

August 2021

Víctor Hugo Gutiérrez-Vélez

EDUCATION

- 2013 **Columbia University.** New York, NY. USA.
Doctor of Philosophy.
Ecology and Evolutionary Biology.
- 2010 **Columbia University.** New York, NY. USA.
Master of Philosophy.
Ecology and Evolutionary Biology.
- 2007 **Clark University.** Worcester, MA. USA.
Master of Arts
Geographic Information Science for Development and Environment.
- 2000 **National University of Colombia.** Medellin, Colombia.
Bachelor of Science
Forestry.

DOCTORAL DISSERTATION

Oil palm expansion and land cover changes in the Peruvian Amazon: implications for forest conservation and fire mitigation. 2013. Advisor: Ruth DeFries.

POSITIONS HELD

- 2016-Present **Assistant Professor.** Department of Geography and Urban Studies. Temple University.
- 2018-Present **Faculty Fellow.** Center for Sustainable Communities. Temple University
- 2013-2015 **Postdoctoral Research Scientist.** Columbia University- Center for International Forestry Research (CIFOR). Developing Systems for reducing emissions from land use.
- 2003-2005 **Executive Director.** Carbono & Bosques. Research Center on Ecosystems and Global Change (C&B). Medellin-Colombia. 2003 –2005.
- 2003-2005 **Chief editor.** Cambium. Newsletter on Global Change of the Research Center on Forest and Global Change. Medellin-Colombia. 2003 – 2005.
- 2002-2003 **Research Director.** Carbono & Bosques. Research Center on Ecosystems and Global Change (C&B). Medellin-Colombia. 2002 –2003.

2001-2003 **Associate researcher and adjunct teacher.** National University of Colombia. Medellin-Colombia. 2001 –2003.

CONSULTANCIES

Consultant. Center for International Forestry Research (CIFOR). Building capacity for the implementation of a research program on socio-environmental changes in post-conflict landscapes in Colombia September – October 2015

Consultant. USAID - Winrock International. Global Climate Change – Carbon Reporting Initiative Cooperative agreement. Tool development and data underlying tools on agroforests and forest plantations. June 2008.

Consultant. Center for International Forestry Research (CIFOR). Identification of peatland degradation in the Peruvian Amazon. October 2012 – July 2013.

Research Intern. Winrock international. Turners Falls, MA. June – July 2006.

Technical Director. Conservation International – ACEE - C&B.
Identification and evaluation of optimal areas for the implementation of a carbon sequestration project under the Clean Development Mechanism (CDM) as a support for biodiversity conservation in the North Andean biological corridors of South America. August – December 2005.

Technical Director. PROCUENCA-ACEE – C&B.
Implementation of a carbon sequestration project under the Clean Development Mechanism (CDM) in the watershed of the Chinchina river-Colombia. Phase I. July – September 2005.

Technical Director. Water Utility Company of the City of Bogota-ACEE – C&B.
Feasibility study for the implementation of a carbon sequestration project under the Clean Development Mechanism (CDM) in strategic areas for the conservation of fresh water resources in the city of Bogota-Colombia. February – June 2005.

Technical Director. Ministry of Agriculture of Colombia-ACEE – C&B.
Technical and economic feasibility for the implementation of a carbon sequestration project under the Clean Development Mechanism (CDM) in the project: The Renaissance of the Orinoco Savannas of Colombia. February – June 2005.

Technical Director. Municipality of Tauramena - ACEE– C&B.
Pre-feasibility study for the restoration of the Mata de la Urama locality through the implementation of a conservation corridor under the Umbrella of the Clean Development Mechanism (CDM) in the Tauramena Municipality. December 2004 – February 2005.

Technical Director. PROCUENCA - ACEE – C&B.
Pre-feasibility study for the implementation of a carbon sequestration project under the Clean Development Mechanism (CDM) in the watershed of the Chinchina River. September 2003 – February 2004.

Consultant. Government of the Department of Cundinamarca - ACEE - C&B. Pre-feasibility study for the implementation of a carbon sequestration project under the Clean Development Mechanism (CDM) in public lands of the government of the Department of Cundinamarca. April – August 2003.

Academic advisor and Scientific Editor. National University of Colombia. Department of Forest Science. Alternative financial model for the sustainable management of the forests of the San Nicolas Valley. Medellin-Colombia. June-December 2002.

Project manager. National University of Colombia. Forest management plan for current and projected tree plantations of the public utility company of Medellín-Colombia. April – September 2003.

Consultant. National University of Colombia - Public Utility Company of Medellín. Characterization and quantification of potentialities of water conservations forests October 2001 – February 2002.

Consultant. National University of Colombia - Public Utility Company of Medellín. Forest inventory. Alternative financial model for the sustainable management of the forest of the San Nicolas Valley. February 2002.

TEACHING AND RESEARCH ASSISTANTSHIPS

2009-2013 **Graduate Research Assistant.** NSF, Coupled Natural-Human Systems. Columbia University: Fires in Western Amazonia: Understanding and Modeling the Roles of Climatic, Social, Demographic, and Land-Use Change. New York, NY.

Spring 2012 **Teaching Assistant.** Columbia University. E3B Department. Undergraduate course on Environmental Biology. New York, NY.

Spring 2010 **Teaching Assistant.** Columbia University. E3B Department. Graduate seminar: Topics on Conservation Biology. New York, NY.

Spring 2009 **Teaching Assistant.** Columbia University. E3B Department. Undergraduate course: Science for Sustainable Development. New York, NY.

