Juan Carlos Fernandez-Diaz, Ph.D.
Research Assistant Professor - Department of Civil & Environmental Engineering, University of Houston
Co-principal Investigator NSF supported National Center for Airborne Laser Mapping (NCALM)

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SYNOPSIS

Degrees: Ph.D. Civil Engineering, minor Electrical Engineering; M.Sc. Civil Engineering; Master of Business Administration, Finance; BS Electrical Engineering, Telecom

Focus Areas: Active remote sensing, advanced lidar technologies and techniques, survey, and mapping Other interests include ethics of technology and engineering and technology deployment for societal development

Publications/ Presentations: H-Index - 18 (Google Scholar), Peer-reviewed - 28, Refereed conference proceedings – 12, Book chapters - 2 (1 w/ 3 editions), Conference papers - ~40, Other relevant – 13, Invited presentations - 22

Grants: Current - Co-I NSF Award 1830734 ($3.26M, 5 years), collaborator NGS ($30k, 2 years) Past (unfunded proposals) - 2019 NASA ($111.5k), 2018 NGS ($30k), 2014 AFRL

Contracts: Executed - 24, $2.08M (credit $890k), Pending - 14, $1.05M (credit $800k)

Management: Led, coordinated, and managed large-scale projects for the National Center for Airborne Laser Mapping (NCALM) in the US, New Zealand, Antarctica, and Mesoamerica

Academic Profiles: https://scholar.google.com/citations?user=tj_WRj8AAAAJ&hl=en&oi=ao
https://www.researchgate.net/profile/Juan_Fernandez-Diaz
https://publons.com/a/1467229/

Languages: English - Full fluency; Spanish - Native

A. PROFESSIONAL PREPARATION

A1. Undergraduate Institution

Universidad Nacional Autonoma de Honduras, Honduras, BS Electrical Engineering	2001

A2. Graduate Institutions

Universidad Católica de Honduras, Tegucigalpa, Honduras, MBA	2005
University of Florida, Gainesville, FL, USA, M.Sc. Geosensing Systems Engineering	2007
University of Florida, Gainesville, FL, USA, Ph.D. Geosensing Systems Engineering	2010

B. APPOINTMENTS

2019/03 – present	Research Assistant Professor, University of Houston (UH/CEE)
2010/01 – 2019/02	Senior Research Engineer, University of Houston (UH)
2005/08 – 2010/01	Graduate Student/Research Assistant, University of Florida (UF)
2009/06 – 2009/07	Intern, NASA Goddard Space Flight Center, Microwave Instruments & Technology Branch, University of Maryland, Baltimore County
2008/2007 06 – 08	Teaching Associate, International Space University, Spain & China
2003/08 – 2005/07	Wireless Mobile Telephone Network Quality Assurance Chief for the America Movil (NYSE: AMX) operation in Honduras
1997/10 – 2003/08	Radioelectric Spectrum Planning & Engineering Advisor to the National Telecommunication Commission, Honduras
1997/07 – 1997/09	Intern, NASA Jet Propulsion Laboratory & CALTECH, Galileo's Near Infrared Mapping Spectrometer Team

1996/04	Trainee at the European Space Agency (ESA) satellite tracking station in Villa Franca del Castillo, Spain
1994/07 – 1997/02	Instrumentation Teaching Associate, Astronomical Observatory, Universidad Nacional Autonoma de Honduras

C. PUBLICATIONS

C1. Peer-reviewed Publications:

1. T. Inomata, D. Triadan, V. A. Vázquez López, J. C. Fernandez-Diaz, T. Omori, M. B. Méndez Bauer*, et al.*, "Monumental architecture at Aguada Fénix and the rise of Maya civilization," *Nature,* vol. 582, 6/3/2020 2020.
2. K. W. Hudnut, B. A. Brooks, K. Scharer, J. L. Hernandez, T. E. Dawson, M. E. Oskin*, et al.*, "Airborne Lidar and Electro-Optical Imagery along Surface Ruptures of the 2019 Ridgecrest Earthquake Sequence, Southern California," *Seismological Research Letters,* 2020.
3. J. C. Fernandez-Diaz, "Whose Data Is It Anyway? Lessons in Data Management and Sharing from Resurrecting and Repurposing Lidar Data for Archaeology Research in Honduras.," *Journal of Computer Applications in Archaeology,* vol. 3, pp. 122–134, 2020.
4. T. W. Stanton, T. Ardren, N. C. Barth, J. C. Fernandez-Diaz, P. Rohrer, D. Meyer*, et al.*, "'Structure' density, area, and volume as complementary tools to understand Maya Settlement: An analysis of lidar data along the great road between Coba and Yaxuna," *Journal of Archaeological Science: Reports,* vol. 29, p. 102178, 2020/02/01/ 2020.
5. T. Beach, S. Luzzadder-Beach, S. Krause, T. Guderjan, F. Valdez Jr., J. C. Fernandez-Diaz*, et al.*, "The Early Anthropocene in tropical forests. Ancient Maya wetland fields revealed from laser scanning and multiproxy evidence.," *Proceedings of the National Academy of Sciences,* 2019.
6. M. A. Canuto, F. Estrada-Belli, T. G. Garrison, S. D. Houston, M. J. Acuña, M. Kováč*, et al.*, "Ancient lowland Maya complexity as revealed by airborne laser scanning of northern Guatemala," *Science,* vol. 361, 2018.
7. N. Ekhtari, C. Glennie, and J. C. Fernandez-Diaz, "Classification of Airborne Multispectral Lidar Point Clouds for Land Cover Mapping," *IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing,* vol. 11, pp. 2068-2078, 2018.
8. N. Cao, H. Lee, E. Zaugg, R. Shrestha, W. Carter, C. Glennie*, et al.*, "Airborne DInSAR Results Using Time-Domain Backprojection Algorithm: A Case Study Over the Slumgullion Landslide in Colorado With Validation Using Spaceborne SAR, Airborne LiDAR, and Ground-Based Observations," *IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing,* vol. 10, pp. 4987-5000, 2017.
9. C. T. Fisher, A. S. Cohen, J. C. Fernández-Diaz, and S. J. Leisz, "The application of airborne mapping LiDAR for the documentation of ancient cities and regions in tropical regions," *Quaternary International,* vol. 448, pp. 129-138, 2017/08/20/ 2017.
10. A. G. Fountain, J. C. Fernandez-Diaz, M. Obryk, J. Levy, M. Gooseff, D. J. Van Horn*, et al.*, "High-resolution elevation mapping of the McMurdo Dry Valleys, Antarctica, and surrounding regions," *Earth Syst. Sci. Data,* vol. 9, pp. 435-443, 6-12-2017 2017.
11. T. Inomata, F. Pinzón, J. L. Ranchos, T. Haraguchi, H. Nasu, J. C. Fernandez-Diaz*, et al.*, "Archaeological Application of Airborne LiDAR with Object-Based Vegetation Classification and Visualization Techniques at the Lowland Maya Site of Ceibal, Guatemala," *Remote Sensing,* vol. 9, p. 563, 6-5-17 2017.
12. J. Fernandez-Diaz, W. Carter, C. Glennie, R. Shrestha, Z. Pan, N. Ekhtari*, et al.*, "Capability Assessment and Performance Metrics for the Titan Multispectral Mapping Lidar," *Remote Sensing,* vol. 8, p. 936, 2016.
13. C. T. Fisher, J. C. Fernández-Diaz, A. S. Cohen, O. Neil Cruz, A. M. Gonzáles, S. J. Leisz*, et al.*, "Identifying Ancient Settlement Patterns through LiDAR in the Mosquitia Region of Honduras," *PLOS ONE,* vol. 11, p. e0159890, 2016.

