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University Department and College

Wyoming Geographic Information Science Center

Degrees

2002	Ph.D., Forestry, Texas A&M University, College Station, Texas, United States Dissertation: Mapping and Monitoring Forest Cover in East Texas Using Multi-Resolution Satellite Imagery
1995	M.S., Environmental Sciences & Policy, University of Wisconsin - Green Bay, Green Bay, Wisconsin, United States Dissertation: Analysis of Ecosystem Stress Employing Graph Theory
1992	M.Phil., Environmental Sciences, Bharathiar University, Coimbatore, Tamil Nadu, India Dissertation: A Comparative Study on Land Cover Maps of Parambikulam Wildlife Sanctuary Prepared from Indian Remote Sensing (IRS)-1A Data Products
1990	M.S., Environmental Studies, Cochin University of Science & Technology, Kochi, Kerala, India Dissertation: Monitoring Ground Water Quality in Edayar, Cochin
1987	B.S., Physics, PSG College of Arts & Science, Coimbatore, Tamil Nadu, India

Work Experience

1999 - 2002

GIS Specialist, Spatial Sciences Laboratory, Texas A&M University, College Station, Texas, United States

Honors

Spring 2021 - Spring 2021

ASPRS Fellow, 2021, American Society for Photogrammetry & Remote Sensing

Workload Distribution - Summer 2022 forward

Teaching Total Percentage of Workload	Research/Creative Activities Percentage of workload	Service Percentage of workload	Advising Percentage of workload	Clinical/Professional Practice Percentage of workload	Extension Percentage of workload	Administration Percentage of workload	Other Percentage of workload	Description	Total	Semester
50.0%	32.5%	15.0%	0.0%	0.0%	0.0%	0.0%			100.0%	Summer 2022

Job Description

Teaching	Research and Creative Activity	Service - University & Professional Service	Advising or Mentoring	Administration	Extension (Should only be used by the College of Agriculture, Life Sciences, and Natural Resources)	Clinical/Diagnostic/Professional Practice	Other, including Professional Development	Other description	Outreach/Community Engagement	Total	Start Semester	End Semester
50	30	10					10	Professional Development and Outreach/Community Engagement		100	Fall 2023	Spring 2024
25	15	7.5		50			2.5	Professional development.		100	Fall 2022	Spring 2023
25	15	7.5		50			2.5	Professional development.		100	Fall 2021	Spring 2022
50	30	15					5	Attend 1-2 geospatial-oriented trainings per year		100	Fall 2020	Spring 2021
37.5	32.5	25	0	0	0	0	5			100	Summer 2019	Summer 2019

Teaching

Spring 2024

Semester	Course Prefix	Course Number	Section	Course Title
Spring 2024	BOT	4965	05	UG Research: Remote Sensing
Spring 2024	GIST	2140	01	Survey of Remote Sensing Apps
Spring 2024	GIST	4950	01	Undergraduate Research in GIST
Spring 2024	GIST	5960	02	GIST Thesis Research
Spring 2024	RNEW	4990	02	Tp:Dig Img Proc Nat Res Mngt
Spring 2024	RNEW	5990	03	TP: Dig Img Proc Nat Res Mngt

Fall 2023

Semester	Course Prefix	Course Number	Section	Course Title
Fall 2023	GIST	3140	01	Introduction to Remote Sensing
Fall 2023	GIST	4130	01	Remote Sensing Ag Mgmt
Fall 2023	GIST	4130	10	LABORATORY
Fall 2023	GIST	4130	11	Laboratory
Fall 2023	GIST	5130	01	Remote Sensing Ag Mgmt
Fall 2023	GIST	5130	10	Laboratory
Fall 2023	GIST	5130	11	Laboratory
Fall 2023	GIST	5960	02	GIST Thesis Research
Fall 2023	PLNT	4130	01	Remote Sensing Ag Mgmt
Fall 2023	PLNT	4130	10	Laboratory
Fall 2023	PLNT	4130	11	Laboratory
Fall 2023	RNEW	4130	01	Remote Sensing Ag Mgmt
Fall 2023	RNEW	4130	10	Laboratory
Fall 2023	RNEW	4130	11	Laboratory

Spring 2023

Semester	Course Prefix	Course Number	Section	Course Title
Spring 2023	BOT	4965	05	UG Research: Remote Sensing
Spring 2023	ENR	3300	01	Env Policy, Cons, & Dev India
Spring 2023	ENR	5890	01	India's Environmental Problems
Spring 2023	GIST	2140	80	Survey of Remote Sensing Apps
Spring 2023	GIST	4950	01	Undergraduate Research in GIST
Spring 2023	GIST	5790	01	Special Topics in GIST
Spring 2023	GIST	5790	04	ST: Remote Sensing
Spring 2023	RNEW	4990	02	Tp:Dig Img Proc Nat Res Mngt
Spring 2023	RNEW	5990	03	TP: Dig Img Proc Nat Res Mngt