2007-2008 **Graduate Research Assistant.** University of Maryland. Department of Geography. College Park, MD.

PUBLICATIONS

ARTICLES IN PEER-REVIEWED JOURNALS PUBLISHED OR ACCEPTED:

Gutierrez-Velez VH, Rodriguez J, Lara W, Sarmiento V. (*in press*). Probabilistic approximation to change and no change in multispectral remote sensing. *International Journal of Remote Sensing*.

Estupinan-Suarez, L.M., Gans, F., Brenning, A., **Gutierrez-Velez, V.H.**, Londono, M.C., Pabon-Moreno, D.E., Poveda, G., Reichstein, M., Reu, B., Sierra, C.A., 2021. A regional Earth system data lab for understanding ecosystem dynamics: An example from northern South America. *Frontiers in Earth Science* 9, 574.

- Pearsall, H., **Gutierrez-Velez, V.H.**, Gilbert, M.R., Hoque, S., Eakin, H., Brondizio, E.S., Solecki, W., Toran, L., Baka, J.E., Behm, J.E., 2021. Advancing equitable health and well-being across urban–rural sustainable infrastructure systems. *npj Urban Sustainability* 1, 1–6.
- Wiese D[†], Stroup AM, Maiti A, Harris G, Lynch S, Vucetic S, **Gutierrez-Velez VH**, Henry KA. 2021. Measuring Neighborhood Landscapes: Associations between neighborhood’s landscape characteristics and colon cancer survival. *International Journal of Environmental Research and Public Health*. 18. 4728.
[†] *Advisee*
- Gutierrez-Velez, VH** & Wiese, D. 2020. Sampling bias mitigation for species occurrence modeling using Machine Learning Methods. *Ecological informatics*. 58. 101091.
- Anaya, JA, **Gutiérrez-Vélez VH**, Pacheco-Pascagaza AM, Palomino-Ángel S, Han N, Balzter H. 2020. Drivers of forest loss in a megadiverse hotspot on the Pacific Coast of Colombia. *Remote Sensing*. 12(1235).
- Miguel D. Mahecha, Fabian Gans, Gunnar Brandt, Rune Christiansen, Sarah Cornell, Norman Fomferra, Guido Kraemer, Jonas Peters, Paul Bodesheim, Gustau Camps-Valls, Jonathan Donges, Wouter Dorigo, Lina Estupinan-Suarez, **Victor H. Gutierrez-Velez**, Martin Gutwin, Martin Jung, Maria Londono, Diego Miralles, Phillip Papastefanou, and Markus Reichstein. 2020. Earth system data cubes unravel global multivariate dynamics. *Earth System Dynamics*. 11: 201-234
- Wiese D[†], Escalante A, Murphy H, Henry K, **Gutierrez-Velez, VH*****. 2019. Integrating environmental and neighborhood factors in MaxEnt modeling to predict species distributions: A case study of *Aedes albopictus* in southeastern Pennsylvania. *PLOS ONE*. 14(10): e0223821.
 ****Senior Author (FLAE norm)* [†] *advisee*
- Glinskis E[†], **Gutierrez-Velez VH**. 2019 Quantifying and understanding carbon emissions from land cover changes between large and small oil palm expansion regimes in the Peruvian Amazon. *Land Use Policy*. **80**: 95-106
[†] *advisee*
- Croog R, Hayes-Conroy A, **Gutierrez-Velez VH**, Saenz-Montoya A. 2018. Real world food justice and the enigma of the scholar-activist label: A reflection on research values. *ACME*. **17**(4): 1024:1044.
- Bolivar JM., **Gutierrez-Velez VH**, ,and Sierra CA. 2018. Carbon stocks in aboveground biomass for Colombian mangroves with associated uncertainties. *Regional Studies in Marine Science* **18**:145-155.
- Schwartz NB, Uriarte M, DeFries R, Bedka K., Fernandes K., **Gutierrez-Velez V.**, Pinedo-Vásquez M. 2017. Fragmentation increases wind disturbance impacts on forest structure and carbon stocks in a western Amazonian landscape". *Ecological applications*. 27: 1901–1915.
- Schwartz, NB, Uriarte, M, DeFries., **Gutierrez-Velez, V.**, Pinedo-Vásquez, M. 2017. Land-use dynamics influence estimates of carbon sequestration potential in tropical second-growth forest. *Environmental Research Letters* **12**(7).