14. A. F. Chase, K. Reese-Taylor, J. C. Fernandez-Diaz, and D. Z. Chase, "Progression and Issues in the Mesoamerican Geospatial Revolution An Introduction," *Advances in Archaeological Practice,* vol. 4, pp. 219-231, 2016.
15. A. Magnoni, T. W. Stanton, N. Barth, J. C. Fernandez-Diaz, J. F. O. León, F. P. Ruíz*, et al.*, "Detection Thresholds of Archaeological Features in Airborne Lidar Data from Central Yucatán," *Advances in Archaeological Practice,* vol. 4, pp. 232-248, 2016.
16. K. Reese-Taylor, A. A. Hernández, A. F. F. Esquivel, K. Monteleone, A. Uriarte, C. Carr*, et al.*, "Boots on the Ground at Yaxnohcah Ground-Truthing Lidar in a Complex Tropical Landscape," *Advances in Archaeological Practice,* vol. 4, pp. 314-338, 2016.
17. M. L. Loughlin, C. A. Pool, J. C. Fernandez-Diaz, and R. L. Shrestha, "Mapping the Tres Zapotes Polity The Effectiveness of Lidar in Tropical Alluvial Settings," *Advances in Archaeological Practice,* vol. 4, pp. 301-313, 2016.
18. J. C. Fernandez Diaz, W. E. Carter, C. Glenie, and R. L. Shrestha, "Multicolor terrain mapping documents critical environments," *Eos, Transactions American Geophysical Union,* vol. 97, 20160614 2016.
19. Z. Pan, C. L. Glennie, J. C. Fernandez-Diaz, C. J. Legleiter, and B. Overstreet, "Fusion of LiDAR Orthowaveforms and Hyperspectral Imagery for Shallow River Bathymetry and Turbidity Estimation," *IEEE Transactions on Geoscience and Remote Sensing,* vol. 54, pp. 4165-4177, 2016.
20. Z. Pan, C. Glennie, J. C. Fernandez-Diaz, and M. Starek, "Comparison of bathymetry and seagrass mapping with hyperspectral imagery and airborne bathymetric lidar in a shallow estuarine environment," *International Journal of Remote Sensing,* vol. 37, pp. 516-536, 2016.
21. C. Legleiter, B. Overstreet, C. Glennie, Z. Pan, J. Fernandez-Diaz, and A. Singhania, "Evaluating the capabilities of the CASI hyperspectral imaging system and Aquarius bathymetric LiDAR for measuring channel morphology in two distinct river environments," *Earth Surface Processes and Landforms,* 2015.
22. Z. Pan, C. Glennie, P. Hartzell, J. Fernandez-Diaz, C. Legleiter, and B. Overstreet, "Performance Assessment of High Resolution Airborne Full Waveform LiDAR for Shallow River Bathymetry," *Remote Sensing,* vol. 7, pp. 5133-5159, 2015.
23. J. Fernandez-Diaz, W. Carter, R. Shrestha, and C. Glennie, "Now You See It… Now You Don't: Understanding Airborne Mapping LiDAR Collection and Data Product Generation for Archaeological Research in Mesoamerica," *Remote Sensing,* vol. 6, pp. 9951-10001, 2014.
24. A. Chase, D. Chase, J. Awe, J. Weishampel, G. Iannone, H. Moyes*, et al.*, "Ancient Maya Regional Settlement and Inter-Site Analysis: The 2013 West-Central Belize LiDAR Survey," *Remote Sensing,* vol. 6, pp. 8671-8695, 2014.
25. A. Harpold, Q. Guo, N. Molotch, P. Brooks, R. Bales, J. Fernandez-Diaz*, et al.*, "LiDAR-derived snowpack data sets from mixed conifer forests across the Western United States," *Water Resources Research,* vol. 50, pp. 2749-2755, 2014.
26. J. C. Fernandez-Diaz, C. L. Glennie, W. E. Carter, R. L. Shrestha, M. P. Sartori, A. Singhania*, et al.*, "Early Results of Simultaneous Terrain and Shallow Water Bathymetry Mapping Using a Single-Wavelength Airborne LiDAR Sensor," *Selected Topics in Applied Earth Observations and Remote Sensing, IEEE Journal of,* vol. 7, pp. 623 - 635, february 2014 2013.
27. E. L. Loudermilk, J. J. O'Brien, R. J. Mitchell, W. P. Cropper, J. K. Hiers, S. Grunwald*, et al.*, "Linking complex forest fuel structure and fire behaviour at fine scales," *International Journal of Wildland Fire,* vol. 21, pp. 882-893, 2012.
28. E. L. Loudermilk, J. K. Hiers, J. J. O'Brien, R. J. Mitchell, A. Singhania, J. C. Fernandez*, et al.*, "Ground-based LIDAR: a novel approach to quantify fine-scale fuelbed characteristics," *International Journal of Wildland Fire,* vol. 18, pp. 676-685, 2009.

C1a. Peer-reviewed Publications in Progress:

1. T. Inomata, J.C. Fernandez-Diaz, D. Triadan, M.G. Mollinedo, F. Pinzón, M. García Hernández, A. Flores, A. Sharpe, T. Beach, J.J. Durón Díaz, A. Guerra Luna, L. Guerrero Chávez, "Origins and spread of formal ceremonial complexes in the Olmec and Maya regions revealed by airborne lidar", recently rejected by Nature, working on submission to a different journal
2. W. M. Ringle, T. Gallareta Negrón, R. May Ciau, K.E. Seligson, J.C. Fernandez-Diaz, D Ortegon Zapata, "Lidar Survey of Ancient Maya Settlement in the Puuc Region of Yucatan, Mexico," submitted to PLOS ONE on November 20, 2020.
3. N. Sugiyama, S. Sugiyama, T. Catignani, A.S.Z. Chase, J.C. Fernandez-Diaz, "LiDAR detection of humans as geomorphic agents: The past, present and future of the Teotihuacan Valley," to be submitted to PNAS.
4. J.C. Fernandez-Diaz, M. Velikova, C. Glennie, "Validation of ICESat-2 ATL08 Terrain and Canopy Height Retrievals in Seven Tropical Mesoamerican Forests," to be submitted to IEEE Geoscience and Remote Sensing Letters.
5. L.A. Reeder-Myers, W. Goodwin, A. Figueroa, A. Domic, J.C. Fernandez- Diaz, "Cultural Landscapes at the Selin Farm Site, Northeastern Honduras," to be submitted to Latin American Antiquity.

