos climáticos*. 8th Simposio Internacional del Carbono en Mexico. May 17-19, *2017*. Ensendada, BC, Mexico.

Vargas R. *The breathing of a salt marsh: chasing vertical and lateral carbon fluxes.* DNERR Research Symposium. April 12, *2017.* Dover, DE, USA.

Harden J, Loisel J, Ryals R, Lawrence C, Blankinship J, Phillips C, Bond-Lamberty B, Todd-Brown K, **Vargas R**, Hugelius G, Nave L, Malhotra A, Silver W, Sanderman J. *Soils in our big back yard: characterizing the state, vulnerabilities, and opportunities for detecting changes in soil carbon storage.* EGU General Assembly. April 23-28, *2017*. Vienna, Austria.

Harden J, Hugelius G, Vergara S, Lawrence C, Blankinship J, Phillips C, Bond-Lamberty B, Todd-Brown K, **Vargas R**, Ryals R, Ahlstrom A, Loisel J, Ogle S, Malhotra A. *Characterizing the state, vulnerabilities, and opportunities for detecting changes in soil carbon storage*. X International Carbon Dioxide Conference. August 21-25, *2017.* Interlaken, Switzerland

Hayes D, **Vargas R**. *The North American Carbon Budget Past, Present and Future*. Joint North American Carbon Program and AmeriFlux PIM. March 27-30, *2017*. Washington, DC, USA.

Barba J**, **Cueva A***, Bahn M, Barron-Gafford G, Bond-Lamberty B, Hanson P, **Jaimes A****, Kulmala L, Pumpanen J, Scott R, Wohlfahrt G, **Vargas R**. *Comparing ecosystem and soil respiration: synthesis of tower-based and soil measurements*. Joint North American Carbon Program and AmeriFlux PIM. March 27-30, *2017*. Washington, DC, USA.

Guevara M*, Arroyo C, Brunsell N, Curz C, Domke G, Equihua J, Etchevers J, Hayes D, Hengl T, Ibelles A, Johnson K, de-Jong B, Libohova Z, Nave L, Ornelas J, Paz F, Ressl R, Schwartz A, Victoria A, Wills S, **Vargas R**. *Mapping organic carbon in the soils of Mexico and the United States*. Joint North American Carbon Program and AmeriFlux PIM. March 27-30, *2017*. Washington, DC, USA.

Soriano-Luna MA, Ángeles-Pérez G, **Guevara M***, **Vargas R**, Vaquera-Huerta H, Valdez-Lazalde JR, Birdsey R, Pan Y, Johnson K. *Above ground biomass and its spatial variability in a Mexican managed temperate forest.* Joint North American Carbon Program and AmeriFlux PIM. March 27-30, *2017*. Washington, DC, USA.

Kowalska N**, **Vargas R**, Moffat C, **Lule A**, Reimer J. *Extreme events and their influence on carbon dynamics of coastal ecosystems.* Joint North American Carbon Program and AmeriFlux PIM. March 27-30, *2017*. Washington, DC, USA.

Nevescanin L, Yepez EA, Johnson K, Garatuza J, **Vargas R**. *Carbon stocks in two successional stages of a dry tropical forest for the establishment of an intensive carbon monitoring site in Northwestern Mexico*. Joint North American Carbon Program and AmeriFlux PIM. March 27-30, *2017*. Washington, DC, USA.

Rojas NE, Yepez EA, Garatuza J, Sanchez-Mejia ZM, Coronel C, Madrigal J, **Vargas R** . *Variations of net ecosystem production and evapotranspiration across a successional gradient of tropical dry forest in Northwestern Mexico*. Joint North American Carbon Program and AmeriFlux PIM. March 27-30, *2017*. Washington, DC, USA.

Krieg C, Inamdar SP, Kan J, **Vargas R**, Johnson ER. *After the Storm: Assessing the Content, Transformation, and Fate of Nitrogen in Floodplain Sediments in Aquatic Ecosystems.* AGU Chapman Conference. January 22-27, *2017*. San Juan, PR, USA.

Petrakis S, Seyfferth A, Kan J, Inamdar SP, **Vargas R.** *Influence of experimental extreme water pulses on greenhouse gas emissions from soils*. AGU Chapman Conference. January 22-27, *2017*. San Juan, PR, USA.

Johnson ER, Inamdar SP, Kan J, **Vargas R**. *POM Pulses: Characterizing the physical and chemical properties of particulate organic matter (POM) mobilized by large storm events and its influence on receiving fluvial systems*. AGU Chapman Conference. January 22-27, *2017*. San Juan, PR, USA.

Vargas R. *Ecological implications of hurricane disturbances: immediate responses, resiliency, and recovery*. AGU Chapman Conference. January 22-27, *2017*. San Juan, PR, USA.

2016

Warner D, Inamdar S, **Vargas R**. *Chemical, physical, and biological controls on the spatial heterogeneity of annual soil CO_2 and CH_4 fluxes*. AGU Fall meeting. December 12-16, *2016*. San Francisco, CA, USA.