- Sierra CA, Mahecha M, Poveda G, Álvarez-Dávila E, **Gutierrez-Velez VH**, Reu B, Feilhauer H, Anaya J, Armenteras D, Benavides AM, Buendia C, Duque Á, Estupiñan-Suarez LM, González C, Gonzalez-Caro S, Jimenez R, Kraemer G, Londoño MC, Orrego S.A, Posada JM, Ruiz-Carrascal D, Skowronek S. 2017. Monitoring ecological change during rapid socio-economic and political transitions: Colombian ecosystems in the post-conflict era. *Environmental Science & Policy* **76**:40-49.
- Fernandes, K, Verchot, L., Baethgen, W, **Gutierrez-Velez, V**, Pinedo-Vasquez, M. Martius, C. 2017. Heightened fire probability in Indonesia in non-drought conditions: the effect of increasing temperatures. *Environmental research letters*. 12(5): 054002
- Hergoualc'h K, **Gutierrez-Velez VH**, Menton M, Verchot LV. 2017. Characterizing peat palm forest degradation in the Peruvian Amazon from space and on the ground: An exploratory study in the Peruvian Amazon. *Forest Ecology and Management*. **393**: 63-73
- Baptiste B, Pinedo-Vasquez M, **Gutierrez-Velez V**, Andrade GI, Vieira P, Ming Lee T, Estupiñán L. 2017. Greening Peace in Colombia. *Nature Ecology and Evolution*. **2**: 0102.
- Schwartz NB, Uriarte M, **Gutierrez-Velez VH**, Baethgen W, DeFries R, Fernandes K, Pinedo-Vasquez M. 2015. Climate, landowner residency, and land cover predict local scale fire activity in the Western Amazon. *Global Environmental Change*. **31**: 144-153.
- Gutierrez-Velez VH**, Uriarte M, DeFries RS, Pinedo-Vasquez M, Fernandes K, Ceccato P, K, Baethgen WE, & Padoch C. 2014. Land cover change interacts with drought severity to change fire regimes in Western Amazonia. *Ecological Applications*. **24**: 1323-1340.
- Meyfroidt P, Carlson KM, Fagan ME, **Gutiérrez-Vélez VH**, Macedo MN, Curran LM, DeFries RS, Dyer GA, Gibbs HK, Lambin EF, Morton DC, Robiglio V. 2014. Multiple pathways of commodity crop expansion in tropical forest landscapes. *Environmental Research Letters*. **9**: 13.
- Gutiérrez-Velez VH**, DeFries R. 2013. Annual multi-resolution detection of land cover conversion to oil palm in the Peruvian Amazon. *Remote Sensing of Environment*. 129: 154-167.
- Uriarte M, Pinedo-Vasquez M, DeFries RS, Fernandes K, **Gutierrez-Velez V**, Baethgen WE, & Padoch C. 2012. Depopulation of rural landscapes exacerbates fire activity in the Western Amazon. *Proceedings of the National Academy of Science (PNAS)*. **109**: 21546-21550.
- Gutiérrez-Velez VH** & Pontius Jr. RG. 2012. Influence of carbon mapping and land change modelling on the prediction of carbon emissions from deforestation. *Environmental Conservation*. **39**: 325-336.
- Gutiérrez-Velez VH**, DeFries R, Pinedo-Vasquez M, Uriarte, M, Padoch C, Baethgen W, Fernandes K & Lim Y. 2011. High-yield oil palm expansion spares land at the expense of forests in the Peruvian Amazon. *Environmental Research Letters*. **6**. 5pp
- Gutiérrez-Velez VH** & MacDicken K. 2008. Quantifying the Direct Social and Governmental Costs of Illegal logging in the Bolivian, Brazilian and Peruvian Amazon. *Forest Policy and Economics*. **10**: 248-256.

Gutiérrez V, Zapata M, Usma C, Laguado W & Santacruz A. 2006. Maximizing the profitability of forestry projects under the Clean Development Mechanism using a forest management optimization model. *Forest Ecology and Management*. **226**: 341-350.

Gutiérrez V & Lopera G. 2003. El árbol de área basal promedia como predictor del volumen por usos del rodal. *Revista de la Facultad Nacional de Agronomía*. **55**: 1683-1693.

BOOK CHAPTERS

Lopera G & **Gutiérrez V**. 2003. Fijación de carbono en plantaciones tropicales de *Pinus patula*. In: Orrego, S, del Valle, J & Moreno, F. (eds.). *Medición de la captura de carbono en ecosistemas forestales tropicales de Colombia*. Universidad Nacional de Colombia, Centro Andino para la Economía del Medio Ambiente.

CONFERENCE PROCEEDINGS

Gutiérrez V & Lopera G. 2003. El árbol de área basal promedia como predicción del volumen por usos del rodal. *Proceedings: primer simposio forestal DCF. Medellín*. Pg. 110-116.

Gutiérrez V & Lopera G. 2002. Metodología para la cuantificación de existencias y flujo de carbono en plantaciones forestales. In Gayoso, J & Jandl, R (eds.). *IUFRO World Series*. 13: 75-86. International Union of Forest Research Organization (IUFRO). Vienna.

Lopera G & **Gutiérrez V**. 2002. Flujo de carbono y respuesta a diferentes estrategias de manejo en plantaciones tropicales de *Pinus patula*. In Gayoso, J & Jandl, R (eds.). *IUFRO World Series* 13: 127-138. International Union of Forest Research Organization. IUFRO. Vienna.

Gutiérrez V & Lopera G. 2002. Valoración económica de la fijación de carbono en plantaciones tropicales de *Pinus patula*. In Gayoso, J & Jandl, R (eds.). *IUFRO World Series*. 13: 63-74. International Union of Forest Research Organization IUFRO. Vienna.

Lopera G & **Gutiérrez V**. 2000. Viabilidad técnica y económica de la utilización de plantaciones de *Pinus patula* como sumideros de CO₂. *Proceedings: V congreso nacional de ciencia y tecnología del carbón*. Universidad Popular del Cesar. Valledupar. Pg. 61-64.

SOFTWARE DEVELOPMENT

Lara, W & **Gutierrez-Velez, VH**. 2019. forestChange: Computing Essential Biodiversity Variables from Global Forest Change Data. Version 0.6. <https://cran.r-project.org/web/packages/forestChange/index.html>

OTHER WORKS PUBLISHED OR IN PRESS

Marcus M, **Gutierrez-Velez VH** and Cronkleton P. 2020. Land use change in four landscapes in the Peruvian Amazon. Working Paper 260. Bogor, Indonesia: CIFOR.

