

CV - RANJANI W. KULAWARDHANA, PhD

Associate Professor of RS & GIS
Department of Biological and Environmental Sciences
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RESEARCH INTERESTS

Research Areas

- GIS & Remote Sensing
- Coastal & wetland ecology
- Vegetation productivity & carbon dynamics
- Climate change
- Land-use/ land-cover change & disturbance impacts
- Environmental health

Research applications

- Geospatial mapping and monitoring of vegetation productivity, carbon sequestration, & ecosystem products & services,
- Climate- and human-induced disturbance impacts on ecosystem health, productivity, carbon sequestration ability, and land-use/ land-cover change (LULCC)
- Environmental health with special focus on effects of environmental pollution
- Geospatial modeling of health disparity outcomes

EDUCATION

- PhD 2013** **Ecosystem Science and Management - Texas A&M University, College Station, Texas, USA**
- MSc 2007** **Integrated Water Resources Management** - Postgraduate Institute of Agriculture, University of Peradeniya, Sri Lanka
- BSc. 2002** **Agriculture** (sp. Agric. Biology) – Faculty of Agriculture, University of Peradeniya, Sri Lanka

PROFESSIONAL EXPERIENCE & ACADEMIC APPOINTMENTS

- 2022 (Aug) – Present **Associate Prof. of Remote Sensing & GIS**, Department of Biological and Environmental Sciences, Alabama A&M University, Normal AL
- 2014 – 2022 (July) **Assist. Prof. of Environmental Science, Remote Sensing & GIS**
Department of Biology, Jackson State University, Jackson MS
- 2014 (Feb – July) **Postdoctoral Research Associate**, Spatial Sciences Lab, Department of Ecosystem Science & Management, Texas A&M, College Station, Texas
- 2009 - 2013 **Graduate Research/ Teaching Assistant**, Department of Ecosystem Science & Management/ Texas AgriLife Research., Texas A&M University, College Station, Texas
- 2005 - 2008 **Remote Sensing & GIS Specialist/ Research Scientist**, International Water Management Institute, Colombo, Sri Lanka - <http://www.iwmi.cgiar.org/>
- 2005 - 2008 **Visiting Faculty Fellow**, Postgraduate Institute of Agriculture, University of Peradeniya, Sri Lanka - <https://www.pgia.ac.lk/>
- 2003 - 2005 **Graduate Research Assistant**, Postgraduate Institute of Agriculture, University of Peradeniya, Sri Lanka

2003 – 2004 **Research Assistant**, Horticultural and Crop Research Institute of the Department of Agriculture, Sri Lanka
2002 -2003 **Assistant Lecturer**, Department of Agricultural Biology, Faculty of Agriculture, University of Peradeniya, Sri Lanka

GRANTS (FUNDED)

Granting agency	Name of the Grant	Role	Duration & amount funded
NASA EPSCoR	Development of an Improved Visualization Tool for the Assessment of Climate Change Impacts on Mississippi Sound Coastal Waters using Integrated NASA Satellite and a Novel Autonomous Surface Vessel Collected Field Datasets (White paper was accepted for full proposal submission)	CoPI (PI: Padmanava Dash, Mississippi State University)	2022-2025 Sub-award to JSU: 150K (for 3 years) Total: 749.98K
NIH	Developing Geospatial Modeling Framework for Uncovering Health Disparities During COVID-19 Pandemic	PI	2021-2024 169K for 3 years
NOAA EPP/ MSI	NOAA Center for Coastal and Marine Ecosystems (NOAA CCME)	Co-PI (PI - Larry Robinson, Florida A&M University; Institutional PI – Timothy Turner, Dept. of Biology)	2016- 2021 \$15.4 million for 5 years (sub-award to JSU: \$1.37 million)
Mississippi Research Consortium	Mississippi Storm and Flooding Ecosystem Responses – Coastal Environment Evaluation Strategies (MS SAFER CEES) Working Group	Co-PI (PI: Patrick Biber, University of Southern Mississippi Gulf Coast Research Laboratory)	March 2016 – March 2017 6K for 1 year
NOAA EPP/ MSI	NOAA Environmental Corporative Science Center	Co-PI (PI: Michael Abazinge, Florida A&M, Institutional PI: Paul B. Tchounwou)	August 2014 – August 2018

COURSES TAUGHT

(At Alabama A&M University)

- Technology in Agricultural & Biological Sciences (NRE 199)
- Introduction to GIS (NRE 365)

- Remote Sensing for Environment (NRE 476/ 576)

(At Jackson State University)

- Introduction to Marine and Environmental Science (BIO 114) - online & traditional
- Environmental Science (BIO 201) - online & traditional
- Introduction to Remote Sensing for Environmental Science (ENV 717)
- Application of Remote Sensing in Environmental Science (ENV 718)
- Ecology (BIO 423/ BIO 523) - online & traditional
- Ecology Lab (BIOL 423/ BIO 523)
- Wetland Ecology (ENV 802)
- General Biology (BIO 111)
- Thesis Research-MSc (BIO 599)
- Dissertation Research Lab-PhD (ENVL 999)

STUDENT MENTORING

Undergraduate students (Faculty mentor)