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Vargas R and Allen MF. *Immediate effect on soil biomass, carbon and nutrients after hurricane Wilma in a tropical seasonal forest.* ASA-CSSA-SSSA International Annual Meetings. November 12-16, *2006.* Indianapolis, IN, USA (Best paper recognition)

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FUNDED RESEARCH GRANTS

Funding to Vargas as PI: $6,020,496
Funding to Vargas as Co-PI: $6,176,491
Total funding to Vargas: $12,386,987

2024	Unravelling patterns and processes of terrestrial and aquatic carbon fluxes under hydroclimate extremes". PI-Li (PSU) **Co-PI-Vargas** (ASU). DOE $350,000; UD funding $160,000
2024	Improving Machine Vision Systems for Monitoring Ecosystem Phenology. PI Bao (UD), CO-PI **Vargas (UD)**. Delaware NASA/EPSCoR RID Seed Grant Program $33,598
2024-2025	Assessing nitrous oxide emissions from conventional and novel microbial fertilizers. PI Hudell (UD), CO-PIs Miller (UD), **Vargas (UD)**. UD-CANR $72,638
2023-2024	Machine learning for computational LiDAR imaging in Earth Sciences. PI-Arce (UD), Co-PI **Vargas (UD)**. UD Artificial Intelligence Center of Excellence $15,000
2022-2023	Acquisition of an Ultraportable Field CO_2 Isotope Analyzer and a Soil Gas Flux Chamber for Investigating CO_2 Efflux and Stable Carbon Isotopes of CO_2 in Carbon Cycling Research. PI-Seyfferth (UD), Co-PI **Vargas (UD)**. NSF $96,337
2022-2025	STEEP-CF: Storm Treatment Effects on Ecosystem Processes of Coastal Forests. PI **Vargas (UD)**, CO-PIs Syefferth (UD), Hopple (SERC), Bond-Lamberty (PNNL). DOE $1,000,000
2022-2026	Mid-scale RI-1 (M1:IP): A Deep Soil Ecotron facility to explore belowground communities and ecosystem processes. PI-Strickland (UI), Co-PIs Gasch (NDSU), Kayler (UI), **Vargas (UD)**, Crow (UH). *NSF $18,950,955*; UD funding $337,983
2022-2024	Global Respiration Comparison (ResCom): evaluation of satellite constrained top-down and bottom-up respiration estimates and their relationship with model simulations. PI-Ballantine (UM), **Vargas (UD)**, Bond-Lamberty (PNNL); NASA $749,798
2022-2024	High-frequency Data Integration for Landscape Model Calibration of Carbon Fluxes Across Diverse Tidal Marshes. PI-Oikawa (CSU), Co-PIs **Vargas (UD)**, Gough (VCU), Shaffer (Rutgers). DOE $1,000,000
2022-2024	Carbon monitoring systems across Mexico to support implementation of REDD+: continued development and application at the national scale. **PI-Vargas (UD)**, Park (NASA-AMES), Frankenberg (Caltech), Yin (Caltech); NASA $1,161,673
2021-2024	SENSORY: Software Ecosystem for kNowledge discovery – a data-driven framework for soil moisture applications. PI-Taufer (UTK), **Vargas (UD)**; NSF $599,774
2021-2022	Establishing a UD Climate Science Policy Hub. PI Vernon (UD), Co-PIs Siders (UD), **Vargas (UD)**; UNIDEL-UD $446,000

2020-2023	Building a Competitive and Sustainable Delaware Remote Sensing Big Data Center for Cutting-Edge Coastal and Environmental Change Research and Workforce Development. PI Matthaeus (UD), Co-PIs DeLiberty (UD), Leathers (UD), Mondal (UD), Siders (UD), **Vargas (UD)**, Wu (UD), Yan (UD); NASA-EPSCOR $749,807
2019-2020	Carbon analysis of understory and overstory fluxes in changing urban and natural systems. **PI Vargas (UD)**; USFS $15,000
2019-2020	LINKS-GSP: Large Information and Knowledge of Soil respiration using Graph Signal Processing. **PI Vargas (UD)**, Co-PI Arce (UD); UD-NASA-EPSCOR $19,909
2018-2023	SENTINEL: SENsing Threads in Natural Environments using Ligand-receptor modules. PI-Bruntell (Danforth Plant Science Center) *+ 13 CoPIs (including **Vargas [UD]**). DARPA $10,000,000*; UD funding $484,555
2018-2019	Building machine learning blocks to predict soil respiration across the world. **PI Vargas (UD)**, CO-PI Warner (DGS). UD-CANR. $28,275
2017-2022	Carbon monitoring systems across Mexico to support implementation of REDD+: maximizing benefits and knowledge. **PI Vargas (UD)**, CO-PI Ganguly (NASA-Ames). NASA-CMS. $805,626
2017-2018	Collaborative Research: Ecological Knowledge and Predictions: Integrating Across Networks and National Observatories. PI Dietze (BU), CO-PIs **Vargas (UD)**, McLachlan (ND). NSF, $41,443
2017-2021	CIF21 DIBBs: PD: Cyberinfrastructure Tools for Precision Agriculture in the 21st Century PI Taufer (UD), **CO-PI-Vargas (UD)**. NSF, $499,999
2017-2022	CAREER: Unraveling processes for vertical and lateral carbon fluxes in salt marshes: an outdoor laboratory for research and phenomena-driven education. **PI-Vargas (UD)**. NSF, $771,729
2016-2019	HAKER-HPC: HArnessing Knowledge for Environmental Research using High Performance Computing solutions. **PI-Vargas (UDe**, CO-PI Taufer (UD). University of Delaware Strategic Initiative, $38,925
2015-2016	A framework for predicting impacts of climate change on Blue Carbon in estuaries. **PI-Vargas (UD)**, CO-PI Seyfferth (UD), NOAA-DNREC. $49,994
2015-2017	How soils across Delaware will respond to global environmental change? **PI Vargas (UD)**; State of Delaware Federal Research and Development Grant Program. $100,000
2015-2018	Large runoff flux and transformation of particulate nitrogen (PN) following large storms: a critical but unexplored component of N cycling in watersheds. PI-Inamdar (UD), **CO-PI Vargas (UD)**, Kan (SWRC); AFRI-USDA. $450,000
2013-2014	Building global ecological understanding**. PI-Vargas (UD)**, CO-PI Tang (MBL), Dolman (Universiteit Amsterdam), Loescher and Wee (NEON), NSF-Macrosystems Biology. $49,030
2014-2017	Reducing uncertainty in carbon cycle science of North America: a synthesis program across United States and Mexico**. PI-Vargas (UD)**, CO-PI Brunsell (KU), Hayes (UM) USDA. $527,000
2014	Establishment of a monitoring station for greenhouse gas fluxes in a protected estuary in Delaware**. PI-Vargas (UD)**, NASA EPSCoR/RID. $23,258