Hergoualc'h, Kristell, **V. H. Gutierrez-Velez**, M. Menton, and Louis V. Verchot. 2017. Caracterización de la degradación de los pantanos de palmeras turbosas desde el espacio y sobre el terreno: Un estudio exploratorio en la Amazonia peruana. CIFOR. Bogor. Documentos ocasionales. Vol. 179.

Lara W, **Gutiérrez V**, Zapata-Arbeláez B, Santacruz AM, Laguado WG, Sierra A. Bustamante

CM, Yepes A, Black T, Arjona, F. 2011. Priority areas for implementing the CDM to forest restoration projects in conservation corridors of the Andes. In Newton, AC, & Tejedor, N. (eds). *Principles and Practice of Forest Landscape Restoration: Case studies from the drylands of Latin America*. IUCN. Gland, Switzerland. P 292-293.

Gutierrez-Velez VH, Harris NL, Pearson TRH, Petrova S, Grimland S & Brown S. 2009. USAID Forest Carbon Calculator: Data and Equations for the Agroforestry Tool. Submitted by Winrock International under USAID Cooperative Agreement No. EEM-A-00-06-00024-00.

Laguado W, **Gutiérrez V** & Santacruz A. 2005. Estado del arte en la formulación y aprobación de proyectos forestales bajo el MDL. *Cambium*. 3(5): 1-6.

Gutiérrez V. 2004. Las actividades forestales y la mitigación del cambio climático en el contexto político y ambiental internacional: Entrevista de Víctor Gutiérrez, director de Carbono & Bosques a la Dra. Sandra Brown: Mexico Noviembre 2004. *Cambium*. 3(1): 1-5.

Gutiérrez V. 2004. Implicaciones de las decisiones adoptadas en COP9 en el diseño y manejo de proyectos MDL forestales. *Cambium*. 2(2): 3-4.

Santacruz A, **Gutiérrez V** & Laguado W. 2004. Controversia internacional sobre los proyectos forestales en el MDL luego de COP9. *Cambium*. 2(4): 3-4.

Gutiérrez V. 2003. Permanencia del carbono en actividades de aforestación y reforestación dentro del marco del mecanismo de desarrollo limpio. *Cambium*. 1(6): 3.

Gutiérrez V. 2003. Alteraciones del ciclo del nitrógeno y cambio global. *Cambium*. 1(7): 3-4.

WORKS SUBMITTED OR UNDER REVIEW

Gutierrez-Velez VH, Gilbert MR, Kinsey D, Behm JE. Sustainability in an also ruralizing planet. *Current Opinion in Environmental Sustainability*.

Karkun SS, Pearsall H, **Gutierrez-Velez VH**, Gilbert MR. How do roads and parks matter? Applying an equity lens to understand spatial variability in infrastructure across the urban-rural gradient. *Land*

David M. Lapola, Patricia Pinho, Hannah Liddy, Luiz. E. O. C. Aragão, Ane A. C. Alencar, Liana O. Anderson, Dolores Armenteras P., Jos Barlow, Erika Berenguer, Victor Brovkin, Kim Calders, Rachel Carmenta Jeffrey Chambers, Louise Chini, Marcos H. Costa, Philip M. Fearnside, Joice Ferreira, Luciana Gatti, **Victor H. Gutierrez-Velez**, Zhangang Han, Kathy Hibbard, Charles Koven, Peter Lawrence, Bruno T. T. Portela, Carlos A. N. Quesada, Mark Rounsevell, Alex Ruane, R. Schaldach, Sonaira S. da Silva, Celso von Randow, Wayne Walker. Amazon forest degradation. *Science*.

Topete-Pozas C, Gutierrez-Velez VH, Lara Henao W, Rosan C. Fragmented urban and forest expansion: A challenge for urban sustainability in Mexico City metropolitan area. *Sustainable Cities and Society*.

Wiese D, Borchardt P, **Gutierrez-Velez VH**, Schickhof U. Human and environmental drivers for the distribution of plant communities on summer pastures in SW Kyrgyzstan. *Remote Sensing*.

PAPERS PRESENTED AT PROFESSIONAL MEETINGS (AS FIRST AUTHOR)

Oral presentation. Annual meeting of the American Geophysical Union. *Integrated cloud infrastructure for characterizing and reporting biodiversity change at the national and regional levels.* San Francisco, CA. December 2020.

Oral presentation. GEOBON Open Science Conference & All Hands Meeting. *Integrated cloud infrastructure for characterizing and reporting biodiversity change at the national and regional levels.*, Leipzig, Germany (virtual). July 2020

Poster presentation. Annual meeting of the American Geophysical Union. *Automated time-series mapping of ecosystem extent via optimized relative radiometric normalization.* San Francisco, CA. December 2019.

Oral presentation. NASA Biodiversity and Ecological Forecasting Meeting. *Integrating Earth observations with user needs for biodiversity decision-making in Colombia.* Washington DC. May 2019.

Oral presentation. Centennial meeting of the American Geophysical Union. *Integrating Earth observations with user needs for biodiversity decision-making in Colombia.* AGU. Washington DC. December 2018.

Oral presentation. Annual meeting of the Association of American Geographers. *Suitable bias and accuracy assessments for spatial predictive forecast models.* AAG. New Orleans. LA. April 2018.

Oral presentation. Annual meeting of the Association of American Geographers. *Understanding and anticipating risk for mosquito borne diseases in Eastern US.* AAG. Boston. MA. April 2017.