C2. Book Chapters:

1. W. E. Carter and J. C. Fernandez-Diaz, "Geodetic Imaging: Technologies and Applications," in *Horizons in Earth Science Research*. vol. 20, B. Veres and J. Szigethy, Eds., ed New York: Nova Science Publishers, 2020.
2. J. C. Fernandez Diaz, W. E. Carter, R. L. Shrestha, and C. L. Glennie, "Lidar Remote Sensing," in *Handbook of Satellite Applications*, ed: Springer, 2013, pp. 757-808.

C2a. Book Chapters in Progress:

1. K. Tsukamoto, J. López Camacho, J. C. Fernandez-Diaz, R. L. Shrestha, Q. Hernández Gómez, and G. Jiménez Delgado, "Airborne Lider and Preliminary Results of Settlement Studies at the Archaeological Site of El Palmar, Mexico.," accepted for publication in *Lowland Maya Settlement Patterns in the Age of Lidar*, M. A. Canuto and F. Estrada-Belli, Eds., ed New Orleans: Middle America Research Institute, Tulana University.
2. T. W. Stanton, T. Ardren, N. C. Barth, J. C. Fernandez-Diaz, S. J. Miller, K. A. Taube, *et al.*, "Roads, Temples, and the Community Boundaries of Cobá, Quintana Roo" accepted for publication in *The Ties that Bind and the Walls that Divide: Prehistoric to Contemporary Maya Manipulation of Social Space*, T. Guderjan and J. Mathews, Eds., ed: University of Arizona Press.

C3.Refereed Papers in Conference Proceedings:

1. J. C. Fernandez-Diaz, H. Lee, and R. L. Shrestha, "Evaluating the effects of Vegetation Height and Slope on the Vertical Accuracy of the Tandem-X worlddem rapid city sample tile," in *IGARSS 2018 - 2018 IEEE International Geoscience and Remote Sensing Symposium*, 2018, pp. 224-227.
2. J. C. Fernandez-Diaz, J. Telling, C. Glennie, R. L. Shrestha, and W. E. Carter, "Rapid change detection in a single pass of a multichannel airborne lidar," in *2017 IEEE International Geoscience and Remote Sensing Symposium (IGARSS)*, 2017, pp. 1304-1307.

3. N. Ekhtari, C. Glennie, and J. C. Fernandez-Diaz, "Classification of multispectral lidar point clouds," in *2017 IEEE International Geoscience and Remote Sensing Symposium (IGARSS)*, 2017, pp. 2756-2759.
4. N. Cao, H. Lee, E. Zaugg, R. Shrestha, W. Carter, C. Glennie*, et al.*, "Evaluation of an airborne SAR system for deformation mapping: A case study over the slumgullion landslide," in *2017 IEEE International Geoscience and Remote Sensing Symposium (IGARSS)*, 2017, pp. 1684-1687.
5. Z. Pan, C. Glennie, J. C. Fernandez-Diaz, R. Shrestha, B. Carter, D. Hauser*, et al.*, "Fusion of bathymetric LiDAR and hyperspectral imagery for shallow water bathymetry," in *Geoscience and Remote Sensing Symposium (IGARSS), 2016 IEEE International*, 2016, pp. 3792-3795.
6. J. C. Fernandez-Diaz, H. Lee, C. L. Glennie, W. E. Carter, R. L. Shrestha, A. Singhania*, et al.*, "Optimizing ground return detection through forest canopies with small footprint airborne mapping LiDAR," in *Geoscience and Remote Sensing Symposium (IGARSS), 2014 IEEE International*, 2014, pp. 1963-1966.
7. J. C. Fernandez-Diaz, W. E. Carter, R. L. Shrestha, S. J. Leisz, C. T. Fisher, A. M. Gonzalez*, et al.*, "Archaeological prospection of north Eastern Honduras with airborne mapping LiDAR," in *Geoscience and Remote Sensing Symposium (IGARSS), 2014 IEEE International*, 2014, pp. 902-905.
8. P. J. Hartzell, J. C. Fernandez-Diaz, X. Wang, C. L. Glennie, W. E. Carter, R. L. Shrestha*, et al.*, "Comparison of synthetic images generated from LiDAR intensity and passive hyperspectral imagery," in *Geoscience and Remote Sensing Symposium (IGARSS), 2014 IEEE International*, 2014, pp. 1345-1348.
9. Z. Pan, J. C. Fernandez-Diaz, C. L. Glennie, and M. Starek, "Shallow water seagrass observed by high resolution full waveform bathymetric LiDAR," in *Geoscience and Remote Sensing Symposium (IGARSS), 2014 IEEE International*, 2014, pp. 1341-1344.
10. J. C. Fernandez-Diaz, W. E. Carter, R. L. Shrestha, C. L. Glennie, M. P. Sartori, and A. Singhania, "Early results from a high-resolution hybrid terrestrial and bathymetry mapping LiDAR," in *Geoscience and Remote Sensing Symposium (IGARSS), 2012 IEEE International*, 2012, pp. 4994-4997.
11. J. Fernandez Diaz, J. Judge, K. C. Slatton, R. Shrestha, W. E. Carter, and D. Bloomquist, "Characterization of full surface roughness in agricultural soils using groundbased LiDAR," in *Geoscience and Remote Sensing Symposium (IGARSS), 2010 IEEE International*, 2010, pp. 4442-4445.
12. E. L. Loudermilk, A. Singhania, J. C. Fernandez, J. K. Hiers, J. J. O'Brien, W. P. Cropper Jr*, et al.*, "Application of ground-based LIDAR for fine-scale forest fuel modeling," *USDA Forest Service Processing RMRS-P-46CD,* 2007.

C4. Other Publications:

1. T. W. Stanton, K. Tsukamoto, J. C. Fernandez-Diaz, and N. C. Barth. (2020, May 2020) El lidar en Mesoamérica. *Arqueología Mexicana*.
2. A. Moller and J. C. Fernandez Diaz. (2019) Airborne Lidar for Archaeology in Central and South America. *Lidar Magazine*.
3. W. E. Carter, R. L. Shrestha, and J. C. Fernandez Diaz. (2019) Estimating Ancient Populations by Aerial Survey. *American Scientist*. 9.
4. J. C. Fernandez-Diaz, A. S. Cohen, A. M. González, and C. T. Fisher, "Shifting Perspectives and Ethical Concerns in the Era of Remote Sensing Technologies," *SAA Archaeological record,* p. 8, 2018.
5. W. E. Carter, R. L. Shrestha, and J. C. Fernandez-Diaz, "Archaeology from the air," *Am. Sci,* vol. 104, pp. 28-35, 2016.
6. J. C. Fernandez-Diaz, "Understanding Waveform Digitizing and Waveform Data Processing," National Center for Airborne Laser Mapping (NCALM) 2013.