2014-2015	Environmental assessment of a protected estuary: linking sediment biogeochemistry, greenhouse gas fluxes and climate variability. **PI-Vargas (UD)**, CO-PI Seyfferth (UD), UD-CANR. $39,916
2013-2016	Coupling solid-aqueous-gas phases of carbon and nitrogen across topographic gradients and extreme weather events. **PI-Vargas (UD)**, CO-PI Inamdar (UD), AFRI-USDA. $469,926
2013-2016	A framework for carbon monitoring and upscaling in forests across Mexico to support implementation of REDD+. **PI-Vargas (UD)**, CO-PI Birdsey and Johnson (USDA-FS), NASA-CMS. $574,350
2014	Development of a methodology to assess the CO_2 sequestration potential of different agricultural and forestry sustainable productive systems in the Mexican Mesoamerican Biological Corridor**. PI-Vargas (UD)**, Borlaug Fellowship Program USDA. $27,010
2013-2015	On the immortality of long-lived desert plants. **PI-Vargas (UD)**, UDRF $35,000
2012-2013	Reducing uncertainty in heterotrophic respiration: linking continental experiments, analytical modeling and shared data sets. PI-Bond-Lamberty (PNNL), CO-PI- Mark Harmon (OSU), **Vargas (UD)**, NSF-Macrosystems Biology $87,500
2011-2014	Efecto de la variabilidad climática en los principales flujos de carbono en un ecositema semiárido. **PI-Vargas** (CICESE), CONACyT $100,000
2011-2013	Evaluacion de la disponibilidad y uso eficiente del agua para el desarrollo sustentable de la vitivinicultura en la región noroeste de México. PI- Kretzschmar (CICESE), **CO-PI-Vargas** (CICESE), FOMIX-CONACyT $300,000
2010-2012	Internal project CICESE. **PI-Vargas** (CICESE) $10,000
2011	Estimación de recuperación del carbono después del huracán Wilma en un bosque tropical. **PI-Vargas** (CICESE), CONACyT $2,000
2010-2012	Searching the age of roots of long-lived plants in arid ecosystems. **PI-Vargas** (CICESE), CoPI- Czimczick (UCI). UCMEXUS-CONACyT $25,000
2005	*Dissertation Grant.* **PI-Vargas** (UCR). Mildred E. Mathias Grant $1,000
2005-2007	Potential for soil carbon sequestration in a Mexican tropical seasonal forest *Dissertation Grant.* **PI-Vargas** (UCR). *UC*-MEXUS $11,895
2004- 2006	Soil Embedded Networked systems: soil carbon dynamics at the *pixel* scale for validation and calibration at the landscape scale. **PI-Vargas** (UCR). Kearney Foundation *$*47,980
2004	Dissertation grant. **PI-Vargas** (UCR). UCR-graduate division. $1,000
2002-2007	Soil carbon dynamics in a seasonally dry tropical forest in Mexico. **PI-Vargas** (UCR). CONACyT *$*85,000

RESEARCH GRANTS UNDER REVIEW

NA

TEACHING

Tenure Track

2024, 2025
PLSC802: Professional Development (Graduate level: **1 credit**)

2015, 2017, 2019, 2020, 2022, 2023
PLSC667: Field methods in soil-air-water (Graduate level at UDel: **3 credits**)

2014, 2016, 2018, 2024
PLSC 412/612 *Ecosystem Ecology* (Undergraduate/Graduate level course at UDel: **3 credits**)

2013 *PLSC667: Field methods and analysis* (Graduate level at UDel: **2 credits**)

2012 *Population and Ecosystem Ecology* (Graduate level at CICESE: **3 credits**)

2012 *EESS 212: Measurements in Earth Systems* (Graduate level at Stanford University: **3 credits**). Co-taught with 6 faculty members at Stanford University with 15% engagement

2011, 2012 *Soil Ecology*. (Graduate level at CICESE: **3 credits**)

Pre-Tenure Track

2005, 2007 *ENSC 003: Contemporary Issues on Environmental Sciences*. (Undergraduate level at University of California, Riverside: **3 credits**). *Teaching Assistant*.

2007 *Instructor* for summer course "Sensing Technology for the Soil Environment". Center for Embedded Networked Sensing, University of California, Los Angeles
-Taught 3 one-hour lectures and assisted students with deployments of environmental soil sensors

OUTREACH AND EXTENSION

National

2019 *The breathing of an estuary*. Make a Splash Water Festival (5th grade students). Delaware National Estuarine Research Reserve. April 4th, 2019. St Jones Reserve, Dover, DE.

2018 *The breathing of an estuary*. Make a Splash Water Festival (4th grade students). Delaware National Estuarine Research Reserve. April 4th, 2018. St Jones Reserve, Dover, DE.

2017 *The breathing of an estuary*. Make a Splash Water Festival (4th grade students). Delaware National Estuarine Research Reserve. April 4th, 2017. St Jones Reserve, Dover, DE.

2016 *The breathing of an estuary*. Make a Splash Water Festival (4th grade students). Delaware National Estuarine Research Reserve. April 5th, 2016. St Jones Reserve, Dover, DE.

2014 *Principles of global environmental change and the global carbon*. New Castle County Cooperative Extension Office. Master Gardner Training Program. September 29, 2014. Newark, DE

International

2021 *Manejo de bases de datos y mapeo digital de propiedades edáficas vinculadas a la sostenibilidad del suelo.* International workshop initiative Universidad de Almeria, ESPOL, CAESCG. June 21-25, 2021. Ecuador (online workshop).