Oral presentation. Symposium: Conceptual Design of an Ecological Observatory System for Colombia. Universidad Nacional de Colombia. *Bases for social-ecological monitoring in Colombia.* Medellín. November 2016.

Oral presentation. Annual meeting of the Association of American Geographers. *Understanding climatic, socio-demographic, and land-use drivers of fires in Western Amazonia* AAG. Chicago. IL. April 2015.

Oral presentation. 51th annual meeting of the Association for Tropical Biology and Conservation. *Land cover change interacts with drought severity to change fire regimes in Western Amazonia.* ATBC. Cairns. Australia. July 2014.

Oral presentation. ForestSat Conference. *Annual multi-resolution detection of forest conversion to oil palm in the Peruvian Amazon.* Oregon State University. Corvallis, OR. September 2012.

Oral presentation. 49th annual meeting of the Association for Tropical Biology and Conservation. *High-yield oil palm expansion spares land at the expense of forests.* ATBC. Bonito. Brazil. June 2012.

Oral presentation. Annual meeting of the Association of American Geographers. *Influence of carbon mapping and land change modeling on the prediction of carbon emissions from deforestation.* AAG. New York. US. February 2012.

Poster presentation. Fall meeting of the American Geophysical Union. *Improving oil palm classification in the Peruvian Amazon by combining active and passive remote sensing data.* AGU. San Francisco. US. December 2011.

Poster presentation. NCAR ASP Colloquium 2007 – Regional Biogeochemistry: Needs and Methodologies. *Influence of land change prediction on the estimation of carbon disturbed by deforestation in the Brazilian Amazon.* NCAR. Boulder, CO. June 2007.

Oral presentation. Forest Symposium DCF. *Escenarios de mercado viables para la implementacion de proyectos forestales bajo el MDL en Colombia II.* National University of Colombia. Medellín. Colombia. September 2005.

Oral presentation. CASFOR II International Conference: Modeling Carbon Sequestration at the Landscape Level: Techniques, models and policy relevance. *Maximizing the profitability of forestry projects under the Clean Development Mechanism (CDM) using a forest management optimization model.* UNAM – ECOSUR - Wageningen University. Palenque. México. November 2004.

Oral presentation. Forest Symposium DCF. *El árbol de area basal promedio como predictor del volumen por usos del rodal.* Department of Forest Sciences. National University of Colombia. Medellín. Colombia. March 2003.

Oral presentation. National Congress of Science and Technology of Carbon. *Viabilidad Técnica y Económica de la Utilización de Plantaciones de Pinus patula como Sumideros de CO₂.* Valledupar. Colombia. November 29 – December 2 2000.

INVITED ADDRESSES

Panel participant. Symposium on transdisciplinary Sustainability Science. Temple University. Philadelphia. March 2018.

Panel discussant. Extreme weather or extreme politics? Climate change, urban planning and the 2017 hurricane season. College of Liberal Arts. Temple University. Philadelphia. September 2017.

Invited speaker. Forum on research and knowledge foundations for sustainable agricultural development in Orinoquia, Colombia. Department of Vichada, Colombia November 2015

Invited speaker. Forum on sustainable development: Foundations and goals for territorial competitiveness based on science, technology and innovation. *Development and socio-environmental integrity in Amazonia.* Department of Guaviare. San José del Guaviare, Colombia. August 2015.

Invited speaker. International Workshop on New Perspectives on the Land Sparing vs Land Sharing debate. *Broadening the dimensions of the land sparing/land sharing debate.* PAR-IKAP. Chiang Mai, Thailand. June 2013.

Invited seminar speaker. *Oil palm expansion and land cover changes in the Peruvian Amazon: implications for forest conservation and fire mitigation.* Max Planck Institute for Biogeochemistry. Jena, Germany. May 2013.

Invited Speaker. Seminário Clima, Dinâmica e Biodiversidade de Florestas Amazônicas. *Expansión de palma en países amazónicos y lecciones de la experiencia en el sudeste asiático.* Embrapa - INPE. Belem. Brazil. June 2012

Invited speaker. Conference: Fires in Western Amazonia: The Effects of Climatic, Social, Demographic, and Land Use Changes on Fire Incidence and Fire Hazard. *Land cover changes and fire transitions in the Peruvian Amazon.* Columbia University-CIFOR. Lima-Pucallpa. Peru. August 2011.

Invited opening address. International Symposium on Ecosystems and Global Change in the Neotropics. *Ecosistemas y cambios ambientales en el neotrópico.* Carbono & Bosques- National University of Colombia. Medellín. Colombia. May 2010.

GRANTS AND FELLOWSHIPS

EXTERNALLY FUNDED

Principal Investigator. National Aeronautics and Space Administration (NASA). Integration of Earth Observations for biodiversity decision-making in the Colombian BON. \$89,908. Expected start date: June 28, 2021.

Institutional Principal Investigator (NASA). Advancing tools to support and test an integrated biodiversity monitoring system for Colombia's Protected Areas. \$200,839 (Temple's budget). Proposed start date: Feb 2021

Principal Investigator. Center for International Forest Research (CIFOR). Characterization and mapping of degradation of palm swamp peatlands in the Peruvian Amazon. \$30,164. Start date: January 2021.
Percentage of effort: 5% academic year.

Principal Investigator. Center for International Forest Research (CIFOR). Characterizing and Assessing Palm Swamp Degradation in the Peruvian Amazon. \$75,075. Start date: May 2020.
Percentage of effort: 5.5% academic year + 0.5 mo summer.