Fall 2022

Semester	Course Prefix	Course Number	Section	Course Title
Fall 2022	GIST	4130	01	Remote Sensing Ag Mgmt
Fall 2022	GIST	4130	10	LABORATORY
Fall 2022	GIST	4130	11	Laboratory
Fall 2022	GIST	4130	12	Laboratory
Fall 2022	GIST	5111	40	Introduction to Remote Sensing
Fall 2022	GIST	5130	01	Remote Sensing Ag Mgmt
Fall 2022	GIST	5130	10	Laboratory
Fall 2022	GIST	5130	11	Laboratory
Fall 2022	GIST	5130	12	Laboratory
Fall 2022	GIST	5130	13	Laboratory
Fall 2022	GIST	5130	80	Remote Sensing Ag Mgmt
Fall 2022	PLNT	4130	01	Remote Sensing Ag Mgmt
Fall 2022	PLNT	4130	10	Laboratory
Fall 2022	PLNT	4130	11	Laboratory
Fall 2022	PLNT	4130	12	Laboratory
Fall 2022	RNEW	4130	01	Remote Sensing Ag Mgmt
Fall 2022	RNEW	4130	10	Laboratory
Fall 2022	RNEW	4130	11	Laboratory
Fall 2022	RNEW	4130	12	Laboratory

Summer 2022

Semester	Course Prefix	Course Number	Section	Course Title
Summer 2022	GIST	5790	01	Special Topics in GIST

Spring 2022

Semester	Course Prefix	Course Number	Section	Course Title
Spring 2022	BOT	4965	05	UG Research: Remote Sensing
Spring 2022	BOT	5150	01	Res:Remote Sens
Spring 2022	ENR	3300	81	Env Policy, Cons, & Dev India
Spring 2022	ENR	5890	81	India's Environmental Problems
Spring 2022	GIST	2140	40	Survey of Remote Sensing Apps
Spring 2022	GIST	4950	01	Undergraduate Research in GIST
Spring 2022	GIST	5790	02	Special Topics in GIST
Spring 2022	RNEW	4990	02	Tp:Dig Img Proc Nat Res Mngt
Spring 2022	RNEW	5990	03	TP: Dig Img Proc Nat Res Mngt

Fall 2021

Semester	Course Prefix	Course Number	Section	Course Title
Fall 2021	AECL	4130	01	Remote Sensing Ag Mgmt
Fall 2021	AECL	4130	10	Laboratory
Fall 2021	AECL	4130	11	Laboratory

Semester	Course Prefix	Course Number	Section	Course Title
Fall 2021	AECL	4130	12	Laboratory
Fall 2021	BOT	4965	02	Undergrad Rsh: Remote Sensing
Fall 2021	BOT	5150	01	Rsrch:Remote Sens
Fall 2021	GIST	4130	01	Remote Sensing Ag Mgmt
Fall 2021	GIST	4130	10	Laboratory
Fall 2021	GIST	4130	11	Laboratory
Fall 2021	GIST	4130	12	Laboratory
Fall 2021	GIST	5130	01	Remote Sensing Ag Mgmt
Fall 2021	GIST	5130	10	Laboratory
Fall 2021	GIST	5130	11	Laboratory
Fall 2021	GIST	5130	12	Laboratory
Fall 2021	GIST	5130	13	Laboratory
Fall 2021	GIST	5790	41	Special Topics in GIST
Fall 2021	GIST	5790	42	Special Topics in GIST
Fall 2021	RNEW	4130	01	Remote Sensing Ag Mgmt
Fall 2021	RNEW	4130	10	Laboratory
Fall 2021	RNEW	4130	11	Laboratory
Fall 2021	RNEW	4130	12	Laboratory

Spring 2021

Semester	Course Prefix	Course Number	Section	Course Title
Spring 2021	BOT	4965	05	UG Research: Remote Sensing
Spring 2021	BOT	5150	01	Res:Remote Sens
Spring 2021	ENR	3300	01	Env Policy, Cons, & Dev India
Spring 2021	ENR	5890	04	India's Environmental Problems
Spring 2021	GIST	2160	01	Survey of Remote Sensing Apps
Spring 2021	GIST	4410	40	UAS Sensors and Platforms
Spring 2021	GIST	4950	01	Undergraduate Research in GIST
Spring 2021	GIST	5410	40	UAS Sensors and Platforms
Spring 2021	REWM	5960	14	Thesis Research
Spring 2021	RNEW	4800	04	UG Res: Remote Sensing
Spring 2021	RNEW	4990	02	Tp:Dig Img Proc Nat Res Mngt
Spring 2021	RNEW	5990	03	TP: Dig Img Proc Nat Res Mngt

Fall 2020

Semester	Course Prefix	Course Number	Section	Course Title
Fall 2020	AECL	4130	01	Remote Sensing Ag Mgmt
Fall 2020	AECL	4130	10	Laboratory
Fall 2020	AECL	4130	11	Laboratory
Fall 2020	AECL	4130	12	Laboratory
Fall 2020	BOT	4965	02	Undergrad Rsh: Remote Sensing
Fall 2020	BOT	5150	01	Rsrch:Remote Sens
Fall 2020	GIST	4130	01	Remote Sensing Ag Mgmt
Fall 2020	GIST	4130	10	Laboratory
Fall 2020	GIST	4130	11	Laboratory
Fall 2020	GIST	4130	12	Laboratory
Fall 2020	GIST	4410	40	UAS Sensors and Platforms
Fall 2020	GIST	5130	01	Remote Sensing Ag Mgmt
Fall 2020	GIST	5130	10	Laboratory
Fall 2020	GIST	5130	11	Laboratory
Fall 2020	GIST	5130	12	Laboratory
Fall 2020	GIST	5410	40	UAS Sensors and Platforms
Fall 2020	REWM	5960	14	Thesis Research
Fall 2020	RNEW	4130	01	Remote Sensing Ag Mgmt
Fall 2020	RNEW	4130	10	Laboratory
Fall 2020	RNEW	4130	11	Laboratory
Fall 2020	RNEW	4130	12	Laboratory