Student Details	Research topic
Alexie Feaster (2021-2022)	Geospatial modelling of COVID-19 Health Disparity outcomes
Aleeisha Woods - NOAA CCME scholar (2020 – 2021)	Geospatial data and mapping for the study of endangered wild life in MS
Kennedy Jones - NOAA CCME scholar (2018-2021)	Geospatial mapping of Urban Heat Island (UHI) effect using remotely sensed land-use/ land-cover (LULC) and land surface temperature (LST) data
Trenton Johnson – NOAA ECSC summer intern (2015)	GPS data collection for mapping coastal marsh vegetation and land cover

Graduate Students

Student Details	Dissertation/ Research topic
Shinjita Gosh– PhD, Env Sci (Chair) – 2021-	Effects of vaccinations on spread and mortality rates during COVID-19 pandemic
Destiny Crockett, LSMAP Scholar, MSc, Env Sci (Chair) - 2017-2019	Evaluation of urban heat island effect using satellite derived estimates of impervious areas and land surface temperatures
Jennifer Blanks, LSMAP Scholar, MSc, Env Sci (Chair) - 2015 – 2017	Mapping seagrass using Landsat 8: a case study in the Pascagoula River basin, Mississippi, USA
Ashley Acuna, MSc, Env Sci (Chair) - 2015 -2017	Potential impacts of deep-water horizon oil spill on heavy metal pollution: case study of Jackson County, Mississippi
Eric Gulledge, NOAA ECSC scholar – PhD, Env Sci (Co-chair) - 2014 – 2017	Spatial variations in salt marsh below-ground carbon stocks and soil properties – Case study of Grand Bay National Estuarine Research Reserve, Mississippi, USA

Taimei Harris, NOAA ECSC scholar – PhD, Env Sci (Co-chair) - 2014-2017	Spatial variations and temporal dynamics of <i>Juncus roemerianus</i> dominated wetland vegetation characteristics and carbon stocks of Grand Bay National Estuarine Research Reserve, Mississippi, USA
2020 – 2021 – Tolulope Asela, MSc, Env Sci (committee member)	Evaluation of endocrine disrupting effects of graphene oxide on the thyroid of Japanese Medaka
2019-2021 - Kaitlin Hewitt, MSc, Biology (committee member)	Stroke Risk Factor Differences in African American Men and Women
2019 – 2020 - Takia Smith, MSc, Env Sci (committee member)	Structures and properties of polyhydrated nucleic acid bases: a computational study

PUBLICATIONS

**denotes students mentored/ advised by Kulawardhana R W*

In preparation

- **Kulawardhana RW**, Feaster A*, et al. Geospatial characterization of sociodemographic and economic indicators of COVID 19 health disparities in Mississippi, USA: County-level analysis (in prep for International Journal of Environmental Research & Public Health)
- **Kulawardhana RW**, Crocket DD, and Wu W. Mississippi's coastal wetland Land Use/ Land Cover (LULC) change analysis: Quantitative assessments using remote sensing (in prep for Remote Sensing).
- **Kulawardhana RW**, Jones K* & Crocket DD*. Evaluation of spatial and temporal variations of surface urban heat island effect across conterminous United States using remotely sensing (in prep)

Peer review publications

- **Kulawardhana, R. W.**, Popescu, S. C. & Feagin, R. A. (2017). Airborne lidar remote sensing applications in non-forested short stature environments: a review. *Annals of Forest Research*, DOI:10.15287/afr.2016.719.
- **Kulawardhana, R. W.**, Feagin, R. A., Popescu, S. C., Boutton, T. W., Yeager, K. & Bianchi, T. S. (2015). The role of elevation and relative sea level history in determining carbon distribution in *Spartina alterniflora* dominated salt marshes. *Estuarine Coastal and Shelf Science*, 154, 48-57
- Gulledge, E. M*, Taimei, T. H*, **Kulawardhana, R. W**, Fengxiang, X. H., & Tchounwou, P. B. (2015). Impacts of the Deep-Water Horizon Oil Spilling on the Gulf Coastal Salt Marsh and its Carbon Sequestration Capacity. *J Bioremed Biodeg*, 7, e170
- **Kulawardhana, R. W.**, Popescu, S. C. & Feagin, R. A. (2014). Fusion of lidar and multi-spectral data to quantify saltmarsh carbon stocks. *Remote Sensing of Environment -Special Issue on Remote Sensing of Vegetation Structure, Condition, and Function*, 154, 345-357
- Bianchi, T.S., Allison, M. A., Zhao, J., Li, X., Comeaux, R. S., Feagin R. A. & **Kulawardhana, R. W.** (2013). Historical reconstruction of mangrove expansion in the Gulf of Mexico: Linking climate change with carbon sequestration in coastal wetlands. *Estuarine, Coastal and Shelf Science*, 119 (1), 7–16
- Hideto, F., Busia, D., **Kulawardhana, R. W.**, Thenkabail, P. & Namara, R. (2011). Features of river flow in inland valleys in semi-deciduous forest zone in Ghana. *Transactions of the Japanese Society of Irrigation, Drainage and Rural Engineering*, 77 (6), 637-644.