Principal Investigator. National Aeronautics and Space Administration (NASA). Integration of Earth observations for decision making on biodiversity management and conservation in Colombia: Consolidation of the Colombian Biodiversity Observation Network. \$599,724. Start date: March 26, 2018.
Percentage of effort: 45% academic year, 50% summer for three years.

Senior Personnel. National Science Foundation (NSF). How Does Infrastructure Shape Equity and Well-being across the Urban-Rural Gradient?. \$50,000. Start date: June 01, 2020.

Principal Investigator. Center for International Forest Research (CIFOR). Characterization of multiannual land cover changes in the Peruvian Amazonia. \$33,000. Start date: December 2017.
Percentage of effort: 2.2% academic year.

Sponsor and co- Investigator. National Academies of Sciences - USAID. Implementation of Essential Biodiversity Variables for biodiversity assessment and monitoring at the subnational level in Colombia. \$154,000. Start date: December 2018
Percentage of effort: 2% academic year.

Co- Investigator. University of Medellin, Colombia. Spatial and temporal analysis of pressures on Colombian Ecosystems. Start date: January 2019.
Percentage of effort: 1% academic year.

Co- Investigator. German Ministry of Education and Research – Colombian Administrative Department of Science, Technology and Innovation. Assessing biodiversity change (ABC): Workshop on the integration of ground-based and satellite-derived information to detect changes in ecosystem functioning in Colombia. €33,355 (total). November 2016.
Percentage of effort: 1% academic year.

Research Advisor. Columbia University. LDEO summer intern program. Is Sustainable Agricultural Development Possible? Monitoring environmental changes from large-scale cropping in the Eastern Savannas of Colombia. \$10,000. Summer 2016.
Percentage of effort: 1% academic year.

Principal Investigator. Department of Vichada, Colombia. Research, training and outreach program for the characterization, monitoring and prediction of water quality and offer in the Department of Vichada, Colombia. \$2,000,000. (Withdrawn)

Principal Investigator. Columbia University. Institute for Latin American Studies. Annual faculty grant competition. Workshop on emerging social, ecological and climatic challenges for natural conservation and rural development in post-conflict landscapes in Colombia. \$2,000. May 2015.

Principal Investigator. Columbia University. Earth Institute. Cross Cutting Initiative. Laying the foundations for the implementation of a collaborative research/training program for monitoring agricultural expansion in the tropical Eastern savannas of Colombia. \$5,000. July 2014.

INTERNAL AWARDS

Co-principal Investigator. Temple University, Office of the Vice-president for Research, College of Liberal Arts (pending). Catalytic Collaborative Funding Initiative – The CAT Program. Catalyzing convergence research on health and well-being through a Bio3Science-Sustainability framework. U.S. \$339,361.97. Anticipated start date: July 1, 2021.

Co-principal Investigator. Temple University, Office of the Vice-president for Research, College of Liberal Arts (pending). Catalytic Collaborative Funding Initiative – The CAT Program. Resilience of Forest Ecosystem Services to Global Change: the IGER Initiative . U.S. \$653,027.86. Anticipated start date: July 1, 2021.

Principal Investigator. Temple University, Office of the Vice-president for Research, College of Liberal Arts. OVPR Bridge Research Program. U.S. \$70,002. Anticipated start date: July 1, 2021.

Mentor. Liberal Arts Undergraduate Research Award. College of Liberal Arts. Summer 2020.

Mentor. Liberal Arts Undergraduate Research Award. College of Liberal Arts. Fall 2020.

Principal Investigator. Temple University, Office of the Vice-president for Research, College of Liberal Arts, College of Public Health, College of Science and Technology. Big Data Science Applications for Understanding Social and Environmental Risks for the Transmission of Zika and Other Mosquito Borne Diseases in Eastern U.S. \$111,950.76. Start date: July 1, 2016. Percentage of effort: 38% academic year 1, 5% academic year 2

SCHOLARSHIPS AND FELLOWSHIPS

Postdoctoral fellow. Center for International Forest Research (CIFOR). Developing systems for reducing emissions from land use. Grantee \$243,251 (\$218,251 direct grant + \$25,000 additional research expenses). April 2013.

Faculty fellow. Columbia University. E3B department. Aug 2008-Dec 2013. Jan 2008.

Awardee. The National Center for Atmospheric Research-NCAR. Advanced Study Program. Summer Colloquium 2007: Regional Biogeochemistry: Needs and Methodologies. NCAR. June 2007.

Awardee. Clark University. GISDE Department. Scholarship in Geographic Information Sciences for Development and the Environment. \$47,658.5. Jan 2006.

TEACHING

COURSES TAUGHT IN THE LAST FIVE YEARS

- Remote Sensing/Environmental Remote Sensing
- Advanced Remote Sensing
- Sustainable Natural-Human Systems

INVITED LECTURES

Columbia University. Department of Ecology, Evolution and Environmental Biology. Ecological perspectives of food production. New York, NY. June 2014.

Temple University. Department of Geography and Urban Studies. Undergraduate course on Digital Mapping. Philadelphia, PA. April 2011.

PROFAFOR–CORDELIM. International course in the development of reforestation and bioenergy projects under the Clean Development Mechanism (CDM). Quito, Ecuador. March 2004.

National University of Colombia - ACEE. Seminar-workshop on the formulation of forestry based carbon mitigation projects under the Clean Development Mechanism (CDM). Medellín, Colombia. April 2002.