Summer 2020

Semester	Course Prefix	Course Number	Section	Course Title
Summer 2020	BOT	4965	01	Undergraduate Research Botany
Summer 2020	BOT	5150	01	Rsrch:Remote Sens
Summer 2020	REWM	5960	17	Thesis Research

Spring 2020

Semester	Course Prefix	Course Number	Section	Course Title
Spring 2020	BOT	4965	05	UG Research: Remote Sensing
Spring 2020	BOT	5150	01	Res:Remote Sens
Spring 2020	ENR	3300	01	Env Policy, Cons, & Dev India
Spring 2020	GIST	2160	01	Survey of Remote Sensing Apps

Semester	Course Prefix	Course Number	Section	Course Title
Spring 2020	GIST	4410	40	UAS Sensors and Platforms
Spring 2020	GIST	4950	01	Undergraduate Research in GIST
Spring 2020	GIST	5410	40	UAS Sensors and Platforms
Spring 2020	REWM	5960	14	Thesis Research
Spring 2020	RNEW	4800	04	UG Res: Remote Sensing
Spring 2020	RNEW	4990	02	Tp:Dig Img Proc Nat Res Mngt
Spring 2020	RNEW	5990	03	TP: Dig Img Proc Nat Res Mngt

Fall 2019

Semester	Course Prefix	Course Number	Section	Course Title
Fall 2019	AECL	4130	01	Remote Sensing Ag Mgmt
Fall 2019	AECL	4130	10	Laboratory
Fall 2019	AECL	4130	11	Laboratory
Fall 2019	AECL	4130	12	Laboratory
Fall 2019	BOT	4130	01	Rem Sens Ag Mgmt
Fall 2019	BOT	4130	10	Laboratory
Fall 2019	BOT	4130	11	Laboratory
Fall 2019	BOT	4130	12	Laboratory
Fall 2019	BOT	4965	02	Undergrad Rsh: Remote Sensing
Fall 2019	BOT	5130	01	Rem Sens Ag Mgmt
Fall 2019	BOT	5130	10	Laboratory
Fall 2019	BOT	5130	11	Laboratory
Fall 2019	BOT	5130	12	Laboratory
Fall 2019	BOT	5150	01	Rsrch:Remote Sens
Fall 2019	GIST	5410	01	UAS Sensors and Platforms
Fall 2019	REWM	5960	14	Thesis Research
Fall 2019	RNEW	4130	01	Remote Sensing Ag Mgmt
Fall 2019	RNEW	4130	10	Laboratory
Fall 2019	RNEW	4130	11	Laboratory
Fall 2019	RNEW	4130	12	Laboratory
Fall 2019	RNEW	5130	01	Remote Sensing Ag Mgmt
Fall 2019	RNEW	5130	10	Laboratory
Fall 2019	RNEW	5130	11	Laboratory
Fall 2019	RNEW	5130	12	Laboratory

Summer 2019

Semester	Course Prefix	Course Number	Section	Course Title
Summer 2019	BOT	5150	01	Rsrch:Remote Sens
Summer 2019	ENR	4890	81	ENR: Intro HEC Conflict India
Summer 2019	REWM	5940	03	Cont Reg: Off Campus

Spring 2019

Semester	Course Prefix	Course Number	Section	Course Title
Spring 2019	BOT	4965	05	UG Research: Remote Sensing
Spring 2019	BOT	5150	01	Res:Remote Sens
Spring 2019	ENR	3300	01	Env Policy, Cons, & Dev India
Spring 2019	ENR	5890	03	India's Environmental Problems
Spring 2019	REWM	5960	14	Thesis Research
Spring 2019	RNEW	4800	04	UG Res: Remote Sensing
Spring 2019	RNEW	4990	02	Tp:Dig Img Proc Nat Res Mngt
Spring 2019	RNEW	5990	03	TP: Dig Img Proc Nat Res Mngt

Professional Service

Fall 2020 - Ongoing

Strategic Partnership Working Group, AmericaView

Spring 2019 - Ongoing

Regional Director - Wyoming, ASPRS - Rocky Mountain Chapter

Fall 2019 - Fall 2019

Retrieving Images from Landsat Data Collections [Workshop], ASPRS - Rocky Mountain Chapter, Landsat satellites (http://landsat.usgs.gov) provide invaluable Earth Observation data for monitoring and mapping applications. These data are available to users from the US Geological Survey (USGS) at no-cost since 2008. Starting in 2016, USGS started organizing Landsat data in a tiered collection structure based on data quality and level of processing. Users interested in time-series analyses will be able to evaluate and select Landsat images base on this tiered structure. This lecture and demonstration-style workshop will introduce remote sensing concepts and Landsat data characteristics. Participants will also learn on how to search and download these data and products from USGS archives. Upon successful completion participants will receive a completion certificate.
Sep 16, 2019: Englewood, CO

