DI YANG

Wyoming Geographic Information Science Center
University of Wyoming
Department 4008, 1000E, University Avenue
Wyoming, WY 82070 USA
Phone: (361) 228–2913
Email: dyang1@uwyo.edu
Lab: http://www.uwyo.edu/geoinfo/index.html

AREAS OF SPECIALIZATION AND INTERESTS

Remote sensing applications on human-environment interactions, Geovisualization, Geospatial analytics, digital image processing, machine learning and GeoAI, citizen science, cloud-based big data analysis and management, land change science.

EDUCATION

University of Florida	Geography (Minor in Forest Resources and Conservation)	Ph.D., 2019
Texas A&M University-Kingsville	Environmental Engineering	M.S., 2013
Liaoning University of Petroleum and Chemical Technology	Environmental Science	B.S., 2011

ACADEMIC APPOINTMENTS

Science Advisor ***2023 – Present***

DEVELOP Program, NASA

Adjunct Assistant Professor ***2021 – Present***

Program in Ecology, University of Wyoming

Assistant Professor ***2020 - Present***

Wyoming Geographic Information Science Center (WyGISC), University of Wyoming

Editorial Board ***2022 - Present***

Nature – Scientific Reports, Nature

Postdoctoral Research Associate ***2019 - 2020***

Spatial Analysis Lab, Montana Natural Heritage Program, University of Montana. (NSF #1703062)

Instructor/Teaching Assistant ***2016 - 2019***

GEO 2422 - Extreme Weather, GEA 3600 - Geography of Africa, GEO 2200 - Physical Geography, Department of Geography, University of Florida.

Dean's Research Assistant *2015 - 2016*

Department of Geography, University of Florida.

Research Assistant *2013 - 2015*

NSF Macrosystems: Building Forest Management into Earth system modeling: Scaling from stand to continent. EF #1241860. Department of Geography, University of Florida.

Teaching Assistant *2012 - 2013*

Co-Instructor of Course Even 6329 - Environmental Monitoring and Measurements, Department of Environmental Engineering, Texas A&M University - Kingsville.

Research Assistant *2011 - 2012*

Department of Environmental Engineering, Texas A&M University - Kingsville.

RESEARCH GRANTS AND CONTRACTS

Co. P.I.	"Quantifying Effects of Land Cover Change-Climate Interaction on Ecosystem Productivity Over Western North America", NASA Experimental Program to Stimulate Competitive Research, He Y, **Yang D**. 10/01/2023 – 09/30/2024, **($93,548).**
Lead P.I.	"Harnessing HPC for Predictive Geospatial Analytics: Modeling Biogeophysical Impacts of Potential Forestation on Regional Climate over Western US.", NCAR Large Allocation Grants, NCAR, **Yang D.** 09/01/2023-04/30/2025, (**9,000,000 ~9 million Credit Hours).**
Remote Sensing Team Leader	"NSF Engines Development Award: Advancing Precision Forestry and Rangeland Technologies", #2305683, National Science Foundation, Whittenburg S, 05/15/2023 – 04/30/2025, (**$987,278).**
Co. P.I.	"High Resolution Upload and Riverbank Erosion Monitoring to Inform Best Management Practices that Seek to Reduce Sediment Accumulation at the Willwood Dam" Water Research Program, Madson A., **Yang D**. University of Wyoming 07/01/2023-06/30/2025 **($199,999).**
Co. P.I.	"Establish Edge-Computing Sensory Data Collection Platforms at the UW-AMK Ranch Field Station", UW Research Excellence Fund Seed Grants, University of Wyoming, Gong J, Kirby A, Albeke S, **Yang D**; 11/01/2023-05/31/2025, (**$40,000**).
Lead P.I.	"Analyzing NEON hyperspectral signatures using Amazon SageMaker", Amazon AWS Public Sector Cloud Credit for Research Award, **Yang D**; 05/06/2023-05/05/2023, **($30,000 AWS Credit**)
Lead P.I.	"Incorporating Geoinformatics with CLIMATE: Community Led Initiative to Monitor Alpine Temperature Extremes", School of Computing Faculty Awards, University of Wyoming, **Yang D**, Klancher J; 04/2023-08/2023, **($15,000)**.
Lead P.I.	Faculty & Staff International Research Grant, Center for Global Studies, University of Wyoming, **Yang D,** 05/15/2022-05/15/2023, **($3,340).**
Lead P.I.	"Mapping and Assessing Standing Dead Trees Across Different Scales in Rockies Forests Incorporating In-Situ Field Observation with LiDAR and Hyperspectral Datasets", NASA Experimental Program to Stimulate