- Islam, Md. A., Thenkabail, P. S., **Kulawardhana, R. W.**, Alankara, R., Gunasinghe, S., Edussriya, C. & Gunawardana, A. (2008). Semi-automated methods for mapping wetlands using Landsat ETM+ and SRTM data, *International Journal of Remote Sensing*, 29 (24), 7077 — 7106.
- **Kulawardhana, R. W.**, Thenkabail, P. S., Vithanage, J., Biradar, C., Islam, Md. A., Gunasinghe, S. & Alankara, R. (2007). Evaluation of the Wetland Mapping Methods using Landsat ETM+ and SRTM Data. *Journal of Spatial Hydrology (JoSH)*, 7(2): 1530-4736.

Book chapters

- Reeves M, Angerer J, Hunt ER, **Kulawardhana W**, Loboda T, Loveland T, Metternicht G, Ramsey D Washington-Allen R. (2015). A Global View of Remote Sensing of Rangelands: Evolution, Applications, Future Pathways. In *Remote Sensing Handbook. Volume II: Land Resources: Monitoring, Modeling, and Mapping* (Thenkabail, P.S. ed.). Boca Raton, FL: CRC Press/Taylor & Francis Group

Papers published in conference proceedings

- **Kulawardhana, R.W.**, Harris, T. T*. & Gulledge, E. M* (2016). Impacts of natural- and human-induced disturbances on Estuarine Wetland Ecosystems: Case study from Grand Bay National Estuarine Research Reserve (NERR), Mississippi, USA. *Proceedings of the NOAA EPP/MSI 8th Biennial Education and Science Forum, Aug 28-31, New York, USA*
- Harris T.T*, **Kulawardhana R.W.**, Gulledge E. M*, Han F. X. & Tchounwou P B (2016). Spatial patterns and temporal dynamics of *Juncus roemerianus* dominated wetland vegetation characteristics and carbon stocks of Grand Bay National Estuarine Research Reserve, Mississippi. *Proceedings of the NOAA EPP/MSI 8th Biennial Education and Science Forum, Aug 28-31, New York, USA.*
- Gulledge EM*, **Kulawardhana RW**, Harris TT*, Johnson TK*, Han FX and Tchounwou P B (2016). Characteristics of soil carbon stocks in the Grand Bay National Estuarine Research Reserve (NERR) wetland ecosystems of the North Gulf of Mexico Region: Geo-spatial modeling approach. *Proceedings of the NOAA EPP/MSI 8th Biennial Education and Science Forum, Aug 28-31, in New York, USA.*
- Washington-Allen, Robert A., March, Rosaleen G., McNelis, John J., Roberts, Joseph R., Seiden, Zachariah T., **Kulawardhana, Ranjani W.**, Reeves, Matthew C., and Mitchell, John E. (2015). Examining the causes of US dryland "greening" and their relationships to commercial livestock grazing using time series of LST and NPP satellite data. *Proceedings of the 3rd UNCCD Scientific Conference: "Combating desertification/land degradation and drought for poverty reduction and sustainable development: the contribution of science, technology, traditional knowledge and practices" held n 9-12 March in Cancun, Mexico.*
- **Kulawardhana, R. W.**, Robert A. Washington-Allen, Popescu, S. C., Feagin, R. A., & Matt C. Reeves (2012). Regional scale assessment of rangelands degradation and its key drivers using remotely sensed vegetation net primary productivity data. *Proceedings of the 4th Int. Conference on Geo-Information Technology for Natural Disaster Management. November 7-8, 2012, Colombo, Sri Lanka*
- Washington-Allen, R. A., **Kulawardhana, R. W.**, Reeves M. C. & J. E. Mitchell (2011). The impact of livestock grazing on US dryland productivity from 2000 to 2006. *Proceedings of the IX International Rangeland Congress, Diverse Rangelands for a Sustainable Society, April 2 – 8, 2011, Rosario, Argentina*
- **Kulawardhana, R. W.**, Thenkabail. P.S., Masiyandima, M., Biradar, C.M., Vithanage, J., Finlayson, M., Gunasinghe, S. & Alankara., R. (2006). Evaluation of different methods for

delineation of wetlands in the Limpopo river basin using Landsat ETM+ and SRTM data. *Proceedings of the first Globwetland Symposium: Looking at wetlands from space held on October 19 – 20 in Frascati, Italy.*

- Thenkabail, P.S., Biradar, C.B., Noojipady, P., Islam, Md. A., Vithanage, J., Velpuri, M., Dheeravath, V., **Kulawardhana, R. W.**, Li, Y.J., Gunasinghe, S. & Alankara, R. (2006). International Water Management Institute's Data Storehouse Pathway (IWMIDSP): A unique data and knowledge gateway of spatial data with emphasis on river basins. *Proceedings of SPIE, Vol. 6418.*
- **Kulawardhana, R. W.**, Dayawansa, N. D. K. & De Silva, R. P. (2004). Determination of spatial and temporal variations of vegetation cover, land surface temperature and rainfall and their relationships over Sri Lanka using NOAA AVHRR data, *Tropical Agricultural Research*, 16 (1), 282-29 - Proceeding papers

Book reviews

- **Kulawardhana R. W.** (2013). Review on the book "Environmental Remote Sensing and Systems Analysis, ed. Ni-Bin Chang, CRC Press, NY". *International Journal of Photogrammetric Engineering and Remote Sensing*. *Photogrammetric Engineering and Remote Sensing*, 79 (7), 508-603.
- **Kulawardhana R. W.** (2012). Review on the book "Remote sensing and GIS technologies for monitoring and prediction of disasters, ed. Shailesh Nayak and Sisi Zlatanova, Oxford, NY, Springer". *International Journal of Digital Earth*, 4(6), 539 – 541.
- **Kulawardhana R. W.** (2011). Review on the book "Remote sensing of vegetation: principles, techniques and applications by Hamlyn G. Jones and Robin A Vaughan, Oxford University Press, Oxford, NY". *Journal of Vegetation Science*, 22(6), 1–3.