INDEPENDENT STUDY COURSES DIRECTED

- Land cover change and landscape ecology in the Montes de Maria region of Colombia. Victoria Sarmiento. Fall 2020
- Mapping forest loss due to agricultural expansion in a hotspot of ecosystem change in Colombia. Evelyn Gorey. Fall 2020
- Ecosystem changes in tropical dry forest ecosystems of Colombia. Victoria Sarmiento. Fall 2019.
- Land change characterization in tropical savannas. Jerónimo Rodriguez. Fall 2018. Graduate level
- Digital image processing in tropical savannas. Jerónimo Rodriguez. Fall 2017. Graduate level
- Land change characterization in tropical rain forests. Matthew Marcus. Fall 2018. Graduate level

ADVISING AND COMMITTEE SERVICES

Angela Mejia	PhD advisor	2020-Present
Victoria Sarmiento	PhD Advisor	2019-Present
Shrobona Krakun	PhD Committee Member	2018-Present
Matthew Marcus	PhD Advisor	2017-Present
Jerónimo Rodriguez	PhD Advisor	2016-Present
Evelyn Gorey	LAURA scholarship advisor	2020-Present
Wilson Lara Henao	Postdoctoral Advisor	2018-2021
Daniel Wiese	PhD Committee Member	2017-2021
Carlos Topete	Postdoctoral Visiting Scholar Advisor	2018-2020
Alexis Saenz	PhD Committee Member	2017-2020
Anthony Hughes	PSM Capstone Advisor	2018-2019
Claude Schrader	PSM Capstone Advisor	2018-2019
Emmalina Glinskis	Undergraduate Advisor	2015-2017
Kimberly Myers	Undergraduate Advisor	2015-2016

SERVICES

SERVICE TO THE PROFESSION

Reviewer of scholarly manuscripts for:

- Biotropica
- Carbon Management
- Climate and development
- Ecological Applications
- Environmental Research Letters
- Food Security
- International Journal of Remote Sensing
- JAMIA
- Journal of the American Medical Informatics Association
- Journal of Arid Environments
- Journal of Land Use Science
- Land Change Policy
- Landscape Ecology
- Plos One

- Remote Sensing
- Remote Sensing of Environment
- World development

Organization of academic events and sessions.

Co-organizer and moderator. Sustainable Urban Systems Workshop: How Does Infrastructure Shape Equity and Well-being across the Urban-Rural Gradient? National Science Foundation. Temple University. Philadelphia. September 11-13, 2019

Co-organizer. NASA-GEO Workshop. Temple University-von Humboldt Institute for Biological Resources. Bogotá. August 2019.

Organizer. Workshop on Integration of Earth Observations for biodiversity decision-making in Colombia. Integración de observaciones de la tierra para la toma de decisiones en biodiversidad en Colombia. Temple University-von Humboldt Institute for Biological Resources. Bogotá. July 2018.

Organizer and moderator. Annual meeting of the Association of American Geographers. *Panel on Conceptual, operational and practical challenges for transdisciplinary sustainability science research.* AAG. New Orleans. LA. April 2018.

Organizer and moderator. Workshop on the future agenda of sustainability research. Temple University. Philadelphia, PA, March 2018.

Co-organizer and participant. Symposium on Transdisciplinary Sustainability Science, Temple University. Philadelphia, PA, March 2018.

Co-organizer and moderator. Workshop on the social, environmental, cultural, and political dimensions of global sustainability. Center for Sustainable Communities, Temple University. Philadelphia, PA, October 2017.

Co-organizer and participant. International workshop and seminar on the design of an ecological observatory system for Colombia. Medellín, Colombia, November 2016.

Organizer and participant. Forum on research and knowledge foundations for sustainable agricultural development in the Department of Vichada, Colombia, November 2015

Organizer and moderator. Workshop on emerging social, ecological and climatic challenges for natural conservation and rural development in post-conflict landscapes in Colombia. Columbia University. New York, NY. May 2015

Co-organizer and chair: Annual meeting of the Association of American Geographers. Changing landscapes and livelihoods general session 2: Bridging top-down approaches of environmental change with bottom-up socio-ecological adaptation approaches. AAG. Chicago, IL. April 2015

Organizer and instructor. Center for International Forestry Research (CIFOR) - Comisión Inter-regional de la Amazonia (CIAM). Training workshop on fire management and prevention systems in the Peruvian Amazon. Pucallpa, Peru. July 2013.

Convener and chairperson. Fall meeting of the American Geophysical Union. Special session: *Drivers of Land Change in Mountain and Tropical Ecosystems and Impacts on Climate and Other Environmental Changes*. AGU. San Francisco, CA. December 2011.

Chairperson. Fall meeting of the American Geophysical Union. Poster session: *Land use change III*. AGU. San Francisco, CA. December 2011.

Organizer. International Symposium on Ecosystems and Global Change in the Neotropics. Carbono & Bosques- National University of Colombia. Medellín - Colombia. May 2010.

Coordinator. XVII National Congress of the National Association of Students of Biological Sciences. Working board on forest and climate change. ANECB. Medellín - Colombia. October 2003.

Organizer and coordinator. Seminar on Ecosystems and Global Change: Cycle II. Graduate Program on Forests and Environmental Conservation. National University of Colombia. Research Center on Ecosystems and Global Change (C&B). Medellín. Colombia. February – June 2003.

Organizer and coordinator. Seminar on Ecosystems and Global Change: Cycle I. Graduate Program on Forests and Environmental Conservation. National University of Colombia. Research Center on Ecosystems and Global Change (C&B). Medellín - Colombia. September – December 2002.