	Competitive Research Faculty Research Grants, NASA, **Yang D**, 05/31/2022-05/31/2023, **($26,501).**
Lead P.I.	"A Meta-Learning Framework for Characterizing and Accessing Machine Learning Training Data for GLOBE Observer Mosquito and Land Cover Protocol**s",** NASA, **Yang D**., McBride S., Huang X, 09/01/2021-09/01/2023, **($99,502).**
Lead P.I.	"Enhancing Student Technology to Support Undergraduate/Graduate Learning and Research in Spatial Data Science", Central Student Technology Committee's (CSTC) Grant, University of Wyoming, Madson A., **Yang D**., 06/30/2021-06/30/2022, **($9,998).**
Lead P.I.	"i-Tree Database Viewer", Wyoming State Forestry Division, Hodza P., **Yang D**., 06/30/2021-06/30/2022, **($9,965).**
Co. P.I.	"Unprecedented Western Bird Die-offs: Disentangling the Factors of Mortality Events at the Species-Level Using Machine/Deep Learning and Citizen Science", Azure Compute Credit Grant, Microsoft, Yang A., **Yang D**., Yang J., Xu R., Qiu H., 04/01/2021-03/31/2022, **($15,000 Credit).**
Lead P.I.	NCAR Research Computing Grant, University Corporation for Atmospheric Research, **Yang D**., 2021-2023 **(610,000 Credit Hours).**
Co. P.I.	"Assessing Net Ecosystem Carbon Exchange for the Conterminous United States with MODIS Data and Machine/Deep Learning Models", Azure Compute Credit Grant, Microsoft, Xu R., Chen J., **Yang D**., He Y., 01/01/2021-12/31/2021, **($15,000 Credit).**
Lead P.I.	"CitizenScaping: Linking People and Pixel Using Artificial Intelligence", Azure Compute Credit Grant, Microsoft, **Yang D**., Wan HY., Gao P., Zhang J., Azure Compute Credit Grant, Microsoft, 01/01/2020-01/01/2022, **($15,000 Credit).**

AWARDS AND HONORS

2023	Presidential Faculty Fellowship, University of Wyoming	**$15,000**
2022	NASA EPSCoR Travel Grants, NASA Wyoming Space Grant	**$500**
2021	Learning Actively Mentoring Program (LAMP) Fellow, University of Wyoming	**$5,000**
2020	Ellbogen Center for Teaching & Learning Online Teaching Grant, University of Wyoming	**$1,500**
2020	NEON Early Career Award, NEON	**$1,500**
2019	NEON Summit Travel Grant, National Science Foundation	**$658**
2019	University of Florida Open Access Publishing Fund (UFOAP)	**$1,500**
2018	Graduate School Doctoral Dissertation Award, University of Florida	**$9,000**
2018	Ary Lamme Service to Geography Awards, University of Florida	**$500**
2018	Top Student Research Articles in Geographic Techniques, University of Florida	**$500**
2018	NASA-MSU Professional Enhancement Award	**$620**
2013-2018	Graduate Student Geography Department Travel Grant	**$1,200**
2015-2018	Graduate Student Council Travel Grant, University of Florida	**$1,050**