PRESENTATIONS

(*denotes students mentored/ advised by Kulawardhana R W)

Paper Presentations

- **Kulawardhana RW**, Feaster A*, Jayasekara AS, Gosh S*, Deleveaux J, Addison C, & Tchounwou PB (2022). Geospatial characterization of sociodemographic and economic indicators of COVID 19 health disparities in Mississippi, USA: County-level analysis. NIMHD RCMI Consortium National Conference 2022, March 16-18 (virtual)
- **Ranjani Kulawardhana**, N. Welagedara & Destiny D Crockett* (2021). Effects of Land-Use/ Land-Cover of Urban heat island effects across metropolitan areas of the conterminous United States. AGU Fall meeting 2021, Dec 13-17, New Orleans, LA (virtual)
- **Ranjani Kulawardhana**, Wei Wu (2021). Quantitative assessments of Mississippi's Coastal wetland Land Use/ Land Cover (LULC) change using remote sensing. AGU Fall meeting 2021, Dec 13-17, New Orleans, LA (virtual)
- **Ranjani Kulawardhana**, Shinjita Gosh*, Jamiko Deleveaux & Paul B. Tchounwou (2021). Geospatial data and analytical technology for uncovering COVID-19 health disparities – case study from Mississippi, USA, Inauguration Research Symposium of the Jackson State University, Oct 13, Jackson MS
- **Ranjani W. Kulawardhana**, Kennedy Jones* & Destiny Crockett*(2020). Evaluation of spatial and temporal variations of surface urban heat island effect across conterminous United States using remotely sensing. AGU Fall Meeting, December 7-11 (virtual)
- Robert A Washington-Allen, Casey D. White, Ryan E Emanuel, John James McNelis, **Ranjani W Kulawardhana** & Matthew C Reeves (2020). Assessment of the Contribution of Native-,

African-, and Brown American Dryland Agriculture to US Carbon Dynamics. AGU Fall Meeting, December 7-11 - (virtual)

- **Kulawardhana RW**, Harris TT*, Gullede EC*, Jones KA*, & Crockett DD* (2020). Remote sensing-based applications in coastal studies. NOAA EPP MSI 10th biennial education and science forum, March 29 to April 1, at Florida A&M University in Tallahassee, FL – *accepted, Conference was cancelled due to COVID-19 pandemic*
- **Kulawardhana RW (2020)**. Spatial patterns and temporal dynamics of Mississippi's coastal wetland land use/ land cover. 84th Annual meeting of Mississippi Academy of Sciences (MAS), Feb 20-21, Biloxi, MS
- **Kulawardhana R. W.**, Harris T. T*, Crockett D*, & Tchounwou P B (2019) Understanding Urbanization and Sea Level Change Effects on the Spatial Distribution of Mississippi's Coastal Wetlands. Fifteenth International Symposium on Recent Advances in Environmental Health Research, February 17-20, Jackson, MS, USA
- **Kulawardhana R W**, Harris T T*, Gullede E M & Tchounwou P B (2018) Understanding changes in spatial distributions of Mississippi's coastal wetlands as affected by urbanization and sea level changes. AGU Fall Meeting, Dec 10 – 14, Washington DC, USA
- **Ranjani W. Kulawardhana**, Taimei T. Harris*, Eric M. Gullede*, Rusty A. Feagin & Paul B. Tchounwou, (2017). Wetland land use/ land cover mapping using medium to very high-resolution remote sensing data: Case study from Grand Bay National Estuarine Research Reserve of Mississippi, USA. 14th International Symposium on Recent Advances in Environmental Health Research, September 10-13, Jackson, MS, USA
- **Ranjani Kulawardhana**, Taimei Harris*, Eric Gullede* & Paul Tchounwou (2016). Wetland land-use/ land-cover changes as affected by natural and human induced disturbance regimes. 80th Annual Mississippi Academy of Sciences Meeting, February 18 – 19, Hattiesburg, MS, USA.
- **Kulawardhana R W**, Harris TT*, Gullede EM*, Feagin RA & Tchounwou PB (2016). Land-Use/ Land-Cover (LULC) change modelling using medium to very high-resolution satellite remote sensing data to evaluate natural and human induced impacts on estuarine wetland ecosystems of Grand Bay National Estuarine Research Reserve (NERR) of Mississippi, USA, International Society for Ecological Modelling Global Conference 2016, May 8-12, Maryland, USA
- **Kulawardhana, R.W.**, Harris, T. T*. & Gullede, E. M* (2016). Impacts of natural- and human-induced disturbances on Estuarine Wetland Ecosystems: Case study from Grand Bay National Estuarine Research Reserve (NERR), Mississippi, USA. NOAA EPP/MSI 8th Biennial Education and Science Forum, Aug 28-31, New York, USA
- Harris T.T*, **Kulawardhana R.W.**, Gullede E. M*, Han F. X. & Tchounwou P B (2016). Spatial patterns and temporal dynamics of *Juncus roemerianus* dominated wetland vegetation characteristics and carbon stocks of Grand Bay National Estuarine Research Reserve, Mississippi. NOAA EPP/MSI 8th Biennial Education and Science Forum, Aug 28-31, New York, USA.
- Gullede EM*, **Kulawardhana RW**, Harris TT*, Johnson* TK, Han FX and Tchounwou P B (2016). Characteristics of soil carbon stocks in the Grand Bay National Estuarine Research Reserve (NERR) wetland ecosystems of the North Gulf of Mexico Region: Geo-spatial modeling approach. NOAA EPP/MSI 8th Biennial Education and Science Forum, Aug 28-31, New York, USA.
- **Ranjani W. Kulawardhana**, Paul B. Tchounwou, Eric M. Gullede, Taimei T. Harris, Ariane Mbemi, Justin McDowell & Roderick McDowell (2015). Geospatial analytical techniques for