SERVICE TO THE UNIVERSITY

Co-organizer of the Symposium on Transdisciplinary Sustainability Science at Temple University. March 22-23, 2018

Organizer and moderator of the workshop on the future agenda of sustainability research. March 23, 2018

Participation on the panel: Sustainability research at Temple University as part of the Symposium on Transdisciplinary Sustainability Science. March 23, 2018.

Member of the cross-College IDEAS (**I**nfectious **D**isease **E**cology, **A**nalytics, and **S**urveillance in One Health initiative. 2016-Present)

SERVICE TO THE COLLEGE

Co-organizer of the National Science Foundation Workshop on Sustainable Urban Systems. September 2019

Co-organizer of Invited Colloquium Speaker. Karen Seto. Spring 2019.

Co-organizer of Invited Colloquium Speaker. Eduardo Brondizio. Spring 2019

Co-organizer and moderator of the Sustainable Urban Systems Workshop: How Does Infrastructure Shape Equity and Well-being across the Urban-Rural Gradient? National Science Foundation. September 11-13, 2019

Strategic Planning for the Center for Sustainable Communities. 2017-Present.

Co-organizer and moderator of the CLA Workshop on the social, environmental, cultural, and political dimensions of global sustainability. October 25th, 2017

SERVICE TO THE DEPARTMENT

Organization of Invited Colloquium Speaker. Jesus Anaya. Fall 2018.

Committee for the creation of a Professional Science Master's program on Geospatial Data Science. Department of Geography and Urban Studies. Fall 2019-Present.

Faculty Search Committee for Tenure Track Position. Fall 2018.

Faculty Search Committee for Tenure Track Position. Fall 2017.

Faculty Search Committee for Tenure Track Position. Fall 2016.

Organization of Invited Speaker Presentation. Brigitte Baptiste. Institute von Humboldt, Colombia. Spring 2016.

Member of the Faculty Committee of the Professional Science Master's Program on GIS. Spring (2016).

Proposal Writing for the creation of a Center on Integrated Social and Environmental Research

SERVICE TO THE COMMUNITY

National Aeronautics and Space Administration NASA. Biological Diversity Program. Panel Reviewer. 2020.

Microsoft's AI for Earth - Group on Earth Observations-Biodiversity Observation Network (GEOBON). Reviewer of proposals submitted for the program "Essential Biodiversity Variables in the Cloud". June 2020.

National Science Foundation. SBE Directorate. Ad hoc reviewer. 2020.

National Science Foundation. SBE Directorate. Panel reviewer. 2019.

Member of the Platform for Ecological Analyses on Colombian Ecosystems. 2016 – 2019.

MEDIA COVERAGE

IDEA marketplace: Striking back at Zika. May 2019.

https://www.fox.temple.edu/posts/2019/05/striking-back-zika/?fbclid=IwAR3TXF5hxwm4zLpb9qIRMN4O3xEfPtv1Vk233ZVQBS4ps5O0oH_XkUhFTk

ALDIA news: Mapping the future of biodiversity in Colombia. March 2018.

<http://aldianews.com/articles/education/mapping-future-biodiversity-colombia/52169>

The Temple News: Professor connects science and ecological decision-making in Colombia. February 2018.

<https://temple-news.com/professor-connects-science-and-ecological-decision-making-in-colombia/>

Temple Now: Geographer to lead NASA-funded project in Colombia. January 2018.

<https://news.temple.edu/news/2018-01-23/nasa-grant-geography-urban-studies-research-colombia-biodiversity>

State of the planet: What Do Wildfires Have to Do With Climate Change?. October 2014

<http://blogs.ei.columbia.edu/2014/10/13/what-do-wildfires-have-to-do-with-climate-change/>

State of the planet: Making progress on deforestation. June 2014.

<http://blogs.ei.columbia.edu/2014/06/23/making-progress-on-deforestation/>

Forest news: Forging fire resilience on Amazon forest fringes in Peru. January 2014.

<http://blog.cifor.org/20925/forging-fire-resilience-on-amazon-forest-fringes-in-peru#.UtAPq431vxg>

Mongabay: Palm oil company destroys 7,000 ha of Amazon rainforest in Peru. March 2013.

<http://news.mongabay.com/2013/0304-palm-oil-peru.html>

BBC. Palma aceitera, "agente de deforestación en Perú". May 4 2012.

http://www.bbc.co.uk/mundo/noticias/2012/05/120503_peru_palma_aceitera_am.shtml

Forest news: Land sharing and land sparing? Reconciling agriculture and biodiversity conservation. March 2012.

<http://blog.cifor.org/8110/land-sharing-or-land-sparing-reconciling-agriculture-and-biodiversity-conservation>

Mongabay. La producción industrial de aceite de palma en el Perú se expande a costa de los bosque tropicales. January 19 2012.

http://es.mongabay.com/news/2012/es0110-peru_palm_oil.html

Environmental Research Web. More intensive oil-palm farming may not spare rainforest. January 17 2012.

<http://environmentalresearchweb.org/cws/article/news/48305>

Mongabay. Industrial palm oil production expands at expense of rainforests in Peru. January 10 2012.

http://news.mongabay.com/2012/0110-peru_palm_oil.html

PROFESSIONAL MEMBERSHIPS

American Geophysical Union (AGU)

LANGUAGES

Native fluency in Spanish and basic knowledge of Portuguese.