7. J. C. Fernandez-Diaz, "Lifting the canopy veil: airborne LiDAR for archeology of forested areas," *Imaging Notes Magazine,* vol. 26, pp. 31-34, 2011.
8. J. C. Fernandez-Diaz, "Characterization of surface roughness of bare agricultural soils using LiDAR," Unpublished PhD Disertation, Civil and Coastal Engineering, University of Florida, Gainesville, Florida, 2010.
9. P. W. Jewell, K. R. W. Skorko, and J. C. Fernandez. (2010, 3-1-2010) LiDAR Analysis of an Urban Alluvial System: Jordan River, Utah. *AEG News*. 20-22.
10. J. Fernandez, A. Singhania, J. Caceres, K. Slatton, M. Starek, and R. Kumar, "An overview of lidar point cloud processing software," 2007.
11. J. C. Fernandez Diaz, "Scientific Applications of the Mobile Terrestrial Laser Scanner (M-TLS) System," Unpublished Masters Thesis, Civil and Coastal Engineering, University of Florida, Gainesville, Florida, 2007.
12. J. C. Fernandez-Diaz and R. L. Shrestha. (2006) Mobile Terrestrial Laser Scanning (M-TLS) System. *University of Florida Civil and Coastal Engineering News*. 5.
13. Team Système d'Observation Locale, "Earth Observation Systems for Small Countries and Regions," Strasbourg, France, 2006.

D. CONFERENCE ORAL AND POSTER PRESENTATIONS

1. A. Hinojosa Corona and J. C. Fernandez-Diaz, "Procesos en Superficie a través de Topografía de Alta Resolución Espacial y Multitemporal: A 10 Años del Sismo El Mayor-Cucapá (Emc).," presented at the Reunión Anual Union Geofisica Mexicana (UGM) 2020, Guadalajara, Jalisco, México 2020.
2. C. Glenie and J. C. Fernandez-Diaz, "10+ Years and more than 10,000 Square Kilometers: Empowering the Archaeological Geospatial Revolution in Mesoamerica.," presented at the Photogrammetry, 3D Visualization, and Lidar Community of Practice Conference (P3DL) Virtual, 2020.
3. K. W. Hudnut, B. A. Brooks, K. M. Scharer, J. L. Hernandez, T. E. Dawson, M. E. Oskin*, et al.*, "Airborne Lidar and Electro-Optical Imagery Along Surface Ruptures of the 2019 Ridgecrest Earthquake Sequence, Southern California," presented at *AGU Fall Meeting*, San Francisco, CA, 2019, pp. S31F-0466.
4. K. Reese-Taylor and J. C. Fernandez-Diaz, "La Prospección con Lidar en el Biotopo Calakmul: Revelando una región conurbada," presented at the XI Congreso Internacional de Mayistas, Chetumal, Quintana Roo, Mexico, 2019.
5. J. C. Fernandez-Diaz, U. Okyay, and C. Glenie, "Surface deformation at Yellowstone Caldera: Observations from repeat ALS between 2008 and 2017," presented at the 2018 AGU Fall Meeting, Washington, DC, 2018.
6. J. C. Fernandez-Diaz, A. S. Cohen, C. T. Fisher, R. L. Shrestha, and A. M. Gonzáles, "New Insights into Honduran Archaeology from the Recovery and Reanalysis of an Antique Lidar Dataset," presented at the 83rd Annual Meeting of the Society of American Archaeology, Washington, DC, 2018.
7. R. Solinis-Casparius, C. T. Fisher, A. S. Cohen, J. C. Fernandez-Diaz, and J. Bush, "Excavations at the City of the Jaguar," presented at the 83rd Annual Meeting of the Society of American Archaeology, Washington, DC, 2018.
8. J. C. Fernandez-Diaz, "5,000 km² and Counting NCALM's Contribution to the Mapping of Mesoamerica," presented at the 2018 AAAS Annual Meeting, Austin, TX, 2018.
9. J. C. Fernandez-Diaz, A. S. Cohen, and C. T. Fisher, "Digging for Digital Artifacts: Old lidar data yields new insights into "NE Honduran" archaeology.," presented at the Chacmool at 50: The Past, Present, and Future of Archaeology, Calgary, Canada, 2017.

10. A. S. Cohen, J. C. Fernandez-Diaz, A. M. Gonzáles, and C. T. Fisher, "From the Air to the Unit: Mapping Technologies and Knowledge Production in the Honduran Mosquitia," presented at the 2017 AAA Annual Meeting, Washington, DC., 2017.
11. R. L. Shrestha and J. C. Fernandez Diaz, "Challenges and Opportunities to the Lidar Mapping of the Tres Zapotes Region," presented at the 82nd Annual Meeting of the Society for American Archaeology (SAA), Vancouver, Canada, 2017.
12. J. C. Fernandez Diaz and R. L. Shrestha, "Baseline Remote Sensing Survey of the Mayan Biosphere Reserve (MBR) in Petén Guatemala," presented at the 82nd Annual Meeting of the Society for American Archaeology (SAA), Vancouver, Canada, 2017.
13. N. Cao, H. Lee, E. Zaugg, R. L. Shrestha, W. E. Carter, C. Glenie*, et al.*, "Evaluation of the Potentials and Challenges of an Airborne InSAR System for Deformation Mapping: A Case Study over the Slumgullion Landslide," presented at the 2016 AGU Fall Meeting, San Francisco, CA, 2016.
14. A. G. Fountain, J. Levy, M. Obryk, M. Gooseff, D. Van Horn, C. Glennie*, et al.*, "Dramatic Topographic Changes in the McMurdo Dry Valleys, Antarctica.," presented at the 2016 The Geological Society of America Annual Meeting, Denver, Colorado, 2016.
15. P. Morin, A. G. Fountain, J. C. Fernandez-Diaz, and R. L. Shrestha, "The 2014-15 McMurdo dry valleys baseline; coordinated lidar, air photography and satellite based electro-optical imagery," presented at the 2016 Scientific Committee on Antarctic Research Conference, Kuala Lumpur, 2016.
16. C. A. Pool, M. L. Loughlin, M. Melgarejo Pérez, G. Montero Mejía, I. Martínez-Muñiz, G. García García*, et al.*, "El uso de teledetección contra el saqueo: observaciones de un proyecto en las tierras bajas del sur de Veracruz," presented at the Conferencia Intercontinental SAA 2016, Oxaca, Mexico, 2016.
17. Z. Pan, C. Glenie, and J. C. Fernandez-Diaz, "Shallow Water Bathymetry using Hyperspectral Imagery and Lidar," presented at the 17th Annual JALBTCX Airborne Coastal Mapping Charting Technical Workshop, Silver Spring, MD, 2016.
18. R. L. Shrestha, N. Ekhtari, A. Tayyebi, J. C. Fernandez-Diaz, W. E. Carter, E. Turner*, et al.*, "Baseline High-Resolution Multi-Sensor Remote Mapping of Wetlands in Barataria Bay Estuarine System," presented at the 2016 Gulf of Mexico Oil Spill and Ecosystem Science Conference, Tampa, FL, 2016.
19. J. C. Fernandez-Diaz, A. G. Fountain, P. Morin, A. Singhania, D. Hauser, M. Obryk*, et al.*, "Multispectral Airborne Mapping LiDAR Observations of the McMurdo Dry Valleys," presented at the 2015 AGU Fall Meeting, San Francisco, CA, 2015.
20. Z. Pan, C. Glenie, and J. C. Fernandez-Diaz, "Water Turbidity Estimation from Airborne Hyperspectral Imagery and Full Waveform Bathymetric LiDAR," presented at the 2015 AGU Fall Meeting, San Francisco, CA, 2015.
21. H. Lee, R. Shrestha, W. E. Carter, C. Glenie, G. Wang, Z. Lu*, et al.*, "Mapping Slumgullion Landslide in Colorado, USA Using Airborne Repeat-Pass InSAR," presented at the 2015 AGU Fall Meeting, 2015.
22. J. C. Fernandez-Diaz, R. Shrestha, W. E. Carter, C. Glennie, A. Singhania, M. Sartori*, et al.*, "From the Tropics to Antarctica: Performance Assessment from NCALM's first extended campaign of the Titan MW.," presented at the 2015 Imaging and Lidar Solutions Conference (ILSC), Toronto, Canada, 2015.
23. C. J. Legleiter, B. T. Overstreet, C. L. Glennie, Z. Pan, J. C. Fernandez-Diaz, and A. Singhania, "Comparative Evaluation of Hyperspectral Imaging and Bathymetric LiDAR for Measuring Channel Morphology Across a Range of River Environments," presented at the American Geophysical Union, Fall Meeting 2014, San Francisco, CA, 2014.
24. J. C. Fernandez-Diaz, W. Carter, and R. Shrestha, "HAVE WE HIT THE WALL? Adventures through the LiDAR Hinterland.," presented at the 2014 Chacmool Conference, Calgary Canada, 2014.