the study of changing ecosystems and their effects on ecosystem health, conditions and human health. 12th International Symposium on Recent Advances in Environmental Health Research, September 13-16, Jackson, MS, USA

- **Kulawardhana, R. W.**, Feagin, R. A., Popescu, S. C., Boutton, T. W. & Tchounwou, P. B. (2015). The role of elevation, relative sea level history, and land cover conversions in determining carbon distributions in *Spartina alterniflora* dominated salt marshes in Galveston, Texas, Third International Conference on Oceanography, June 22-24, 2015, Philadelphia, Pennsylvania, USA
- Washington-Allen, Robert A., March, Rosaleen G., McNelis, John J., Roberts, Joseph R., Seiden, Zachariah T., **Kulawardhana, Ranjani W.**, Reeves, Matthew C., and Mitchell, John E. (2015). Examining the causes of US dryland "greening" and their relationships to commercial livestock grazing using time series of LST and NPP satellite data. 3rd UNCCD Scientific Conference: "Combating desertification/land degradation and drought for poverty reduction and sustainable development: the contribution of science, technology, traditional knowledge and practices", March 9-12, Cancun, Mexico.
- Robert Washington-Allen, John McNelis, Joseph Roberts, Zachariah Seiden, **Ranjani Kulawardhana**, Matthew Reeves, and John Mitchell (2014). How much of US Dryland's carbon stocks is being appropriated by commercial grazing livestock. AGU Fall Meeting, Dec 15 – 19, 2014, San Francisco, California, USA
- **Ranjani W. Kulawardhana**, Rusty A. Feagin, Sorin C. Popescu & Thomas W. Boutton (2014). Salt marsh carbon distributions as affected by relative sea level history and land cover conversions: Case study using remote sensing-based estimates in *Spartina alterniflora* dominated salt marshes in Galveston, Texas. Eleventh International Symposium on Recent Advances in Environmental Health Research, September 14-18, Jackson, MS, USA.
- **Kulawardhana, R. W.**, Feagin, R. A. & Popescu, S. C. (2013). Role of elevation and relative sea level history in determining carbon distribution in *Spartina alterniflora* dominated salt marshes. Annual Conference of ASPRS, March 23-28, Louisville, Kentucky USA –*Lightning talk*
- **Kulawardhana, R. W.**, Popescu, S. C. & Feagin, R. A. (2013). Fusion of LiDAR and multi-spectral data to estimate elevation, vegetation height and biomass in herbaceous salt marsh environments. International LiDAR Mapping Forum (ILMF). February 17-19, Denver, Colorado, USA – University featured presentation
- **Kulawardhana, R. W.**, Feagin, R. A. & Popescu, S. C. (2013). Spatial and temporal variation in carbon deposition in a Galveston, Texas salt marsh: The role of elevation and relative sea level history. AGU Fall Meeting, Dec 9 – 13, San Francisco, California
- **Kulawardhana, R. W.**, Popescu, S. C. & Feagin, R. A. (2013). Fusion of LiDAR and multi-spectral data to quantify carbon stocks in Galveston saltmarshes. Annual Conference of ASPRS, March 24-29, 2013, Baltimore, Maryland, USA
- **Kulawardhana, R. W.**, Popescu, S. C. & Feagin, R. A. (2013). Characterization of salt marsh vertical structure using airborne LiDAR and spectral data. 14th Ecological Integration Symposium of the Texas A & M University: From theory to practice - ecology and its application. March 22-23, 2013, College Station, Texas, USA
- **Kulawardhana, R. W.**, Popescu, S. C. & Feagin, R. A. (2012). LiDAR based vegetation height models to quantify carbon stocks in Galveston saltmarshes. AGU Fall Meeting, December 3-7, 2012, San Francisco, California, USA
- **Kulawardhana, R. W.**, Popescu, S. C., Feagin, R. A., Matt C. Reeves & Robert A. Washington-Allen (2012). Degradation assessment of Texas rangelands using 28 year data records of vegetation net primary productivity, precipitation and Temperature. Fourth International

Conference on Geo-Information Technology for Natural Disaster Management. November 7-8, 2012, Colombo, Sri Lanka