Integrating Landsat Analysis Ready Data in GIS workflow [Workshop], ASPRS - Rocky Mountain Chapter, Landsat satellites (http://landsat.usgs.gov) provide invaluable Earth Observation data for monitoring and mapping applications. In 2017, USGS released Landsat Analysis Ready Data (ARD) consisting of a suite of processed and derived data layers dating back to 1972. ARD data are processed to the highest level of science standards required for monitoring and assessing landscape change. ARD data will reduce the individual user need to download and pre-process large amounts of Landsat data for time-series analysis. This lecture and demonstration-style workshop will introduce Landsat data characteristics and products such as vegetation indices, burn severity products etc. Participants will also learn on how to search and download these data and products from USGS archives. Upon successful completion participants will receive a completion certificate.
Sept 16, 2019; Englewood, CO

Pecora 21/ISRSE 38 Earth Observation and Continuous Monitoring of Our Changing Planet: From Sensors to Decisions, Earth Observation and Continuous Monitoring of Our Changing Plant: From Sensors to Decisions, Section 3-6: How no-cost Landsat data is reshaping college level remote sensing courses (9 presenters)

Summer 2015 - Ongoing

Frontiers of Earth Science, Higher Education Press and Springer-Verlag Berlin Heidelberg, Associate Editor -

Fall 2009 - Ongoing

Journal of Applied Remote Sensing, Society of Photographic Instrumentation Engineers, Associate Editor -

Institutional Committees

University

Fall 2019 - Spring 2023

AMK Task Force, (University of Wyoming)

Spring 2019 - Ongoing

International Research and Engagement Committee, (University of Wyoming)

Department

Fall 2020 - Fall 2020

Faculty search committee - Remote Sensing, (Wyoming Geographic Information Science Center)

Fall 2019 - Spring 2020

Faculty Search Committee - Remote Sensing, (Wyoming Geographic Information Science Center)

Other Institutional Service

Fall 2019 - Spring 2020

WY UAV Symposium - Technical Program, (Wyoming Geographic Information Science Center)

Advising Load

Undergraduate	Masters	Doctoral	Other	Total	Semester
0	3	0	0	3	Spring 2024
0	3	0	0	3	Fall 2023
0	3	0	0	3	Spring 2023
0	2	0	0	2	Fall 2022
0	1	0	0	1	Spring 2022
5	1	0	0	6	Spring 2021
6	1	0	0	7	Spring 2020
13	1	0	0	14	Fall 2019
14	2	0	0	16	Spring 2019

Student Mentoring

Mentoring Level	Mentoring Type	Faculty Role	Student Name	Expected Graduation Date	Student Major	Project Title	Start Semester	End Semester
Masters	Graduate Committee	Committee Chair	Matthew B. Johnson		Masters in GIST		Fall 2023	Ongoing
Undergraduate	Undergraduate Research	Undergraduate Research Project Oversight	Chester Townsend		Environmental System Science	Quantifying analyst bias in flood inundation maps	Spring 2023	Spring 2023
Undergraduate	Undergraduate Research	Undergraduate Research Project Oversight	Alison Faith		Environmental System Science	Quantifying analyst bias in flood inundation maps	Spring 2023	Fall 2023
Undergraduate	Undergraduate Research	Undergraduate Research Project Oversight	Annastasia Erdmann		International Studies	Quantifying analyst bias in flood inundation maps	Spring 2023	Spring 2023
Undergraduate	Undergraduate Research	Undergraduate Research Project Oversight	Devon Borthwick	May 2024	Geography	Quantifying analyst bias in flood inundation maps	Spring 2023	Ongoing
Undergraduate	Undergraduate Research	Undergraduate Research Project Oversight	Lander Stone		Environmental Systems Science	Quantifying analyst bias in flood inundation maps	Fall 2022	Spring 2023
Undergraduate	Undergraduate Research	Undergraduate Research Project Oversight	Jangala Gouthami		Computer & Electronics Engineering [Amrita University, India]	Effect of data quality on water body segmentation with DeeplabV3+ algorithm	Fall 2022	Spring 2023
Undergraduate	Undergraduate Research	Undergraduate Research Project Oversight	Pillalamarri Akshaya		Computer & Electronics Engineering [Amrita University, India]	Effect of data quality on water body segmentation with DeeplabV3+ algorithm	Fall 2022	Spring 2023
Undergraduate	Undergraduate Research	Undergraduate Research Project Oversight	Anirudh Edpuganti		Computer & Electronics Engineering [Amrita University, India]	Effect of data quality on water body segmentation with DeeplabV3+ algorithm	Fall 2022	Spring 2023
Undergraduate	Undergraduate Research	Undergraduate Research Project Oversight	Pingali Sathvika		Computer & Electronics Engineering [Amrita University, India]	Effect of hyperparameters on DeeplabV3+ performance to segment water bodies in RGB images	Fall 2022	Spring 2023
Undergraduate	Undergraduate Research	Undergraduate Research Project Oversight	Onteddu C. Reddy		Computer & Electronics Engineering [Amrita University, India]	Effect of hyperparameters on DeeplabV3+ performance to segment water bodies in RGB images	Fall 2022	Summer 2023
Undergraduate	Undergraduate Research	Undergraduate Research Project Oversight	Illa D. Kumar		Computer & Electronics Engineering [Amrita University, India]	Effect of hyperparameters on DeeplabV3+ performance to segment water bodies in RGB images	Fall 2022	Spring 2023
Masters	Graduate Committee	Committee Chair	Emma Dixon		Masters in GIST		Fall 2022	Ongoing
Masters	Graduate Committee	Committee Chair	Benjamin Baumgartner		Masters in GIST		Fall 2022	Ongoing
PhD	Graduate Research	Grad Research Project Oversight	Adeyemi Fagbade		Mathematics	Mapping 2022 flood stages in Nigeria	Fall 2022	Spring 2023