25. K. Reese-Taylor, M. Peuramaki-Brown, A. Anaya Hernández, R. L. Shrestha, and J. C. Fernández-Diaz, "Identifying dispersed urbanism in the Central Karstic Uplands using LiDAR," presented at the 2014 Chacmool Conference, Calgary Canada, 2014.
26. X. Zhou, Y. Zhang, H. L. Yang, S. Prasad, J. Jung, M. Crawford*, et al.*, "Seagrass Mapping via Active Learning using Airborne Hyperspectral and LiDAR Measurements," presented at the IEEE International Geoscience and Remote Sensing Symposium, Quebec City, 2014.
27. C. Fisher, S. Leisz, J. C. Fernández-Díaz, and W. Carter, "New perspectives on Mosquitia prehistory using Lidar," presented at the Society for American Archaeology 79th Annual Meeting, Austin, Texas, 2014.
28. J. C. Fernandez-Diaz, M. Sartori, A. Singhania, W. Carter, and R. Shrestha, "Airborne mapping LIDAR data collection and processing for archaeological research," presented at the Society for American Archaeology 79th Annual Meeting, Austin, TX, 2014.
29. S. Leisz, C. Fisher, F. Pezzutti, and J. C. Fernandez-Diaz, "Moving beyond traditional full coverage survey: LiDAR at Angamuco, Michoacán, Mexico," presented at the Society for American Archaeology 79th Annual Meeting, Austin, TX, 2014.
30. J. C. Fernandez Diaz, W. E. Carter, R. L. Shrestha, and C. L. Glennie, "Geodetic Imaging: Expanding the Boundaries of Geodesy in the 21st Century," presented at the AGU Fall Meeting Abstracts, 2013.
31. Z. Pan, S. Prasad, M. J. Starek, J. C. Fernandez Diaz, C. L. Glennie, W. E. Carter*, et al.*, "Seagrass Identification Using High-Resolution 532nm Bathymetric LiDAR and Hyperspectral Imagery," presented at the AGU Fall Meeting, San Francisco, CA, 2013.
32. J. C. Fernandez-Diaz, S. Elkins, A. M. González, W. Carter, R. Shrestha, M. Sartori*, et al.*, "Sistemas de Información Geográfico y la Preservación del Patrimonio Natural y Cultural: La exploración de la Mosquitia Hondureña," presented at the XIV Conferencia Iberoamericana de Sistemas de Información Geográfica, Tegucigalpa, Honduras, 2013.
33. M. J. Starek, J. C. Fernandez-Diaz, J. Gibeaut, R. Shrestha, L. Su, A. Reisinger*, et al.*, "Bathymetric Lidar Mapping of Redfish Bay State Scientific Area, Texas," presented at the 14th Annual JALBTCX Workshop, 2013.
34. M. J. Starek, J. C. Fernandez-Diaz, A. Singhania, R. L. Shrestha, J. C. Gibeaut, L. Su*, et al.*, "Bathymetric Lidar Mapping of Seagrass Distribution within Redfish Bay State Scientific Area, Texas," presented at the American Geophysical Union, Spring Meeting 2013, 2013.
35. J. C. Fernandez-Diaz, R. L. Shrestha, W. E. Carter, C. Glennie, M. Sartori, and A. Singhania, "NCALM's Lessons Learned and Insights into the Future from Ten + Years of Providing Geodetic Images for the monitoring of Hazards and the Response to Disasters," presented at the American Geophysical Union, Fall Meeting 2012, 2012.
36. W. E. Carter, R. L. Shrestha, C. L. Glennie, M. Sartori, and J. C. Fernandez-Diaz, "Geodetic Imaging for Rapid Assessment of Earthquakes: Airborne Laser Scanning (ALS)," presented at the American Geophysical Union, Fall Meeting 2010, San Francisco, 2010.
37. M. Oskin, R. Arrowsmith, A. Hinojosa, J. Gonzalez, A. Gonzalez, M. Sartori*, et al.*, "Airborne Lidar Survey of the 4 April 2010 El Mayor-Cucapah Earthquake Rupture," presented at the Southern California Earthquake Center 2010 Annual Meeting, Palm Springs, CA, 2010.
38. J. C. Fernandez, R. L. Shrestha, W. E. Carter, C. K. Slatton, and A. Singhania, "The UF GEM Research Center Mobile Terrestrial Laser Scanner System M-TLSS Applied to Beach Morphology Studies in St. Augustine, Florida.," presented at the American Geophysical Union, Fall Meeting 2006, San Francisco, CA, 2006.
39. A. Singhania and J. C. Fernandez, "On the Potential Implementation of Ground-based Scanning & Imaging LIDARs on Future Surface Planetary Exploration Missions," presented at the American Geophysical Union, Fall Meeting, 2006.