- Washington-Allen, R. A., Ramsey, R. D., West, N. E., **Kulawardhana, R. W.**, Reeves, M. C., Mitchell, J. E. & Van Niel, T. G. (2011). Local to global scale time series analysis of US dryland degradation using Landsat, AVHRR, and MODIS. AGU Fall Meeting, December 5 – 9, 2011, San Francisco, California
- Washington-Allen, R. A., **Kulawardhana, R. W.**, Reeves M. C. & J. E. Mitchell (2011). The impact of livestock grazing on US dryland productivity from 2000 to 2006. Proceedings of the IX International Rangeland Congress, Diverse Rangelands for a Sustainable Society, April 2 – 8, 2011, Rosario, Argentina
- **Kulawardhana, R. W.**, Dayawansa, N. D. K. and De Silva, R. P. (2005). Determination of spatial and temporal variations of vegetation cover, land surface temperature and rainfall and their relationships over Sri Lanka using NOAA AVHRR data. Annual Congress of the Post-Graduate Institute of Agriculture, University of Peradeniya, Nov 19 – 21, 2005, Kandy, Sri Lanka

Poster Presentations

- **Kulawardhana R W**, Jamiko Deleveaux, Clifton Addison, Jacqueline Stevens & Paul Tchounwou (2021). Mapping and Characterization of Spatial Disparities in COVID 19 Incidences and Mortality in Mississippi, USA: County-level Analysis, MS Health Disparities Conference, August 4, 2021 held in Biloxi, MS
- **Kulawardhana RW**, Wu W & Woods A (2021). Mississippi's coastal wetland Land Use/ Land Cover (LULC) change analysis: Quantitative assessments using remote sensing. Annual meeting of Ecological society of America (ESA), Aug 2-6, 2021, Virtual
- Jones K* & **Kulawardhana RW** (2020). Evaluation of Urban Heat Island effect using LST and LULC data over conterminous US. NOAA EPP MSI 10th biennial education and science forum, March 29 to April 1, 2020, Tallahassee, FL – *Accepted for undergraduate poster presentations, Conference was cancelled due to COVID 19 pandemic*
- Kennedy Jones* & **Kulawardhana RW** (2020). Evaluation of urban heat island effects using remotely sensed land surface temperature and land use land cover data products –84th Annual meeting of Mississippi Academy of Sciences (MAS), Feb 20-21, Biloxi, MS – *Undergraduate Poster presentation*
- Destiny Crockett*, **Ranjani W. Kulawardhana** and Paul B. Tchounwou (2019) Evaluation of urban heat island effect using satellite derived estimates of impervious surface area and LST. Fifteenth International Symposium on Recent Advances in Environmental Health Research February 17-20, Jackson, MS, USA – *Graduate Poster presentation*
- Harris T T*, **Kulawardhana R W**, Gulledge E M* & Tchounwou P B (2018). Spatial Variations and Temporal Dynamics of Juncus roemerianus Dominated Wetland Vegetation Characteristics and Carbon Stocks of Grand Bay National Estuarine Research Reserve, Mississippi, USA. AGU Fall Meeting, Dec 10 – 14, Washington DC, USA
- Destiny Crockett*, **Ranjani W Kulawardhana** & Paul B Tchounwou (2018). Evaluation of urban heat island effect using satellite derived estimates of impervious surface area and LST. AGU Fall Meeting, Dec 10 – 14, Washington DC, USA.
- Eric M. Gulledge*, **Ranjani W. Kulawardhana**, Taimei T. Harris*, Fengxiang X. Han, and Paul B. Tchounwou (2017). Wetland land use/ land cover (LULC) changes: case study from Grand Bay National Estuarine Research Reserve (NEER) Mississippi, USA. 14th International

Symposium on Recent Advances in Environmental Health Research, September 10-13, Jackson, MS, USA