Undergraduate	Undergraduate Research	Undergraduate Research Project Oversight	Benjamin Pina		Environmental System Science	Mapping 2022 flood stages in Nigeria	Fall 2022	Spring 2023
Masters	Graduate Committee	External Committee Member (Non-UW)	S. Adarsh	August 2023	Computer & Electronics Engineering [Amrita University, India]	Performance Analysis of DeeplabV3+ Using State-of-the-Art Encoder Architectures for Waterbody Segmentation in Remote Sensing Images.	Summer 2022	Summer 2023
Masters	Graduate Committee	External Committee Member (Non-UW)	Bichu George	August 2023	Computer & Electronics Engineering [Amrita University, India]	Performance Improvement of Water Body Segmentation by DeeplabV3+ Using Two Dimensional Variational Mode Decomposition	Summer 2022	Summer 2023
Masters	Graduate Committee	Committee Chair	Gosula Sunandini	August 2023	Computer & Electronics Engineering [Amrita University, India]	Significance of Atrous Spatial Pyramid Pooling in DeeplabV3+ for Water Body Segmentation	Summer 2022	Summer 2023
Masters	Graduate Committee	Committee Chair	Maria Oreshkina		Masters in GIST		Spring 2022	Ongoing
Masters	Graduate Committee	Committee Co-Chair	Aswin S	August 2021	Computer & Electronics Engineering [Amrita University, India]	Identifying epiphytes in drone images with C-GAN	Summer 2020	Summer 2021
Masters	Graduate Committee	Committee Co-Chair	Aswin Sunil	August 2021	Computer & Electronics Engineering [Amrita University, India]	Identifying oil pads in NAIP images with neural networks	Summer 2020	Summer 2021
Masters	Graduate Committee	Committee Chair	Pranavan Bhupathy	August 2021	Computer & Electronics Engineering [Amrita University, India]	Effect of merging frames on crop pixel values	Summer 2020	Summer 2021
Undergraduate	Undergraduate Research	Undergraduate Research Project Oversight	Logan Heyward	May 2020	Geography	Relating NDVI values to crop harvest data	Spring 2020	Summer 2020
Undergraduate	Undergraduate Research	Undergraduate Research Project Oversight	Sarah Weidler	December 2020	Geography	Tracking phenological changes in aspen trees	Spring 2020	Summer 2020
Masters	Graduate Committee	Committee Chair	Abigail L. Gettinger	August 2021	Rangeland Ecology & Watershed Management	Evaluation of Landsat Data Pre-processing Effects on Spectral Indices and Water Surface Area Estimation	Fall 2019	Spring 2021
Masters	Graduate Committee	Committee Co-Chair	M. Harchandana	August 2020	Computer & Electronics Engineering [Amrita University, India]	Comparison of enhancement techniques for rapid processing of post flood satellite images	Summer 2019	Summer 2020
Masters	Graduate Committee	Committee Co-Chair	A. Shashank	August 2020	Computer & Electronics Engineering [Amrita University, India]	Identifying epiphytes in drone images with conditional generative adversarial network (C-GAN)	Summer 2019	Summer 2020
Undergraduate	Undergraduate Research	Undergraduate Research Project Oversight	Emma Dixon		Environmental Systems Science	Human Elephant Conflict in Coimbatore, India (WRS)	Spring 2019	Spring 2021
Undergraduate	Undergraduate Research	Undergraduate Research Project Oversight	Logan Eicholzer		Environmental Systems Science	Quantifying Analyst Bias in Image Classification	Spring 2019	Spring 2019
Undergraduate	Undergraduate Research	Undergraduate Research Project Oversight	Jacob Disney		Rangeland Ecology & Watershed Management	Rangeland Vegetation Monitoring with Satellite Images	Spring 2019	Spring 2019
Undergraduate	Undergraduate Research	Undergraduate Research Project Oversight	Kevin Jacobs	December 2019	Rangeland Ecology & Watershed Management	Rapid Flood Mapping	Spring 2019	Spring 2019
Undergraduate	Undergraduate Research	Undergraduate Research Project Oversight	Matthew Kelton		Rangeland Ecology & Watershed Management	Quantifying Analyst Bias in Image Classification	Spring 2019	Spring 2019
Undergraduate	Undergraduate Research	Undergraduate Research Project Oversight	Ela Piskorsi		Rangeland Ecology & Watershed Management	Rapid Flood Mapping	Spring 2019	Spring 2019
Undergraduate	Undergraduate Research	Undergraduate Research Project Oversight	Tyler Zones	May 2020	Rangeland Ecology & Watershed Management	Rangeland Vegetation Monitoring with Satellite Images	Spring 2019	Spring 2019
Masters	Graduate Committee	Committee Co-Chair	Alexander Jordan Sivitskis	August 2019	Natural Science Education	Developing and Piloting an Assessment Instrument to Measure Change in Student Geospatial Thinking and Earth Systems Understanding	Fall 2018	Summer 2019
Masters	Graduate Committee	Committee Chair	Anne Nicole Reed	August 2019	Rangeland Ecology & Watershed Management	Analyses of Mitigation Strategies of Human-Elephant Conflicts in the Coimbatore Forest Division, India	Fall 2017	Summer 2019

Scholarly Contributions and Creative Productions

Book

Completed/Published

Sivanpillai, R. (Ed.). (2023). *Biological and Environmental Hazards, Risks, and Disasters* Elsevier.