2014 *Capacity Building: Carbon dynamics and intensive monitoring sites for REDD+.* Second Regional Workshop of forest Monitoring. Technical SE Asia Initiative GEO GFOI, USAID. June 23-28, 2014. Katmandu, Nepal.

PROFESSIONAL MEMBERSHIPS

American Geophysical Union (2005 - present)
Ecological Society of America (2007 - present)
American Association for Advancement of Science (2017-present)
European Geophysical Union (2020 - present)
Society of Wetland Scientists (2024-present)
Geochemical Society (2024-present)
Soil Science Society of America (2005-2009, 2023-present)
International Association for Mathematical Geosciences (2024-present)
Sociedad Científica Mexicana de Ecología (2011-2012)
New York Academy of Science (2007-2008)
Association for Tropical Biology and Conservation (2005-2009)

ACADEMIC SERVICE

- National and International committees:

2025-present Chair, Biogeosciences Fellows Committee, American Geophysical Union (AGU)
2024-present Biological and Environmental Research Advisory Committee (BERAC), DOE.
2018-present Member of the committee on Science and the Arts in the Earth and Environmental Science Cluster of *The Franklin Institute*
2017-2024 Member of the AmeriFlux steering committee
2014-2024 Member of NASA Carbon Monitoring System Science Team (CMS ST)
2023 Member of USDA's National Climate Change Working Group to develop a National Climate Change Roadmap (NCCR) and Implementation Plan
2016-2022 Member of the U.S. National Committee for Soil Science (USNC/SS). *National Academies of Sciences, Engineering and Medicine*.
2012-2023 Scientific committee member for the *Mexican Carbon Program*
2014-2020 Science Leadership Group member for the *North American Carbon Program*
2019 Member of Ecological Society of America Stat Section's Ecological Forecasting Outstanding Publication award.
2012-2019 Scientific committee member for the *North American Forestry Commission* (Atmosphere group)
2012-2019 Scientific committee member of CarboNA.
2010-2016 Coordinator of the Mexican eddy covariance network (MexFlux) and co-founder of MexFlux (2010)

2011-2018 Member of the Soil Technical Working Group for the National Ecological Observatory Network (NEON)
2003 President and co-founder of the Mexican Student Association at the University of California, Riverside

- Editorial Service:
2020-present Handling Editor: *Oecologia*
2016-present Associate Editor: *JGR-Biogeosciences*
2020-2024 Guest Editor: *Environmental Research Letters*
http://iopscience.iop.org/journal/1748-9326/page/Carbon-Monitoring-Systems
2022-2023 Guest Editor: *Agricultural and Forest Meteorology*
2020-2022 Editorial Advisory Board: *Global Change Biology*
2018-2019 Guest Editor: *Soil Systems*
http://www.mdpi.com/journal/soilsystems/special_issues/Soil_Trace_Gases
2017-2019 Editorial Advisory Board: *Elementos para Políticas Públicas (publication of the Mexican Carbon Program; in Spanish)*
2011-2017 Editorial Advisory Board: *Global Change Biology*
2007-2010 Editor: *FluxLetter:* the newsletter of FLUXNET. *https://fluxnet.ornl.gov/newsletters*
2009-2010 Associate Faculty Member: *Faculty of 1000* (2009-2010)
http://www.facultyof1000.com/

- Reviewer for scientific journals:
Total of 221 manuscripts reviewed since 2007; 34 different journals

Agricultural and Forest Meteorology, Agriculture Ecosystems and Environment, Biogeochemistry, Biogeosciences, Biotropica, BioScience, Carbon Management, Chemosphere, Ecology, Environmental Research Letters, Geoderma, Global Biogeochemical Cycles, Global Change Biology, Geophysical Research Letters, Global and Planetary Change, Journal of Arid Environments, Journal of Geophysical Research-Biogeosciences, Land Degradation and Development, Nature, Nature Climate Change, Nature Communications, Nature Geosciences, New Phytologist, Plant and Soil, PlosONE, PNAS, Remote Sensing of Environment, Soil Biology and Biochemistry, Scientific Reports, Soil Science Society of America Journal, Science, Science of the Total Environment, Terra Latinoamericana, Tree Physiology, Vadose Zone Journal.

- Proposal reviewer for:
International
CONACyT (México; 2013), NRC (UK; 2013), FWO (Belgium; 2013)

National
NOAA (2014), DOE (2015, 2016), NSF (2017, 2018, 2018, 2023, 2024), NASA (2018), USDA (2018, 2019, 2024)

- Chair or member of organizing committees of scientific meetings:
2021 Organizing committee member of the 12th *Simposio del Programa Mexicano*

del Carbono. October 13-15, 2021. Tecnológico de Monterrey, Monterrey, Mexico.

2020-2021 Planning Committee member for workshop on "Exploring a Dynamic Soil Information System". *National Academies of Sciences, Engineering, and Medicine.* Washington, DC, USA.

2020 Organizing committee member of the 11th *Simposio del Programa Mexicano del Carbono*. October 28-20, 2020. Universidad Autónoma Metropolitana, Xochimilco, Mexico.

2016-2017 Organizing committee member of the 6th NACP Principal-investigators meeting. March 2017. Washington, DC, USA.

2014-2015 Co-Chair of the organizing committee for the 5th NACP Principal-investigators meeting. February 2015. Washington, DC, USA

2013 Organizing committee member of the 4th *Simposio del Programa Mexicano del Carbono*. May 20-24, 2013. COLPOS, Texcoco, Mexico.