- Jennifer R. Blanks* and **Ranjani Kulawardhana (2017)**. Mapping seagrass beds using Landsat 8: case study from Pascagoula River basin, Mississippi, USA. 14th International Symposium on Recent Advances in Environmental Health Research, September 10-13, Jackson, MS, USA.
- Jennifer Blanks* & **Kulawardhana R. W (2017)**. Estimation of Seagrass Extents using Remote Sensing. 81st Annual Mississippi Academy of Sciences Meeting held on February 23-24 in Hattiesburg, MS, USA.
- Taimei Harris*, **Ranjani Kulawardhana**, Eric Gulleddge*, Fengxiang Han & Paul Tchounwou (2017). Temporal dynamics and spatial patterns of *Juncus roemerianus* dominated wetland vegetation characteristics and carbon storage ability of Grand Bay National Estuarine Research Reserve, Mississippi, USA. 81st Annual Mississippi Academy of Sciences Meeting, February 23-24, Hattiesburg, MS, USA.
- Eric Gulleddge*, **Ranjani Kulawardhana**, Taimei Harris* & Fengxiang Han (2016). Wetland land cover changes: case study from Grand Bay National Estuarine Research Reserve. 81st Annual Mississippi Academy of Sciences Meeting, February 23-24, Hattiesburg, MS, USA.
- Jennifer Blanks* & **Kulawardhana R. W (2017)**. Estimation of Seagrass Extents using Remote Sensing. Emerging Researchers National (ERN) Conference in STEM, March 2-4, Washington, D.C., USA. (Poster presentation - *Proceedings not available / not published*)
- Taimei T. Harris*, **Ranjani W. Kulawardhana**, Eric M. Gulleddge*, Fengxiang X. Han and Paul B. Tchounwou (2016). Spatial Patterns in Vegetation Characteristics and Carbon Storage Ability of the Grand Bay National Estuarine Research Reserve (NERR), Mississippi, USA. 13th International Symposium on Recent Advances in Environmental Health Research, September 11-14, Jackson, MS, USA
- Eric M. Gulleddge*, **Ranjani W. Kulawardhana**, Taimei T. Harris*, Trenton K. Johnson*, Fengxian X. Han & Paul B. Tchounwou (2015). Wetland Land-Use/Land-Cover changes in the Grand Bay National Estuarine Research Reserve, Mississippi, USA: Remote Sensing based Approach. 12th International Symposium on Recent Advances in Environmental Health Research, September 13-16, Jackson, MS, USA
- Njiki Sylvianne*, Ariane Mbemi* & **Ranjani W. Kulawardhana (2015)**. Predictive geographic incidence of human West Nile Virus in Mississippi USA and its' correlation to precipitation trends. 12th International Symposium on Recent Advances in Environmental Health Research, September 13-16, Jackson, MS, USA
- Eric M. Gulleddge*, Taimei T. Harris*, **Ranjani W. Kulawardhana**, Trenton K. Johnson*, Fengxian X. Han & Paul B. Tchounwou (2015). Wetland Land-Use/Land-Cover changes in the Grand Bay National Estuarine Research Reserve, Mississippi, USA: Remote Sensing based Approach. 12th International Symposium on Recent Advances in Environmental Health Research, September 13-16, Jackson, MS, USA
- Roderick McDowell*, Justin McDowell* & **Ranjani W. Kulawardhana (2015)**. Land use change, and shifting deforestation and urbanization patterns in the Jackson metropolitan area between 1992 and 2011. 12th International Symposium on Recent Advances in Environmental Health Research, September 13-16, Jackson, MS, USA
- Taimei T. Harris*, Eric M. Gulleddge*, **Ranjani W. Kulawardhana**, Fengxiang X. Han, & Paul B. Tchounwou (2015). Vegetation Characteristics and carbon storage ability of estuarine wetland ecosystems of Mississippi: A case study from the Grand Bay National Estuarine Research Reserve (NERR). 12th International Symposium on Recent Advances in Environmental Health Research, September 13-16, Jackson, MS, USA

- Feagin, RA, **Kulawardhana, RW**, Hinson, AL, Popescu, SC, Bianchi, TS, Yeager, KM, Najjar, RG, Kroeger, KD, Windham-Myers L. (2015). Spatial quantification of blue carbon at landscape and continental scales. NASA Carbon Cycle & Ecosystems Joint Science Workshop. April 20-24, College Park, Maryland, USA
- Sorin C. Popescu, Ryan Sheridan, Kaiguang Zhao, Nian-Wei Ku, Jason Vogel, Georgianne Moore, Rusty Feagin, **Ranjani Kulawardhana** (2015). Lidar remote sensing of vegetation canopy structure and biophysical parameters at multiple scales. NASA Carbon Cycle & Ecosystems Joint Science Workshop, April 20-24, College Park, Maryland, USA
- Feagin, R, **Kulawardhana, W**, Popescu, S, Bianchi, T, Yeager, K, Najjar, R, Kroeger, K, Windham-Myers L. (2015). Spatial quantification of blue carbon at landscape and continental scales. North American Carbon Program Conference, Jan 26-29, Washington, DC, USA.
- **Kulawardhana, R. W.**, Feagin, R. A., Popescu, S. C. & Tchounwou, P. B. (2014). Carbon distributions in *Spartina alterniflora* dominated salt marshes in Galveston, Texas: The role of elevation, relative sea level history, and land cover conversions. AGU Fall Meeting, Dec 15 – 19, San Francisco, California, USA
- Eric Gullede*, **Ranjani W. Kulawardhana**, Fengxiang X. Han and Paul B. Tchounwou (2014). Characterization of soil carbon pools in the Grand Bay National Estuary Reserve Wetland ecosystems. 11th International Symposium on Recent Advances in Environmental Health Research, September 14-18, Jackson, MS, USA.
- Taimei Harris*, **Ranjani W. Kulawardhana**, Fengxiang X. Han and Paul B. Tchounwou (2014). Wetland biomass and carbon storage in the Grand Bay National Estuary Reserve: Evaluation of their potential contributions as soil carbon sinks and for the mitigation of global warming. 11th International Symposium on Recent Advances in Environmental Health Research, September 14-18, Jackson, MS, USA.
- **Kulawardhana, R. W.**, Robert A Washington-Allen, Sorin C. Popescu & Matthew C Reeves, (2013). Pixel based regression model to characterize vegetation NPP of US rangelands over the period from 1982 to 2009. Spatial Statistics Conference, June 4-7, 2013, Columbus, Ohio, USA
- **Kulawardhana, R. W.**, Popescu, S. C. & Feagin, R. A. (2013). Vegetation height models to characterize salt marsh vertical structure using airborne LiDAR. International LiDAR Mapping Forum (ILMF), February 11-13, Denver, Colorado, USA
- **Kulawardhana, R. W.**, Washington-Allen, R. A., Mitchell, J. E. & Reeves, M. C. (2012). Degradation Assessment of Texas Rangelands using 28 year data records of vegetation net primary productivity. 13th Ecological Integration Symposium of the Texas A & M University: Ecology in a Changing World. March 23-24, 2012, College station, Texas, USA
- **Kulawardhana, R. W.**, Washington-Allen, R.A., Eric S, Austin, M. A., Popescu, S., Reeves, M. C and Mitchell, J. E., (2011). A 28-year dataset to characterize vegetation productivity of US rangelands. AGU Fall Meeting, December 5 – 9, 2011, San Francisco, California
- **Kulawardhana, R. W.**, Washington-Allen, Eric S, Austin, M. A., Popescu, S., Reeves, M. C & Mitchell, J. E., (2011). Vegetation productivity of US rangelands over a 28 year period from 1982 to 2009. 96th Annual Meeting of Ecological Society of America, August 7 – 12, 2011, Austin, Texas
- Washington-Allen, R. A., **Kulawardhana, R. W.**, Reeves, M. C & Mitchell, J. E., (2011). Is commercial livestock grazing a driver of the observed net carbon gain in US Drylands? 96th Annual Meeting of Ecological Society of America, August 7 – 12, 2011, Austin, Texas