Chapter

Completed/Published

Jones, E., Wooden, C. E., V.v., S. V., & Sivanpillai, R. (2023). Chapter 10 - Threats to the sacred groves of Kerala. In *Hazards and Disasters Series* (pp. 191–196). Elsevier.

Sivanpillai, R. (2023). Chapter 1 - Introduction. In *Hazards and Disasters Series* (pp. 1–5). Elsevier.

Sivanpillai, R., Brown, G. K., & Gellis, B. S. (2019). Flying UAVs Within Complex Forest Canopies. In *Applications of Small Unmanned Aircraft Systems: Best Practices and Case Studies* (p. 308). Boca Raton, Florida: CRC Press.

Journal Article

Completed/Published

Variyar, V., Sowmya, V., Sivanpillai, R., & Brown, G. K. (2023). Learning and Adaptation From Minimum Samples With Heterogeneous Quality: An Investigation of Image Segmentation Networks on Natural Dataset. *IEEE Access*, *11*, 47040–47052.

Edpuganti, A., Akshaya, P., Gouthami, J., Sajith, V., Sowmya, V., & Sivanpillai, R. (2023). EFFECT OF DATA QUALITY ON WATER BODY SEGMENTATION WITH DEEPLABV3+ ALGORITHM. *The International Archives of the Photogrammetry, Remote Sensing and Spatial Information Sciences* *XLVIII-M-3-2023*, 81–85.

Reddy, O. C., Kumar, I. D., Sathvika, P., Sajith, V., Sowmya, V., & Sivanpillai, R. (2023). EFFECT OF HYPERPARAMETERS ON DEEPLABV3+ PERFORMANCE TO SEGMENT WATER BODIES IN RGB IMAGES. *The International Archives of the Photogrammetry, Remote Sensing and Spatial Information Sciences* *XLVIII-M-3-2023*, 203–209.

Sajith, V., Sowmya, V., Sivanpillai, R., & Brown, G. (2023). THE EFFECT OF CONTRAST ENHANCEMENT ON EPIPHYTE SEGMENTATION USING GENERATIVE NETWORK. *The International Archives of the Photogrammetry, Remote Sensing and Spatial Information Sciences, XLVIII-M-3-2023*, 219–226.

Sivanpillai, R., Oreshkina, M., Bear, P., Boettcher, I., Bradshaw, T., Coleman, I., & Gifford, J. (2023). MAPPING NEWLY INUNDATED AREAS IN POST-FLOOD LANDSAT IMAGES USING THRESHOLDING TECHNIQUES. *The International Archives of the Photogrammetry, Remote Sensing and Spatial Information Sciences, XLVIII-M-3-2023*, 235–239.

Menon, A. K., Sajith, V., Sivanpillai, R., Sowmya, V., Brown, G. K., & Soman, K. P. (2022). INFLUENCE OF ADDITIONAL SPECTRAL BANDS FOR EPIPHYTE SEGMENTATION ON DRU-NET. *The International Archives of the Photogrammetry, Remote Sensing and Spatial Information Sciences, XLVI-M-2-2022*, 159–163.

Sivanpillai, R., Jacobs, K. M., Mattilio, C. M., & Piskorski, E., V. (2021). Rapid flood inundation mapping by differencing water indices from pre- and post-flood Landsat images. *FRONTIERS OF EARTH SCIENCE, 15*, 1–11.

Sivanpillai, R., & Whitman, R. D. (2019). Relating leaf spectral reflectance to its color: an inquiry-based activity to enhance understanding of electromagnetic radiation. *SCIENCE ACTIVITIES, 56*, 19–26.

Dhivyaprabha, T. T., Subashini, P., Krishnaveni, M., Santhi, N., Sivanpillai, R., & Jayashree, G. (2019). A novel synergistic fibroblast optimization based Kalman estimation model for forecasting time-series data. *EVOLVING SYSTEMS, 10*, 205–220.

Conference Proceedings

Completed/Published

Adarsh, S., Sowmya, V., Sivanpillai, R., & Sajith, V. (2023). Performance Analysis of DeeplabV3+ Using State-of-the-Art Encoder Architectures for Waterbody Segmentation in Remote Sensing Images. In *Inventive Communication and Computational Technologies*. Springer Nature Singapore.

George, B., Sajith, V. V. ., Sowmya., V., & Sivanpillai, R. (2023). Performance Improvement of Water Body Segmentation by DeeplabV3+Using Two Dimensional Variational Mode Decomposition. In *2023 10th International Conference on Signal Processing and Integrated Networks (SPIN)*.

Sunandini, G., Sivanpillai, R., Sowmya, V., & Sajith, V. (2023). Significance of Atrous Spatial Pyramid Pooling (ASPP) in Deeplabv3+ for Water Body Segmentation. In *2023 10th International Conference on Signal Processing and Integrated Networks (SPIN)*.