2013 Co-Chair of the Biogeosciences section for the American Geophysical Union meeting of the Americas 2013, Cancun, Quintana Roo, Mexico

2012-2013 Organizing committee member of the 4th NACP all-investigators meeting. February 4-7, 2013. Albuquerque, NM, USA

- Session Chair and Convener in scientific meetings:

2021 *MexFlux: past, present, and future directions of carbon and water fluxes monitoring Mexican ecosystems* organized by. Tarin T, Alvarado-Barrientos S, Yepez E, **Vargas R**. AmeriFlux meeting. September 20-22, 2021. Online meeting.

2020 *Enhancing Representativeness and Collaboration Across the Americas* organized by. Villarreal S, Perez J, **Vargas R**. AmeriFlux meeting. October 6, 2020. Online meeting.

2019 *Disturbance Impacts on Ecological and Biogeochemical Processes in Coastal Wetlands* by Forbich I, Gough C, Schafer K, **Vargas R**. AGU Fall meeting. December 9-13, 2019. San Francisco, CA, USA

2018 *Forest CO_2, CH_4, and N_2O emissions: magnitudes, patterns, and pathways* organized by Barba J and **Vargas R**. AGU Fall meeting. December 10-14, 2018. Washington, DC, USA. *(Poster session)*

2018 Ecological knowledge and predictions: integrating across networks and national observatories. University of Arizona. February 19-21, 2018. Tucson, AZ, USA

2015 *Building Global Ecological Understanding* organized by Myers J, **Vargas R**, Tang J, Loescher H. AGU Fall meeting. December 14, 2015. San Francisco, CA, USA. *(Town Hall session)*

2015 *Building Global Ecological Understanding* organized by **Vargas R**, Jaimes A, Tang J, Dolman H, Loescher H, Wee B. ESA annual meeting. August 11, 2015. Baltimore, MD, USA. *(Special Session)*

2013 *Bridging Scales in Soil-Plant-Atmosphere Interactions* organized by Keim R, Levia D, **Vargas R**, Rauscher S. AGU Fall meeting. December 9-14, 2012. San Francisco, CA, USA.

2013 *Bilateral Network Collaboration: Unifying Climate and Carbon Science Goals Between Mexico and the United States* organized by Taylor J, Lara Lara J, **Vargas R**, Wee B.

American Geophysical Union meeting of the Americas. May 14-17, 2013, Cancun, Quintana Roo, Mexico.

2013 *La ecología y las biogeociencias en México: estudios interdisciplinarios de los procesos biofísicos en ecosistemas terrestres.* organized by Arredondo T, **Vargas R**, Yepez EA. IV Congreso Mexicano de Ecología. March 18-22, 2013, Villahermosa, Tabasco, Mexico.

2012 *Nonstructural Carbon in Plants: Observations, Modeling, and Theory* organized by Czimczik C, Carbone M, **Vargas R**, Richardson A. AGU Fall meeting. December 3-7, 2012. San Francisco, CA, USA.

2011 *Belowground Carbon Allocation and Retention: Frontiers in Biogeosciences and Climate Change* organized by Lucas RW, Hasselquist NJ, **Vargas R.** AGU Fall meeting. December 5-9, 2011. San Francisco, CA, USA.

2011 *Interacting Biogeochemical Cycles: Linking Carbon, Water, and Nutrient Fluxes From Organisms to Globe* organized by Richardson AD, Drewry D, Papale D, Reichstein M, **Vargas R**. AGU Fall meeting. December 5-9, 2011. San Francisco, CA, USA.

2011 *Flujos de agua y carbono en ecosistemas terrestres: una visión para México* organized by Yépez E and **Vargas R**. 2ndo Congreso de la Sociedad Científica Mexicana de Ecología. April 5, *2011*. Veracruz, Ver. Mexico

2010 *Interacting Biogeochemical Cycles: Linking Carbon, Water, and Nutrient Fluxes From Organisms to Globe* organized by Drewry D, Papale D, Reichstein M, **Vargas R**, Richardson AD. AGU Fall meeting. December 13-17, 2010. San Francisco, CA, USA.

2010 *Data Assimilation and Multiscale Methods for Improving Biogeochemical Models Across Multiple Scales* organized by Ogle K, Quaife TL, Stoy PC, **Vargas R**. AGU Fall meeting. Dicember 13-17, 2010. San Francisco, CA, USA.

2009 *Ecosystem models, data assimilation and flux networks: synthesis efforts from regional to global scales* organized by Goeckede M, **Vargas R**, Baldocchi DD. AGU Fall meeting. December 14-18, 2009. San Francisco, CA, USA.

2009 *Regional-global flux synthesis* session organized by Baldocchi DD and **Vargas R**. AMERIFLUX Science team meeting. September 21-23, 2009. Washington, DC, USA

2009 *FLUXNET Modeling and Data Workshop* organized by Baldocchi DD, **Vargas R,** Reichstein M, Papale D. February 10-13, 2009. Asilomar State Park, Asilomar, CA, USA

2008 *Role of Flux Networks in Biogeosciences: Experiments and Modeling* organized by Baldocchi DD, **Vargas R**. December 15-19, 2008. San Francisco, CA, USA.

2008 *Terrestrial Ecosystem Respiration: Identifying Sources and Controls* organized by Carbone M and **Vargas R**. AGU Fall meeting. December 15-19, 2008. San Francisco, CA, USA.