- Washington-Allen, R. A.; **Kulawardhana, R. W.**; Reeves, M. C.; Mitchell, J. E. (2010). The Impact of Livestock Grazing on US Rangeland Productive Capacity from 1981 to 2009. AGU Fall Meeting, Dec 13 – 17, 2010, San Francisco, California
- **Kulawardhana, R. W.**, Washington-Allen, R. A., Mitchell, J. E. & Reeves, M. C. (2009). Regional and national scale assessment of the impact of US livestock footprint on dryland productive capacity. AGU Fall Meeting, Dec 14 – 18, 2009, San Francisco, California
- **Kulawardhana, R. W.**, Thenkabail. P.S., Masiyandima, M., Biradar, C.M., Vithanage, J., Finlayson, M., Gunasinghe, S. & Alankara., R. (2006). Evaluation of different methods for delineation of wetlands in the Limpopo river basin using Landsat ETM+ and SRTM data. First Globwetland Symposium: Looking at wetlands from space, Oct 19 - 20, 2006, Frascati, Italy

FELLOWSHIPS/ HONORS

Fellowships/ honors

- **International Gamma Sigma Delta (GSD) Agricultural Honor Society - 2013**
- **Schlumberger Faculty for Future Fellowship** (2012/2013; 2013/2014)
- **Tom Slick Senior Graduate Fellowship** (2012/2013) – Texas A&M
- **Unilever Ceylon Water Professional's Fellowship** (2003/2004) - Postgraduate Institute of Sri Lanka

National awards

- **Presidential awards in Scientific Research** -2008/2009 - National Research Council of Sri Lanka

PROFESSIONAL SERVICES

Editorial Board member - Annals of Forest Research

Guest Editor – Remote Sensing Special issue on Application of Earth Observation for Monitoring Biodiversity

Invited paper reviewer

Remote Sensing of Environment, Estuarine Coastal and Shelf Sciences, ISPRS Journal of Photogrammetry and Remote Sensing, International Journal of Geo-Information, Journal of Coastal Research, Journal of Sustainability, Landscape and Urban Planning, Remote Sensing, Forests, Sensors, Sustainability, Subtropical Agriculture and Environment

Invited proposal reviewer

- **NSF CAREER** (Faculty Early Career) Development Program
- **NSF GLD** (Geomorphology and Land Use Dynamics program)
- **RESTORE Act Center of Excellence for Louisiana** - research proposals to support implementation of Louisiana's Coastal Master Plan
- **NOAA NCCOS** (National Centers for Coastal Ocean Science) Ecological Effects of Sea Level Rise (EESLR) Program proposals
- **NOAA's Center for Sponsored Coastal Ocean Research** (CSCOR) program

Invited proposal review panelist

- **NSF RCN UBE** 2022
- **EPA STAR** 2016 (Science To Achieve Results) - Graduate Research Fellowships
- **NASA ROSES** 2014 (Research Opportunities in Space and Earth Sciences)

PROFESSIONAL AFFILIATIONS

- **NOAA CCME** (Center for Coastal and Marine Ecosystems) - Faculty Member (2016 – present)
- **NOAA NCCOS** (National Centers for Coastal Ocean Science) Working Group Member (2015 – present)
- **NOAA ECSC** (Environmental Corporative Science Center) – Faculty Member (2015 – 2016)
- **Graduate Faculty**, Jackson State University - **Associate Faculty Member** (2014 to Present)
- Research and Scholarly Engagement Academy, Jackson State University – Academy Scholar

MEMBERSHIPS IN PROFESSIONAL SOCIETIES

- American Geophysical Union (AGU)
- Ecological Society of America (ESA)
- Mississippi Academy of Sciences (MAS)
- International Gamma Sigma Delta (GSD) Agricultural Honor Society
- Geo-informatics Society of Sri Lanka (GISSL)
- Lanka Organic Agricultural Movement (LOAM)

PROFESSIONAL CERTIFICATIONS

- Graduate Certificate in Remote Sensing - Texas A&M University - 2013
- Graduate Certificate in GIS - Texas A&M University - 2013