E. INVITED PRESENTATIONS AND LECTURES

1. 20201116, "Revealing "Lost" Cities with Airborne Lidar," presented virtually to 4 classes of second graders from The Awty International School, Houston, Texas.
2. 20200403, "Technical and Ethical Lessons from a Decade of Lidar Project Execution in Mesoamerica," presented virtually at the Getty Research Institute 2020 Lidar Workshop, LiDAR: Research, Protection, and Conservation of Archaeological Heritage in the 21st Century.
3. 20200228, "NCALM: ~25 Years providing research quality lidar to the scientific and engineering community," presented at the Mesoamerica LiDAR Workshop: 2020 UT Sibley Conference and Planet Texas 2050, University of Texas at Austin.
4. 20200121, "Ten years revealing "Lost" Cities and other ancient secrets with Airborne Lidar," presented for the Fort Bend Archaeological Society in Richmond, TX.
5. 20191115, "10 Years + 10,000 km² = 100s of cool discoveries," presented at the University of Texas at San Antonio.
6. 20191023, "Flights into the Past," LIDAR MAGAZINE webinar series.
7. 20190916, "Ten years revealing "Lost" Cities and other ancient secrets with Airborne Lidar," presented for the Clear Lake Gem and Mineral Society in Clear Lake, TX.
8. 20190308, "Mapping Terrorist Attacks, Species Evolution, Earthquakes and Lost Cities: Adventures and Lessons in Interdisciplinary Engineering," presented at the University of Houston, Department of Civil Engineering Graduate Seminar, Houston, TX.
9. 20190322, "The Science and Engineering Behind the Media Coverage of the Pacunam Lidar Initiative (PLI) Revealing "Lost Treasures" of the Maya in Petén, Guatemala," Keynote presentation at the 2019 Meeting of the Southwest Council of Latin American Studies, San Miguel de Allende, Mexico.
10. 20190226, "Maya Megalopolis & Ancient Secretes Revealed by Airborne Lidar," special presentation at the Huston Museum of Natural History, Houston, TX.
11. 20180308, "Prospección Arqueológica utilizando lidar aerotransportado," presented to the students of the Department of Anthropology, Universidad Nacional Autonoma de Honduras, Tegucigalpa, Honduras.
12. 20171208, "To lidar, or not to lidar? Ethical and practical reflections on my explorations and investigations in the Honduran Mosquitia," presented at Tulane University Middle America Research Institute, New Orleans, LA.
13. 20170722, "Overview and Research Potential of the 2016 Pacunan Lidar Initiative (PLI) dataset," presented at the PLI workshop, Guatemala City, Guatemala.
14. 20170224 "Prospección Arqueológica utilizando lidar aerotransportado," presented to the students of the College of Space Sciences, Universidad Nacional Autonoma de Honduras, Tegucigalpa, Honduras.
15. 20170202, "Exploring Ancient Ruins in the Honduran Mosquita Jungle with Laser Mapping," presented for the Clear Lake Association of Senior Programs (CLASP) at the University of Houston Clear Lake, Texas.
16. 20160831, "Mapping Lidar as a Tool for Global Topography from Space," presented to the Solid Earth Panel of the National Academies 2017-2027 Decadal Survey for Earth Science and Applications from Space, Washington D.C.
17. 20160201, "Desmitificando la Ciudad Blanca," presented to a general audience public for a special event organized by the US Embassy in Honduras and the Asociacion Fulbright Honduras, Tegucigalpa, Honduras.
18. 20151024, "The Search for Legendary "Lost Cities" in Honduras: Aerial Lidar and Ground Exploration," presented at the Department of Geology, Portland State University, Portland, OR.
19. 20151015, "Exploring Ancient Ruins in the Honduran Mosquita Jungle with Laser Mapping," presented for the Clear Lake Association of Senior Programs (CLASP) at the University of Houston Clear Lake, Texas.

20. 20131021, "The UTL lidar discovery mission in the Honduran Mosquitia," presented at the CyArk 500 Challenge, London, United Kingdom.
21. 20121202, "NCALM's LiDAR Workflow: The art & science of planning, collecting, processing and delivering research grade LiDAR products," Keynote talk at the 2012 Critical Zone Observatory (CZO) Lidar Workshop, University of California Berkeley.
22. 20080521, "Overview of the NSF National Center for Airborne LASER Mapping (NCALM)," presented at the Second National Lidar Meeting organized by USGS, Reston, VA.

F. FUNDING SUMMARY

F1. Sponsored Research Proposals and Grants:

Year/ Sponsor	Project Title/ Role / Project PI	Duration/ Effort	Status	Budget US$
2021 NSF	Geospatially Linked and Organized Built Environments for Thriving, Equitable Communities (GlobeTec) FA, PI: Michael Olsen, Oregon State U.	10 years TBD	Preproposal submitted	~25M
2021 NGA	Predicting Lidar and Radio Frequency Foliage Penetration in Tropical Forests Through Machine Learning Regressions of Airborne and Spaceborne data. PI	2 years 8 months	Invited to submit full proposal	245k
2021 SAA-KG	Archaeological Survey of the Maranones Viejo Site in the Guaimoreto Lagoon Region of North Eastern Honduras FA, PI: Whitney Goodwin, U. Missouri	2 years 1 month	Under review	15k
2020 NGS	Pre-Columbian urbanism, hydraulic societies, and climate change in Amazonia Co-PI, Co-PI Jose Iriarte U. Exeter	2 years 2 months	Under review	178k
2020 UKRI-NSF	Resilience and vulnerability of early urban societies in relation to water management and climate change in the Bolivian Amazon Co-PI, Co-PI Jose Iriarte U. Exeter	3 years 4 months	Invited to submit full proposal	1.5M
2020 SSHRC	Migration, Urbanization, and Transformation during the Late Classic (600-900 CE) in the Calakmul Region, Mexico Co-PI, Co-PI Kathryn Reese-Taylor U. Calgary	2 years 2 months	Under review	150k
2019 NASA	Assessing ICESat-2 terrain and tropical canopy detection fidelity for environmental and archaeological studies in Mesoamerica PI	2 years 6 months	Unfunded	112k
2019 NGS	Pushing the limits of airborne lidar detection to further our understanding of Maya wetland agriculture. Co-PI, Co-PI Kathryn Reese-Taylor U. Calgary	2 years 2 months	Unfunded	30k

Year/ Sponsor	Project Title/ Role / Project PI	Duration/ Effort	Status	Budget US$
2018 USAFCP	Preserving and Sharing the Cultural Patrimony of the Honduran Mosquitia through the Mosquitia Virtual Museum. Co-PI, Co-PI Anna Cohen, Utah State U.	2 years 2 months	Under review	60k
2018 NSF	Collaborative Research: Facility Support to Renew Operation of the National Center for Airborne Laser Mapping (NCALM) Co-PI, Co-PI: Craig Glennie, U. Houston	5 years 20 months	Funded	3.26M
2017 NGS	Socio-ecological Landscapes of the Guaimoreto Lagoon, Northeast Honduras FA, PI: Leslie Reeder-Myers, Temple U.	2 years 1 month	Funded	30k
2015 AFRL	Center of Excellence in Research Data Analysis PI: Craig Glennie, U. Houston	5 years	Unfunded	4.897M
2014 GoMRI	RESPONDER: Remote Sensing for Prompt On-Demand oil spill Event Response Consortium OP, PI: Ramesh Shrestha, U. Houston	5 years	Did not pass preproposal stage	N/A
2013 NSF	Collaborative Research: Facility Support to Renew Operation of the National Center for Airborne Laser Mapping (NCALM) OP, PI: Ramesh Shrestha, U. Houston	5 years 20 months	Funded	3.07M
2012 NSF	3000 Years of Human-Environmental Interaction in the Peten, Guatemala OP, PI: Thomas Garrison, Brown U.	2 years 1 month	Unfunded	200k
2010 TX-ETF	Center for the Integration of Remote Sensing Technologies and Unmanned Aerial Systems OP, PI: Ramesh L Shrestha, U. Houston	5 years	Unfunded	7M