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Popular Press and Media

Fall 2023

UW professor tapped to help Hurricane Fiona relief efforts, Casper Star-Tribune, Newspaper, 2023-11-25, https://trib.com/news/state-regional/uw-professor-tapped-to-help-hurricane-fiona-relief-efforts/article_8c79eca6-50b3-11ed-ba95-1b7808e387c2.html

Fall 2022

Satellite imagery: UW scientist shares benefits of remote sensing applications, Wyoming Livestock Roundup, Newspaper, 2022-11-18, Casper, WY

Summer 2019

UW professor has shared satellite images with Laramie schools for last decade, Gillette News Record, Newsmedia Website, 2019-06-15, Gillette

Grants

Completed

AmericaView Stateview Program development/operations for the state of Wyoming, Funded by AmericaView/USGS (August 1, 2022 - September 17, 2023), awarded August 1, 2022 (**$23,500.00**), Completed, Fall 2023, PI Ramesh Sivanpillai

AmericaView Stateview Program development/operations for the state of Wyoming, Funded by AmericaView/USGS (September 18, 2021 - September 17, 2022), awarded September 18, 2021 (**$23,500.00**), Completed, Fall 2022, PI Ramesh Sivanpillai

AmericaView Stateview Program development/operations for the state of Wyoming, Funded by AmericaView/USGS (September 18, 2020 - September 17, 2021), awarded September 28, 2020 (**$23,500.00**), Completed, Fall 2021, PI Ramesh Sivanpillai

Rapid flood mapping of inundated areas with multi-sensor satellite images, Funded by WY NASA Space Grant (June 1, 2021 - May 31, 2022), awarded April 15, 2021, Completed, Summer 2021, PI Ramesh Sivanpillai

Integrating STELLA spectrometers for enhancing student learning, Funded by WY NASA Space Grant (June 1, 2021 - May 31, 2022), awarded April 15, 2021, Completed, Summer 2021, PI Ramesh Sivanpillai

AmericaView Stateview Program development/operations for the state of Wyoming,, Funded by AmericaView/USGS (September 18, 2019 - September 17, 2020) (**$23,500.00**), Completed, Fall 2019, PI Ramesh Sivanpillai

Funded - In Progress

StateView Program Development and Operations for the State of Wyoming - 2023, Funded by AmericaView/USGS (October 1, 2023 - September 24, 2024), awarded October 1, 2023, Funded - In Progress, Spring 2024, PI Ramesh Sivanpillai

Membership

Summer 2021 - Ongoing

International Society of Biometeorology, July 2021, Ongoing

Fall 2014 - Ongoing

American Geophysical Union, December 2014, Ongoing

Fall 2002 - Ongoing

Society of American Foresters, October 2002, Ongoing

Spring 1997 - Ongoing

American Society for Photogrammetry and Remote Sensing , April 1997, Ongoing

Professional Development

Spring 2024 - Spring 2024

JACIE 2024 - Uncertainty Workshop, 4, Online, This workshop introduced the current research/updates in error propagation in Landsat and other remotely sensed datasets.

Summer 2021 - Summer 2021

Using Google Earth Engine for Land Monitoring Applications, 5, Online, Google Earth Engine (GEE) provides unparalleled access to large-scale data analysis through cloud computing technology. This training will cover the GEE Code Editor, hands-on exercises on change detection, time series analysis, land cover classification, and accuracy assessment of optical imagery.

Spring 2021 - Spring 2021

2021 NOAA Geospatial Summit , Online, District of Columbia, National Geodetic Survey will be replacing the North American Datum of 1983 (NAD 83) and the North American Vertical Datum of 1988 (NAVD 88). These presentations gave invaluable information about the upcoming changes.

Spring 2021 - Summer 2021

Satellite Observations and Tools for Fire Risk, Detection, and Analysis, 10, Online, Fires produce a significant change in the structure and reflectance of vegetation and soil properties and atmospheric chemistry. Remote sensing can be used to monitor pre-, during-, and post-fire conditions; including weather and climate conditions, fuel characterization, fire risk, smoke detection, monitoring, and forecasting, fire behavior, and the post-fire landscape. This 6-part, intermediate training provided lectures and case studies focused on the use of Earth observations for operational fire monitoring: pre-, during-, and post-event.

Summer 2020 - Summer 2020

[Workshop] Understanding Phenology with Remote Sensing, Online, Workshop organized by NASA for integrating its data and new products for phenology research and teaching. The workshop was conducted in 3 sessions

[Workshop] Digital Teaching & Learning, Online, Week-long workshop to introduce new techniques and activities for teaching online courses.

Spring 2019 - Spring 2019

[Workshop] Aerial Triangulation and Data Processing for the Unmanned Aerial Systems (UAS), Denver, Colorado

[Workshop] Where theory meets reality - Achieving accuracy and efficiency in Drone Photogrammetry, 2, Denver, Colorado

Non-Credit Instruction / Statewide Outreach Activities

Spring 2024

Effect of Changes in Sun-Earth Distance, 6-12, Albany, Laramie, WY, AmericaView, 147,

Students learned how distance between Sun and Earth changes over a year and how it affects life in our plant

2024-02-27, 12, Mr. Jared Krysl, and Mr. Josh Peterson (8th grade teachers)

Spring 2023

Tracking autumn leaf color changes in deciduous trees, 6-12, Albany, Laramie, AmericaView, 196,

Describe how satellite images are used for tracking phenology

2023-02-23, 20

Disaster monitoring from space, 6-12, Albany, Laramie, AmericaView, 165,

Talked to 6 sections of 7th graders on how satellite images are used for monitoring and mapping disasters

2023-04-23, 15

Aral Sea Disaster, P-6, Albany, Laramie, AmericaView, 20,

Talk to describe how human actions changed Aral Sea.