2008 *Regional-global flux synthesis* session organized by **Vargas R**. AMERIFLUX Science team meeting. October 15-17, 2008. Boulder, CO, USA

- University of Delaware service:

University level

2023-2025 Director, Water Science and Policy graduate program

2023 Panelist, UD ADVANCE P&T for Associate Professors

2022-2025 Member *Data Science Institute* (DSI) "Research Working Group"

2022-2023 Search committee for "Vice President of Research, Innovation and Scholarship"

2018-2025 Faculty Council for the *Data Science Institute* (DSI)
2015-2024 Member of the *Water Science & Policy* graduate program committee
2016 Evaluator for student presentations at the 6th Annual Graduate Research Forum
2014 Presenter at EPSCoR workshop to discuss educational opportunities in academia with undergraduates. St Jones Reserve, Dover, DE

College level
2022-2024 Alternate Member CANR Promotion and Tenure committee
2023 CANR professional development series
2022 CANR symposium poster judge
2019 Search committee for "Grant Writer" at CANR
2019 Proposal reviewer for CANR seed grant competition
2018-2022 Co-chair of strategic initiative at CANR: *Climate Change, Adaptation and Mitigation*
2018-2019 Reviewer for CANR Unique Strength PhD fellowships
2018 Evaluator for student presentations at the Annual Graduate CANR student symposium
2018 Presenter at the "New Faculty Mentoring Series"
2016 Proposal reviewer for CANR seed grant competition
2015 Search committee for "Grant Manager Administrator" at CANR
2013-2014 Member of "Worrilow renovation committee" at CANR

Department level
2023-2025 Member GSP Promotion and Tenure committee
2022-2025 Member PLSC Promotion and Tenure committee
2022-2023 Faculty search committee chair for "Agroecology/Sustainable Crop Systems" at PLSC
2022 Organizer for strategic hiring plan committee for "Soils and Biogeochemistry Group"
2019 Organizer for strategic hiring plan committee for "Soils and Biogeochemistry Group"
2018-2019 Committee member to develop "BS in GIScience and Environmental Data Analytics"
2017-2021 Member of "Honors" committee for PLSC
2017 Member PLSC Promotion and Tenure committee
2016-2018 Member of "Curriculum" committee for PLSC
2017-2018 Faculty search committee member for "GIS and Environmental Data" at the Department of Geography
2017 Faculty search committee member for "Department Chair" at PLSC
2016-2017 Faculty search committee member for "Agriculture Genomics" at PLSC
2015 Member PLSC Promotion and Tenure committee
2014 Member of the ad hoc "Space committee" at PLSC
2013 Member of Promotion and Tenure committee for PLSC
2013-2014 Faculty search committee member for "Urban Forestry" at PLSC
2013 Faculty search external committee member (Representing PLSC from UD) for "Ecophysiology" at CICESE, Mexico

MENTORSHIP

Visiting scholars:

Name	*Institution*	*Year*
Shuzheng Luo	Xinzhou Normal University	2024-2025

Postdoctoral fellows:

Name	*Institution*	*Year*
Huong Van Le	University of Delaware	2021-present
Clement Lopez	University of Delaware	2023
Tonantzin Tarin	University of Delaware	2018-2020
Mario Guevara	University of Delaware	2020
Josep Barba	University of Delaware	2016-2019
Natalia Kowlaska	University of Delaware	2016-2017
Aline Jaimes	University of Delaware	2014-2016
Zulia Sanchez	University of Delaware	2014-2015
Janet Reimer	University of Delaware	2014
Janet Reimer	CICESE*	2012-2013

PhD students:

Name	*Degree*	*Institution*	*Graduation Date*
Rosmery Cruz	PhD	Arizona State University	*August 2030 (expected)*
Jumi Lim	PhD	Arizona State University	*August 2029 (expected)*
Himal Acharya	PhD	Arizona State University	*August 2028 (expected)*
Elena Diez	PhD	Arizona State University	*August 2027 (expected)*
Manan Sapuria	PhD	University of Delaware	*May 2025*
(co advised with Pinki Mondal)			
Elizabeth Smith	PhD	University of Delaware	*August 2024*
Ricardo Llamas	PhD	University of Delaware	*August 2023*
Andrew Hill	PhD	University of Delaware	*January 2023*
Margaret Capooci	PhD	University of Delaware	*August* 2022
Alma Vazquez-Lule	PhD	University of Delaware	*August* 2021
Mario Guevara	PhD	University of Delaware	*January 2020*
Samuel Villarreal	PhD	University of Delaware	*January* 2019
Daniel Warner	PhD	University of Delaware	*May 2018*
(co advised with Shreeram Inamdar)			
Alejandro Cueva	PhD	CICESE*	*November 2017*
(co advised with Stephen Bullock)			
Adam Pearson	PhD	University of Delaware	*August 2015*
(co advised with James Pizzuto)			

MS/MSc students:

Rosmery Cruz	MS	University of Delaware	*July 2025*
Nestor Porras	MS	University of Delaware	*August 2024*
(co advised with Gonzalo Arce)			
Dustin Braden	MS	University of Delaware	*January 2023*
(co advised with Pinki Mondal)			
Jocelyn Wardrup	MS	University of Delaware	*July 2021*

Emma Stell	MS	University of Delaware	*November 2020*
Branimir Trifunovic	MS	University of Delaware	*September 2019*
Sandra Petrakis	MS	University of Delaware	*June 2016*
Siddhisanket Raskar	MS	University of Delaware	*December 2014*
Carlos Aguirre	MSc	CICESE*	*December 2014*
Alejandro Cueva	MSc	CICESE*	*August 2013*
Samuel Villarreal	MSc	CICESE*	*November 2012*
Elievf León	MSc	CICESE*	*November 2012*

Student committee membership:

Name	*Degree*	*Institution*	*Graduation Date*
Mindy Priddy	PhD	VCU	August 2028 (expected)
Piyush Mehta	PhD	University of Delaware	*August 2024*
Paula Olaya	PhD	University of Tennessee	July 2024
Farid Qamar	PhD	University of Delaware	August 2023
Sean Fettrow	PhD	University of Delaware	*August 2023*
Shane Franklin	PhD	University of Delaware	August 2023
Kevin Ongare	MS	University of Delaware	*July 2022*
Arturo Montero	MS	UNAM*	*September* 2020
Nidia Rojas	PhD	ITSON*	*August 2020*
Abdul Qadir	MS	University of Delaware	*May 2020*
Chelsea Krieg	MS	University of Delaware	*May 2018*
Cesar Hinojo Hinojo	PhD	Universidad de Sonora*	*December 2017*
William Goldman	MS	University of Delaware	*July 2017*
Erin Johnson	MS	University of Delaware	*July 2017*
Kathryn Wheeler	BS	University of Delaware	*May 2017*
Qiaoqi Sun	PhD	University of Adelaide ‡	November 2016
Flavia Savi	PhD	Tuscia University §	June 2016
William Teasley	MS	University of Delaware	June 2016
Josue Delgado	PhD	IPICYT*	*May 2016*
Martha Vargas	MSc	ITSON*	*December 2015*
Frances Bothfeld	MS	University of Delaware	*December 2015*
Nancy Nieblas	MSc	CICESE*	*November 2012*
Francisco Morales	MSc	CICESE*	*November 2012*
Abraham Torres	MSc	CICESE*	*October 2012*
Celia Vázquez	MSc	COLEF*	*August 2012*
Ulises Rodríguez	MSc	IPICYT*	*September 2011*
Alejandro Cueva	Licenciatura	ITSON*	May 2011

*Note: Institutions in *Mexico, § Italy, ‡ Australia*
IPICYT = Instituto Potosino de Investigación Científica y Tecnológica
ITSON = Instituto Tecnológico de Sonora
COLEF = El Colegio de la Frontera Norte
UNAM = Universidad Nacional Autónoma de México

Undergraduate students advised at the University of Delaware:

Name	*Degree*	*Year*
Lucas Rager	Computer Science	2019-2020
Matthew Birney	Biochemistry	2019
Paul Mey	Environmental Sciences	2019
Emma Stell	Environmental Sciences	2017-2018
Courtney Rempfer	Environmental Engineering	2016-2017
Wallace Dahoe	Computer Science	2014-2015
Katelyn Csatari	Environmental Engineering	2014-2015
Kelsey McWilliams	Environmental Engineering	2013-2014
Madison Gutekunst	Environmental Engineering	2013-2014; 2016-2017

AWARDS AND RECOGNITIONS OF ADVISEES

Total funds received by advisees: $1,032,650
(These funds are not included in the section "Funded Research Grants")

UD = University of Delaware; UG = undergraduate

Year	***Student***	***Institution***	***Degree***	***Award/Recognition***
2025	Manan Sarupria	UD	PhD	Graduate Research Award, Department of Geography and Spatial Sciences
2024	Margaret Capooci	UD	PhD	ESA Biogeosciences Sulzman Award
2022	Andrew Hill	UD	PhD	The Donald L. and Joy G. Sparks Graduate Fellowship in Soil Science
2022	Margaret Capooci	UD	PhD	Presidential Management Fellow
2021	Andrew Hill	UD	PhD	DENIN Graduate Fellowship
2021	Margaret Capooci	UD	PhD	Outstanding Student Presentation Award NACP meeting
2021	Andrew Hill	UD	PhD	Outstanding Student Presentation Award NACP meeting (top 5)
2020	Alma Vazquez-Lule	UD	PhD	John A. Knauss Marine Policy Fellowship
2020	Elizabeth Smith	UD	PhD	NSF-Graduate Research Fellowship
2019	Margaret Capooci	UD	PhD	President; DE-AWRA named outstanding student chapter of AWRA
2019	Margaret Capooci	UD	PhD	NSF-GROW fellowship
2019	Elizabeth Smith	UD	MS	University Graduate Scholars Award
2019	Josep Barba	UD	*(postdoc)*	1st place at UD-CANR Symposium (Postdoc poster presentation)

2018	Elizabeth Smith	UD	MS	University Graduate Scholars Award
2018	Andrew Hill	UD	PhD	CANR Graduate Fellowship
2018	Alma Vazquez	UD	PhD	DENIN Graduate Fellowship
2018	Alma Vazquez	UD	PhD	Best poster by a graduate student Mexican Carbon Program Symposium
2018	Branimir Trifunovic	UD	MS	1st place at UD-CANR graduate student Symposium (MS poster presentation)
2018	Alma Vazquez	UD	PhD	2nd place at UD-CANR graduate student Symposium (PhD poster presentation)
2018	Margaret Capooci	UD	PhD	NSF-Graduate Research Fellowship
2018	Margaret Capooci	UD	PhD	1st place at the UD-DENIN symposium (poster presentation)
2018	Margaret Capooci	UD	PhD	1st place at the Delaware Wetlands Conference (poster presentation)
2017	Branimir Trifunovic	UD	MS	WS&P Graduate Fellowship
2017	Margaret Capooci	UD	PhD	President; DE-AWRA named outstanding student chapter of AWRA
2017	Margaret Capooci	UD	PhD	DENIN Graduate Fellowship
2016	Margaret Capooci	UD	PhD	WS&P Graduate Fellowship
2016	Alma Vazquez	UD	PhD	CONACYT Graduate Fellowship
2016	Madison Guteknst	UD	UG	DWRC Summer Fellowship
2016	Courtney Rempfer	UD	UG	DWRC Summer Fellowship
2016	Alejandro Cueva	CICESE	PhD	Outstanding Student Presentation 7th Mexican Carbon Program Symposium (oral presentation)
2015	Sandra Petrakis	UD	MS	President; DE-AWRA named outstanding student chapter of AWRA
2015	Mario Guevara	UD	PhD	3rd place DENIN symposium (oral presentation)
2015	Mario Guevara	UD	PhD	CONACYT Graduate Fellowship
2014	Katelyn Csatari	UD	UG	DWRC Summer Fellowship
2014	Wallace Dahoe	UD	UG	EPSCoR Summer Fellowship
2014	Samuel Villarreal	UD	PhD	CONACYT Graduate Fellowship
2014	Sandra Petrakis	UD	MS	Best Student Presentation WSP symposium (poster presentation)
2013	Kelsey McWilliams	UD	UG	DWRC Summer Fellowship