Sponsor acronyms - AFRL: Air Force Research Laboratory, GoMRI: Gulf of Mexico Research Initiative, NASA: National Aeronautics and Space Administration, NGA: National Geospatial Intelligence Agency, NGS: National Geographic Society, NSF: National Science Foundation, SSHRC: Social Sciences and Humanities Research Council of Canada, SAA-KG: Society for American Archaeology (SAA) - H. and T. King Grant for Precolumbian Archaeology, TX-ETF State of Texas Emergent Technology Fund, UKRI: United Kingdom Research and Innovation, USAFCP: US Ambassadors Fund for Cultural Preservation

Role acronyms - FA: faculty associate, OP: other professional, PI: principal investigator

F2. NCALM NSF Supplements and GIM Lab Service Contracts Coordinated and Supported:

Year	Sponsor	Project Title (Project PI)	Budget	Credit
2021	PI funds	Lidar mapping Western Central Belize (B. Houk)	$120,000.00	100%
2021	PI funds	Lidar mapping Central Campeche, Mexico (E. Lemmonier)	$31,097.86	100%
2021	PI funds	Lidar mapping Michoacan, Mexico (J.L. Punzo-Diaz)	$70,000.00	100%
2021	PI funds	Lidar mapping Central Campeche, Mexico (A. Benavides)	$31,173.98	100%
2021	PI funds	Lidar mapping Central Mexico (S. Clayton)	$12,026.00	100%
2021	NSF supp.	Lidar mapping Petén, Guatemala (T. Pugh)	$123,197.00	40%

Year	Sponsor	Project Title (Project PI)	Budget	Credit
2021	PI funds	Lidar mapping Trujillo Bay, Honduras (M Reindel)	$26,980.00	100%
2021	NGS	Lidar mapping Quintana Roo, Mexico (F. Estrada-Beli)	$130,000.00	100%
2021	PI funds	Lidar mapping Quintana Roo, Mexico (M. Brown)	$20,207.84	100%
2021	PI funds	Lidar mapping Northen Campeche, Mexico (W. Ringle)	$32,588.27	100%
2021	PI funds	Lidar mapping Southern Campeche, Mexico (O. Fellows)	$25,000.00	100%
2021	PI funds	Lidar mapping Northen Campeche, Mexico (I. Paap)	$20,207.84	100%
2021	PI funds	Lidar mapping Yucatan, Mexico (T. Stanton)	$41,727.08	100%
2021	PI funds	Lidar mapping Michoacan, Mexico (G. Pereira)	$16,520.00	100%
2021	PACUNAM	Lidar mapping Peten, Guatemala (PLI technical board)	$350,000.00	50%
2020	PI funds	Lidar mapping Bobcat Ranch Fire, CA (R. DiBiase)	$10,000.00	10%
2020	NSF supp.	Lidar mapping of Sparta earthquake, NC (P. Figuiereido)	$8,996.00	10%
2020	PI funds	Lidar data Southern Campeche, Mexico (K. Reese-Taylor)	$10,000.00	100%
2020	PI funds	Lidar data Palenque, Mexico (R. Liendo)	$8,000.00	100%
2019	NSF supp.	Lidar mapping of Ridgecrest earthquake, CA	$193,466.00	10%
2019	US Navy	Lidar mapping of Ridgecrest earthquake, CA	$183,066.28	50%
2019	C. Ridgecrest	Lidar mapping of Ridgecrest earthquake, CA	$15,000.00	50%
2019	PI funds	Lidar mapping Dump Creek, ID (B. Yanites)	$9,694.94	50%
2019	PI funds	Lidar mapping Red Canyon, WY (C. Kelleher)	$9,838.27	50%
2019	PI funds	Hyperspectral mapping Cedar Mountaon, UT (Z. Sylvester)	$4,265.87	50%
2019	NSF supp.	Lidar mapping Lone Pine, CA (R. DiBiase)	$63,181.00	10%
2019	NSF supp.	Lidar mapping Tabasco, Mexico (T. Inomata)	$158,789.00	10%
2019	NSF supp.	Lidar mapping Chiapas, Mexico (C. Golden)	$110,000.00	10%
2019	PACUNAM	Lidar mapping Peten, Guatemala (PLI technical board)	$400,000.00	50%
2019	PI funds	Lidar mapping Chiapas, Mexico (C. Golden)	$25,000.00	100%
2019	PI funds	Lidar mapping Chiapas, Mexico (C.Hernandez)	$30,013.00	100%
2019	FUNDAR	Lidar mapping Cihuatan, El Salvador (P. Amaroli)	$18,000.00	100%
2019	PI funds	Lidar mapping Aventura Belize (C. Robin)	$14,068.00	100%
2019	PI funds	Lidar mapping Bladen Belize (K. Prufer)	$8,000.00	100%
2019	PI funds	Lidar mapping Pearce Belize (M. Peuramaki-Brown)	$18,000.00	100%
2019	PI funds	Lidar mapping in the Highlands Guatemala (E. Robinson)	$9,000.00	100%
2019	PI funds	Lidar mapping Escuintla, Guatemala (B. Arroyo)	$9,000.00	100%
2017	NSF supp.	Lidar mapping Yucatan, Mexico (T. Stanton)	$83,652.00	50%
2017	NSF supp.	Lidar mapping Northen Campeche, Mexico (W. Ringle)	$80,000.00	50%
2017	PI funds	Lidar mapping Tabasco, Mexico (T. Inomata)	$62,000.00	50%
2016	PACUNAM	Lidar/HSI mapping Peten, Guatemala (PLI technical board)	$539,517.00	50%

G. TEACHING AND MENTORING EXPERIENCE

G1. Student Supervision at University of Houston:

Years	Level	Student Name / Dissertation, Thesis or Research Title	Program
2019 – present	Ph.D.	Mariya Velikova / dissertation topic TBD	GSES
2019-2020	M.Sc.	Meghan Eileen DiBacco / Land Subsidence and Groundwater Level Changes in the Dickenson – La Marque Area, Galveston County, Texas During the Past Two Decades	EAS