2017	Land Use and Environmental Change Institute (LUECI) Travel Grant, University of Florida,	**$900**
2017	Office of Research Travel Grant, University of Florida	**$400**
2017	Annual Best Paper Award, Transactions of the Chinese Society of Agricultural Machinery	
2017	Best Paper Award in Geospatial Analysis and Techniques, University of Florida	**$150**
2015-2016	Microsoft Azure Research Award, Microsoft	**$20,000**
2013-2015	College of Liberal Arts and Sciences Doctoral Fellowship, University of Florida	**$12,000**
2013	Outstanding Master Thesis Award, Texas A&M University-Kingsville	**$500**
2011-2012	Merit Scholarship, Frank H. Dotterweich College of Engineering, Texas A&M University-Kingsville	**$1,000**
2012	1st Prize in the 4th Annual Javelina Symposium, Texas A&M University-Kingsville	**$500**

UBLICATIONS UNDER REVIEW/ IN PREP

***Corresponding author, ^ Student Mentee of Dr. Di Yang**

He Y, **Yang D*.** Enhanced Extreme Precipitation Simulation in China using NCAR CESM Based on a Realistic Remotely Sensed Time Series of Annual Land Cover and Land Use Data from 1982 to 2013. *Geophysical Research Letters*. *Under Review*

Thomas A, Kolb T, Dore S, Biederman J, Venturas M, Ma Q, **Yang D**, Tai X. Incorporating inter-tree competition and topography to mitigate forest mortality risk during drought. *New Pathologist. Under Review*

Ozsahin E, Ozdes M, Ozturk M, **Yang D.** Coastal Vulnerability Assessment of Thrace Peninsula: Impli-cations for Climate Change and Sea Level Rise. Invited Featured Paper, *Remote Sensing*. *Under Review.*

Huang X, Wang S, **Yang D,** Hu T, Chen M, Zhang G, Biljecki F, Lu, Zou, Wu C, Park Y, Li X, …and Mitchell J. Crowdsourcing Geospatial Data for Earth and Human Observations: A Review. *Journal of Remote Sensing. Under Review*

Yang D*, Mitchell J, Glenn N. Spatial Vegetation Diversity Patterns from Stands to Regional Scales Incorporating Airborne Observatory Platform (AOP) Datasets with Satellite Data in Northeastern U.S. *Remote Sensing*. *In Prep*

Nelson P, Low R, Kohl H, Overoye D, Schelkin L, Carney R, Chellappam S, Huang X, **Yang D**, Falk M, Garriga J, Harrington J; GLOBE Observer: Advancing Earth System Knowledge with AI-Powered Citizen Science. Invited Book Chapter - AI and the Future of Citizen Science Special Collection. *In Prep*

BOOK CHAPTER

Huang X, Li X, **Yang D**, Zou L. Crowdsourcing Geospatial Data in Human and Earth Observations: Opportunities and Challenges. Invited Chapter of *Geoinformatics for Geosciences, Advanced Geospatial Analysis using RS, GIS & Soft Computing*. Elsevier's Earth Observation Book Series, 109-129.

Yang D. Mapping Regional Landscape by Using OpenStreetMap (OSM): A Case Study to Understand Forest Patterns in Maya Zone, Mexico. *Volunteered Geographic Information and the Future of Geospatial Data*, February 2017, 138-157; IGI-Global., ISBN: 9781522524465, DOI:10.4018/978-1-5225-2446-5.

PUBLICATIONS

2023 Yan, X., **Yang, D**. (2023) Evaluation of Machine Learning Methods and Multi-Source Remote Sensing Data Combination to Construct Forest Above-Ground Biomass Models. *International Journal of Digital Earth. In Press*

2023 Wang, G., Yue, D., Yu, Q., **Yang, D**., Xu, C., & Wang, F. (2023). Study on Forest and Grassland Ecological Space Structure in Eyu Mining Area and Potential Alternatives for Enhancing Carbon Sequestration. *Forests*, 14(8), 1587.

2023 Huang, X., **Yang, D***., He, Y., Nelson, P., Low, R., McBride, S., ... & Guarraia, M. (2023). Land cover mapping via crowdsourced multi-directional views: The more directional views, the better. *International Journal of Applied Earth Observation and Geoinformation*, 122, 103382.