MEDIA COVERAGE OF RESEARCH

2025 UDaily: Carbon credit quality: https://tinyurl.com/j4jfrjsf
2024 UDaily: Methane mystery: https://tinyurl.com/ypxshk7f
2022 UDaily: Global environmental advocate: https://tinyurl.com/y9j5377r
2021 UDaily: Researchers with influence: https://tinyurl.com/mrturr6m

2021 UDaily: Looking deeper into the soil: https://tinyurl.com/bdewrpwe
2021 Science News: New observatory to probe the mysteries of Earth's "forgotten" subsoil. *Science* (374)6565:250 https://www.science.org/content/article/new-observatory-probe-mysteries-earth-s-forgotten-subsoil
2021 National Public Radio – Climate change brings changes to coastal wetlands' carbon absorption https://www.npr.org/2021/05/08/994996939/climate-change-brings-changes-to-coastal-wetlands-carbon-absorption
2021 Delaware Public Media - Coastal marshes help mitigate climate change. So why is this Delaware marsh contributing to it? https://www.delawarepublic.org/post/coastal-marshes-help-mitigate-climate-change-so-why-delaware-marsh-contributing-it
2021 Delaware Public Media - UD research challenges established thinking on salt marshes and carbon https://www.delawarepublic.org/post/enlighten-me-ud-research-challenges-established-thinking-salt-marshes-and-carbon
2021 Delaware Public Media - Enlighten me: methane and salt marshes https://www.delawarepublic.org/post/enlighten-me-methane-and-salt-marshes
2020 UDaily: Methane in tidal marshes https://www.udel.edu/udaily/2020/december/methane-angelia-seyfferth-rodrigo-vargas-wetlands-marshes/
2019 UDaily: Very influential researchers. https://www.udel.edu/udaily/2019/november/highly-cited-researchers-2019/
2019 UDaily: Mapping soil moisture in high definition. https://www.udel.edu/udaily/2019/december/soil-moisture-measurement-model-rodrigo-vargas-mario-guevara/
2019 NPR: Getting fire from a tree without burning the wood. https://www.npr.org/2019/06/04/727976646/getting-fire-from-a-tree-without-burning-the-wood
2019 UDaily: North America's carbon cycle https://www.udel.edu/udaily/2019/march/rodrigo-vargas-second-state-carbon-cycle-report/
2018 EurekAlert! AAAS: As temperatures rise, Earth's soil is 'breathing' more heavily https://www.eurekalert.org/pub_releases/2018-08/dnnl-atr072918.php
2018 UDaily: Big Data for Carbon Monitoring Systems http://www.udel.edu/udaily/2018/april/rodrigo-vargas-nasa-carbon-monitoring/
2018 UDaily: Near-term Ecological Forecasting http://www.udel.edu/udaily/2018/march/rodrigo-vargas-ecological-forecasting/
2017 ScienceDaily: Methane emissions from trees https://www.sciencedaily.com/releases/2017/03/170330190304.htm
2017 Phys.org: 'Sink' or swim for salt marshes https://phys.org/news/2017-10-salt-marshes.html
2017 ScienceDaily: Drought-affected trees die from hydraulic failure and carbon starvation

https://www.sciencedaily.com/releases/2017/08/170807111505.htm

2017 UDaily: Vargas uses St Jones Laboratory to investigate Blue Carbon
http://www.udel.edu/udaily/2017/october/rodrigo-vargas-NSF-faculty-award/

2017 UDaily: Methane emissions from trees
http://www.udel.edu/udaily/2017/march/methane-emissions-from-trees/

2015 UDaily: International Year of Soils
http://www.udel.edu/udaily/2015/jan/soil-carbon-012015.html

2014 UDaily: Global Solutions
http://www.udel.edu/udaily/2015/aug/carbon-cycle-081114.html

2013 UDaily: Protecting forests
http://www.udel.edu/udaily/2014/oct/mexico-deforestation-100813.html

2013 *Radio interview for the project:* "Venga a tomar café con nosotros" *radio UNAM 860 AM; Mexico City, Mexico*. (Interview in Spanish)

2012 *Publication highlighted in Environmental Research Web*. See full commentary by Liz Kalaugher at: http://environmentalresearchweb.org/cws/article/news/50883

2010 ScienceDaily: Breath of the Earth: Cycling carbon through terrestrial ecosystems
https://www.sciencedaily.com/releases/2010/07/100705190604.htm

2010 *Publication evaluated in Faculty 1000*. See full evaluation and comments by Christian Körner at: https://f1000.com/prime/1759956

2008 *Integrating sensors and observations in soils*. Research highlights in *CSA News* August 2008 V53 N08:6-7. ASA, CSSA, SSSA.

NON-ACADEMIC RECOGNITION

1994-1996	Mexican National Sport Council Scholarship (CONADE-SEP)
1994-1996	Member of the Mexican National Kayak Team
1994	15th place at the World Junior Kayak Championship (5 km K-1)
1994	3rd place at the Pan-American Junior Kayak Championship (200m, 500m, 1000m K-4)
1991-1996	Winner (1st, 2nd or 3rd place) of Mexican National Kayak Championships (multiple distances K-1, K-2, K-4)
1994-1996	Mexican National Sport Council Scholarship (CONADE-SEP)

LANGUAGES SPOKEN

Spanish (native language), English (fluent), French (fair speaking)