2023-04-27, 5

Yellowstone National Park - Floor Puzzle with Satellite Images, P-12, Carbon, Saratoga, AmericaView, 192,

Students were introduced to Earth observation data using Yellowstone NP floor puzzle.

2023-05-10, 12, Wyoming NASA SG Consortium

Spring 2021

Aral Sea Disaster, 6-12, Albany, Laramie, WyomingView, 215,

Sixth graders are learning about Earth's four spheres and how they connected and impact each other. This presentation on Aral Sea highlighted how human activities alter those connections and impact various spheres.

2021-04-02, 7

Introduction to Remote Sensing & Applications, 6-12, Sheridan, Sheridan, WyomingView, 30,

High school students enrolled in CADD classes were introduced to remote sensing science and applications

2021-05-10, 6

Earth Observation, 6-12, Albany, Laramie, AmericaView, 199,

Electromagnetic radiation and its interaction are part of the 8th grade physical science curriculum. This presentation and hands-on workshop helps students to better understand these concepts and with the help of satellite images, they can visualize how changes in light interaction can be associated with the condition of various features.

Laramie Middle School: May 17, (8 virtual sections).

Introductory materials were presented to the students in the form of 5 short videos prior to the live Zoom meeting on May 17.

Due to the restrictions associated with the pandemic, teachers conducted the hands-on activity in their respective classrooms.

2021-05-17, 20

The story of Aral Sea, P-6, Albany, Laramie, WyomingView, 57,

Second graders are learning about water in its various forms. In this two-part presentation (2, 50 minute presentations), student saw how human actions have reduced Aral Sea, once the 9th largest inland waterbody, to the newest desert.

2021-05-28, 8

Fall 2020

Algal blooms, P-6, Albany, Laramie, AmericaView, 15,

Water quality is taught to fifth graders in Spring Creek ES. This presentation highlighted how nutrient rich waters entering the lakes and ponds can lead to algal blooms. Students learned how small and large waterbodies are impacted by this problem.

2020-09-25, 10

Spring 2020

Earth Observation, 6-12, Albany, Laramie, WY, WyomingView, 245,

Electromagnetic radiation and its interaction are part of the 8th grade physical science curriculum. This presentation and hands-on workshop helps students to better understand these concepts and with the help of satellite images, they can visualize how changes in light interaction can be associated with the condition of various features.

Laramie MS: Jan 7, 8, 10 (batch 1 - 6 sections); 14, 15, 17 (batch 1 - 6 sections).

2020-01-07, 28

Aral Sea Disaster, 6-12, Albany, Laramie, AmericaView, 254,

Sixth graders are learning about Earth's four spheres and how they connected and impact each other. This presentation on Aral Sea highlighted how human activities alter those connections and impact various spheres.

2020-02-10, 15

Spring 2019

Earth Observation, 6-12, Albany, Laramie, WY, WyomingView, 226,

Electromagnetic radiation and its interaction are part of the 8th grade physical science curriculum. This presentation and hands-on workshop helps students to better understand these concepts and with the help of satellite images, they can visualize how changes in light interaction can be associated with the condition of various features.

Laramie MS: Jan 8, 9, 11 (batch 1 - 6 sections); 15, 16, 18 (batch 1 - 6 sections).

2019-01-08, 26

STEM Saturday, 6-12, Albany, Laramie, Science Kitchen, 25,

Twenty five, 6th – 8th grade students from Wyoming learned how the colors of objects can be attributed to the amount of light reflected in different regions of the electromagnetic spectrum. As part of the hands-on activity organized by Science Kitchen on January 26th, they measured the amount of light reflected by blue and green color materials using an ALTA II Spectrometer. Spring 2019 Spring 2019

2019-01-26, 6

From Silk to Cotton Trade –the story of White Gold in Uzbekistan and the impact on Aral Sea, P-6, Albany, Laramie, WyomingView, 225,

6th grade students are learning about the Silk Road (past and present). This presentation described how economic activities have changed over time and their environmental impacts.

Laramie MS: (7 sections/presentations - 2 teachers)

2019-01-30, 11

Aral Sea Disaster, P-6, Albany, Laramie, WyomingView, 28,

This presentation focused on assessing the value of satellite images for understanding Earth Science concepts.

UW Lab School (5th graders)

2019-03-07, 4

Searching Lost Mayan Cities with Remote Sensing Technology, P-6, Albany, Laramie, WyomingView, 19,

This presentation highlighted the use of LiDAR remote sensing data to map lost Mayan cities in Mexico and Central America. Students learned how past civilizations had built advanced transportation and water distribution infrastructure.

UW Lab School (1 section)

2019-04-30, 12

Water, P-6, Albany, Laramie, WyomingView, 38,

Second graders are learning about water in its various forms. With the help of satellite images, this presentation illustrated the solid (glaciers) and liquid (lakes and reservoirs) forms of water.

2nd graders - 1 section (3 teachers)

2019-05-14, 38

Earth Observation, 6-12, Albany, Laramie, Women in STEM, 10,

STEM activities for women

2019-05-21, 5

Acquiring and distributing satellite data for natural disasters: Role of the International Charter on Disasters, University of Wyoming, Albany, Laramie, University of Wyoming, 30,

Students in Applied Remote Sensing class (BOT 3150) were introduced to how satellite images are used to identified flooded and burnt areas.

2019-04-18, 4