2023 **Yang, D***., Fu, C. S., Herrero, H. V., Southworth, J., & Binford, M. (2023). Linking forest management to surrounding lands: a citizen-based approach towards the regional understanding of land-use transitions. *Frontiers in Remote Sensing*, 4, 1197523.

2023 Shi, H., Cao, G., Zhang, Y., Ge, Z., Liu, Y., & **Yang, D**. (2023). F 3 Net: Fast Fourier Filter Network for Hyperspectral Image Classification. *IEEE Transactions on Instrumentation and Measurement*.

2023 Yang, Z., Yu, Q., Yang, Z., Peng, A., Zeng, Y., Liu, W^., ... & **Yang, D.** (2023). Spatio-Temporal Dynamic Characteristics of Carbon Use Efficiency in a Virgin Forest Area of Southeast Tibet. *Remote Sensing*, 15(9), 2382.

2023 Shafique, A., Seydi, S. T., Alipour-Fard, T., Cao, G., & **Yang, D**. SSViT-HCD: A Spatial Spectral Convolutional Vision Transformer for Hyperspectral Change Detection. *IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing*.

2023 Li, S^., Ma, H., **Yang, D***., Hu, W., & Li, H. (2023). The Main Drivers of Wetland Evolution in the Beijing-Tianjin-Hebei Plain. *Land,* 12(2), 480.

2023 He, Y., Seminara, P., Huang, X., **Yang, D**., Fang, F., Xu, R. A spatial analysis of empirical associations of health, socioeconomic, demographic, and environmental factors with COVID-19 in Arkansas, US. *ISPRS Journal of Geoinformation,* 12(2), 45.

2023 Yang, A., Liu, C., **Yang, D**., & Lu, C. (2023). Electric vehicle adoption in a mature market: A case study of Norway. *Journal of Transport Geography*, 106, 103489.

2022 Yan X, Li J, **Yang, D***, Li J, Ma T, Su Y, Shao J, Zhang R. (2022) A Random Forest Algorithm for Landsat Image NDWI and MNDWI Chromatic Aberration Restoration Based on GEE Cloud Platform: a case study of Yucatán Peninsula, Mexico. *Remote Sensing*, 14(20), 5154.

2022 SanClements, M.D., Record, S., Rose, K.C., Donnelly, A., Chong, S.S., Duffy, K., Hallmark, A., Heffernan, J.B., Liu, J., Mitchell, J.J., Moore, D., …and **Yang, D**. People,

infrastructure, and data: A pathway to an inclusive and diverse ecological Network of Networks. *Ecosphere*, 13(11), e4262.

2022 Ozsahin, E., Ozdes, M., Smith, A. C., & **Yang, D***. (2022). Remote Sensing and GIS-Based Suitability Mapping of Termite Habitat in the African Savanna: A Case Study of the Lowveld in Kruger National Park. *Land*, *11*(6), 803.

2022 Huang, X., Zhao, Y., Wang, S., Li, X., **Yang, D**., Feng, Y., ... & Chen, B. Unfolding Community Homophily in US Metropolitans Via Fine-Grained Mobile Phone Location Data. *Cities*, 129, 103929.

2022 Yang, A., Rodriguez, M., **Yang, D**., Yang, J., Cheng, W., Cai, C., & Qiu, H. (2022). Leveraging Machine Learning and Geo-Tagged Citizen Science Data to Disentangle the Factors of Avian Mortality Events at the Species Level. *Remote Sensing*, *14*(10), 2369.

2021 Nagy, C, Balch, J, Bissell, E, Cattau, M, Glenn, N, Halpern, B, Ilangakoon, N, Johnson, B, Joseph, M, Marconi, S, Riordan, C, Sanovia, J, Swetnam, T, Travis, W, Wasser, L, Zarnetske, P, & **Yang, D.** (n.d.). Harnessing the NEON Data Revolution to Advance Open Environmental Science with a Diverse and Data-Capable Community. *Ecosphere*. 12(12), e03833.

2021 Yang, A., Yang, J., **Yang, D**., Xu, R., He, Y., Qiu, H. Human Mobility to Open Space and Public Parks under COVID19 Pandemic and Wildfire Seasons in Western and Central United States. *GeoHealth.* 2021: e2021GH000494.