Years	Level	Student Name / Dissertation, Thesis or Research Title	Program
2019 - 2020	M.Sc.	Daniel Rusinek / Analyzing the Effects of Hurricane Harvey on Dune Morphology and Coastline Loss Using Terrestrial Laser Scanning: A Case Study at Bryan Beach, Texas	EAS
2018	Postdoc	Unal Okyay / Surface deformation at Yellowstone Caldera: Observations from repeat ALS between 2008 and 2017	EAS/GSES
2018-2019	B.S. M.Sc.	Sven Sorhus / unstructured research and training on airborne lidar data collection, processing and analysis at undergraduate and master levels	GSES
2018 - 2019	M.Sc.	Zachary Parra / Land Subsidence and Rebound in the Houston Ship Channel and Downtown Houston (2000-2018).	EAS
2017 - 2018	M.Sc.	Vasilios Tsibanos / Subsidence and Fault Displacements Along the Long Point Fault Derived from Continuous GPS Observations (2013-2017)	EAS
2016 – present	Ph.D.	Andrea Albright / dissertation topic TBD Spring 2021	GSES
2014 - 2018	Ph.D.	Nima Ekhtari / Land Cover and Impervious Surface Mapping using Multispectral Airborne Laser Scanner Data. *Did not serve on the committee but guided the student through his research*	GSES
2013	B.S.	Seth Pedersen / Measuring Water Clarity in a Laser-Mapping Context: A Comparison of a Secchi Disk, Turbidimeter, and Prototype Transmissometer	GSES
2012-2016	Ph.D.	Zhigang Pan / Shallow Water Bathymetry Using Full Waveform Bathymetric Lidar and Hyperspectral Imagery	GSES

Program acronym - GSES: Geosensing Systems Engineering and Science, EAS: Earth and Atmospheric Sciences

G2. Teaching and Course Development:

1. 2008 Fall, University of Florida, Airborne Lidar Optical Laboratory, developed a lab with four practical activities (1. reflection, transmission and absorption, 2. polarization; 3. diffraction, and 4. semiconductor lasers) employing equipment from the photo-electronics lab of the Electrical Engineering Department. The goal for the lab was to help students better assimilate physics and electronic operational principles of airborne mapping liar. Taught the lab for a group of ten graduate students.
2. 2008 Summer, International Space University, Summer Session Program (SSP) in Barcelona, Spain. Served as teaching associate with the responsibilities of assisting the faculty with lectures on satellite applications (telecommunications, navigation & positioning, remote sensing); and to guide students (post bachelor level) in the development of a team projects aimed at identifying critical space technologies for monitoring volcano hazards and to improve civil agencies in the disaster management cycle (mitigation, preparation, response, recovery).
3. 2007 Summer, International Space University, Summer Session Program (SSP) in Beijing, China. Same as above but focused on earthquakes hazards and events.
4. 1995-1996, Universidad Nacional Autonoma de Honduras, Astronomical Observatory. Assisted in the development of an undergraduate level course titled Introduction to Astronomy and Astrophysics. In addition to the course material, assisted in the development of practical activities using computational, astronomical instrumentation and bench laboratory equipment. Taught the course lab for a couple of semesters for students groups that ranges from 10 to 20 individuals.

H. ACADEMIC HONORS AND AWARDS

1. 2016, National Science Foundation Antarctic Service Medal.
2. 2007, University of Florida Alumni Graduate Award to carry PhD studies.
3. 2007, National Science Foundation, Semifinalist Honor in the 2007 International Science and Engineering Visualization Challenge.
4. 2006, International Space University (ISU) scholarship to participate in the 2006 ISU Summer Session Program, held in Strasbourg, France from July 3rd to September 1st, 2006.
5. 2005, United States Department of State, Fulbright Scholarships Program. Graduate Studies Scholarship to participate in the University of Florida Geosensing Systems Engineering program.
6. 2003, United States Department of State International Visitor Program invitation to the international seminar on "Telecommunications, Information Technologies & the Internet". (Washington D.C.; Seattle, Washington; Grand Island, Nebraska; Austin, Texas; Tampa, Florida). July 14th – August 1st 2003.
7. 1999, United Nations Grant to participate in the Space Generation Forum for the Third United Nations Conference for the exploration and peaceful uses of other space (UNISPACE III), Viena and Graz, Austria, July 19 – 30, 1999.
8. 1997, "Summer Undergraduate Research Fellowships (SURF)", California Institute of Technology research at the NASA Jet Propulsion Laboratory (JPL/NASA).
9. 1997, First Place in the student category at the First National Science and Technology Contest of Honduras, organized by the National Council for Science and Technology (COHCIT).
10. 1996, Traineeship at the European Space Agency Satellite Tracking Station in Villa Franca del Castillo, Madrid, Spain.

I. ACADEMIC AND PROFESSIONAL SERVICE

1. 2019 December to present, Serving as Associate Editor for the IEEE Journal of IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing (JSTARS).
2. 2007 December to present, serve as reviewer for journal and conference papers including: IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing (JSTARS), IEEE Transactions of Geoscience and Remote Sensing (TGARS), IEEE Geoscience and Remote Sensing Letters (GSRL). Remote Sensing of the Environment, MDPI Remote Sensing, MDPI Forest, MDPI Sensors, MDPI Applied Science, International Journal of Remote Sensing, Journal of Surveying Engineering. IEEE International Geoscience and Remote Sensing Symposium (IGARSS), IEEE International Conference on Acoustics, Speech, & Signal Processing (ICASSP).
3. 2018, Co-organized scientific session at the IEEE International Geoscience and Remote Sensing Symposium (IGARSS).
4. 2018, Assisted in the preparation of data and provided support that enabled the IEEE GRS Data fusion contests, which provide novel airborne datasets to the broad remote sensing community to inspire the development of new applications and algorithms. http://hyperspectral.ee.uh.edu/?page_id=459
5. 2013, Co-organized scientific sessions at the American Geophysical Union (AGU) Meeting of the Americas (MOA).
6. 2013, Assisted in the preparation of data and provided support that enabled the IEEE GRS Data fusion contests, which provide novel airborne datasets to the broad remote sensing community to inspire the development of new applications and algorithms. http://hyperspectral.ee.uh.edu/?page_id=459 and http://hyperspectral.ee.uh.edu/?page_id=1075 .
7. 2010 to present, assist in the production of print and audio-visual material for stories aimed at general audience public for the promotion of science and engineering in media such as the National Geographic Society, American Scientist and TV networks such as the Discovery Channel and NatGeo.

J. OTHER INFORMATION

J1. Memberships and Affiliations:

1. Institute of Electrical and Electronic Engineers (IEEE) and its Geoscience and Remote Sensing Society (GRSS)
2. American Geophysical Union (AGU)
3. Society for American Archaeology (SAA)
4. Airplane Owners and Pilots Association (AOPA)

J2. Certifications:

1. Aircraft pilot certifications issued by the US Federal Aviation Administration (FAA):
    1.1. 20120126, Private Pilot Certificate (3615337) for Single Engine Land (SEL) with complex aircraft endorsement, 303.7 total flight hours, 260.2 hour pilot in command, 116.2 dual instruction, 33.7 hours complex, 102.3 hours pilot in command cross country
    1.2. 20190508, Remote Pilot Certificate (4257229)