2021 Kitzes J, Blake R, Bombaci S, Chapman M., Duran, S… **Yang D**, Yule K. Expanding NEON Biodiversity Surveys with New Instrumentation and Machine Learning Approaches. *Ecosphere*. 12(11), e03795.

2021 He Y, Xu R, Prior S, **Yang D**, Yang A, Chen J. Satellite-detected ammonia changes in the United States: natural or anthropogenic impacts. *Science of the Total Environment. 2021. 147899.*

2021 **Yang D,** Yang A, Yang J, Xu R, Han Q. Unprecedented Migratory Bird Die-Off: A Citizen-based Analysis on the Spatiotemporal Patterns of Mass Mortality Events in the Western United States. *GeoHealth*. 2021. 5, e2021GH000395.

2021 **Yang D***, Fu C. Mapping Regional Forest Management Units: A Road-based Framework in Southeastern U.S. Coastal Plain and Piedmont. *Forest Ecosystems*. 2021, 8(1): 1-17. DOI: 10.1186/s40663-021-00289-w

2020 Merz L, **Yang D**, Hull V. A Metacoupling Approach to Watershed Management: The Case of an Irrigation Project in the Transnational Limpopo River Watershed. *Sustainability*. 2020, 12(5):1879. DOI: 10.3390/su12051879

2020 Herrero H, Waylen P, Southworth J, Khatami R, **Yang D**, Child B. A Healthy Park Needs Healthy Vegetation: The Story of Gorongosa National Park in the 21st Century. *Remote Sensing*. 2020, 12(3):476. DOI: 10.3390/rs12030476.

2019 **Yang D***, Wan H, Huang TK, Liu J. The Role of Citizen Science in Conservation Under the Framework of Telecoupling. *Sustainability*. 2019, 11; 1108. DOI: 10.3390/su11041108

2019 Kapsar K, Hovis C, Silva R, Buchholtz E, Carlson A, Dou Y, Du Y, Furumo P, Li Y, Torres A, **Yang D,** Wan H, Zaehringer J, Liu J. Telecoupling Research: The First Five Years. *Sustainability*. 2019, 11(4): 1033. DOI: 10.3390/su11041033

2019 **Yang D*,** Yang A, Qiu H, Zhou Y, Herrero H, Fu C-S, Yu Q, Tang J. A Citizen-Contributed GIS Approach for Evaluating the Impacts of Land Use on Hurricane-Harvey-Induced Flooding in Houston Area. *Land*. 2019; 8(2):25. DOI: 10.3390/land8020025

2018 Marsik M, Staub CG, Kleindl WJ, Hall J, Fu C, **Yang D**, Stevens FR, Binford MW. Regional-scale management maps for forested areas of the Southeastern United States

and the US Pacific Northwest. *Nature Scientific Data*. 2018 Aug 28; 5:180165. DOI:10.1038/sdata.2018.1651

2017 **Yang D***, Fu C, Smith A, Yu Q. Open Land-Use Map: A Regional Land-Use Mapping Strategy for Incorporating OpenStreetMap with Earth Observations. *Geo-Spatial Information Science*. 20(3): 269-281, 2017. DOI: 10.1080/10095020.2017.1371385

2017 Yu Q, Jiang Q, **Yang D**, Yue D *et al*. Incorporating Temporal and Spatial Variations of Groundwater into Constructing Water-based Ecological Network: A Case Study in Deng Kou County. *Water, 2017,* 9(11): 864. DOI: 10.3390/w9110864

2016 **Yang D**, Su H, Yong Y. MODIS-Landsat Data Fusion for Estimating Vegetation Dynamics-A Case Study for Two Ranches in Southwestern Texas. *In Proceedings of the 1st Int. Electron. Conf. Remote Sens*., Sciforum Electronic Conference Series, Vol. 1, 2015, d016; DOI: 10.3390/ecrs-1-d016

2017 Cao G, Chu Y, **Yang D**, Southworth J. A New Different Image Creation Methods Based on Deep Neural Networks for Change Detection. *International Journal of Remote Sensing*. 38(23): 7161-7175, 2017. DOI: 10.1080/01431161.2017.1371861

2019 Wang G, Qiang Y, **Yang D**, Zhang Q, Yue D, Liu J. Hierarchical Ecological Network Structure Based on Complex Network Analysis. *Nongye Jixie Xuebao/Transactions of the Chinese Society of Agricultural Machinery* 07/2019; 50(7):258-265. DOI: 10.6041/j.issn.1000-1298.2019.07.028

2019 Su K, Yu Q, **Yang D**, Zhang Q, Yang L, Sun X. Simulation of Forest-Grass Ecological Network Based on Multi-scene Model in Typical Desert-Oasis Ecotone. *Nongye Jixie Xuebao/Transactions of the Chinese Society of Agricultural Machinery* 07/2019

2019 Liu J, Zhang Q, **Yang D**, Yue D, Yu Q, Lan Y. Simulation of Ecological Land Transition in Baotou City Based on MCR-ANN-CA Model. *Nongye Jixie Xuebao/Transactions of the Chinese Society of Agricultural Machinery* 02/2019; 50(2):187-194. DOI: 10.6041/j.issn.1000-1298.2019.02.021

2019 Zhu J, Yu Q, **Yang D**, Xu C, Yue D, Chen X. Extraction and Optimization of Microscopic Image Vein Network Based on eCognition Software. *Nongye Jixie Xuebao/Transactions of the Chinese Society of Agricultural Machinery* 01/2019; 50(1):51-57. DOI: 10.6041/j.issn.1000-1298.2019.01.005

2018 Zhu J, Yu Q, **Yang D**, He W, Xu C, Kong X. Ecological Balance of Leaf Ecological Characteristics and Their Correlation to Thermal Effects of Underlying Surfaces. *Nongye Jixie Xuebao/Transactions of the Chinese Society of Agricultural Machinery* 11/2018; 49(11):201-209. DOI: 10.6041/j.issn.1000-1298.2018.11.024

2018 Zhang L, Yue D, **Yang D**, Luo Z, Xu Y, Yu Q. GIS Design and Experiment of Soil Erosion Intensity Calculating Based on Hadoop. *Nongye Jixie Xuebao/Transactions of the Chinese Society of Agricultural Machinery* 09/2018; 49(9):160-165. DOI: 10.6041/j.issn.1000-1298.2018.09.019

2017 Huang Y, Yue D, **Yang D**, *et al*. Simulation of Heat Island Based on Data Assimilation and CA Model in Baotou City. *Resources Science*, 2017, 39(11):2197-2207. DOI: 10.18402/resci.2017.11.01

2017 Ma H, Yue D, **Yang D**, Zhang Q, Huang Y. Interpolation of Groundwater Depth based on Data Assimilation. *Nongye Jixie Xuebao/Transactions of the Chinese Society of Agricultural Machinery* 04/2017; 48(4):206-214. DOI: 10.6041/j.issn.1000-1298.2017.04.027

2016 Yu Q, Yue D, **Yang D**, H. Ma, Zhang Q. Layout Optimization of Ecological Nodes Based on BCBS Model. *Nongye Jixie Xuebao/Transactions of the Chinese Society of Agricultural Machinery* 12/2016; 47(12):330-336. DOI: 10.6041/j.issn.1000-1298.2016.12.041

2016 Yu Q, Yue D, **Yang D**, Zhang Q, Ma H, Li Y. Simulation on Ecological Land Use Expansion Based on EnKF-MCRP Model. *Nongye Jixie Xuebao/Transactions of the Chinese Society of Agricultural Machinery* 06/2016; 47(9):285-293., DOI: 10.6041/j.issn.1000-1298.2016.09.039. (Annual Best Paper Award)

TEACHING EXPERIENCE

Cloud Geospatial Computing (GIST 5780)

- Cover topics including overview of cloud computing concepts, virtual machines, containerization, serverless computing, and leading provider options (AWS, Azure, Google Cloud).
- Teach techniques for distributed processing, machine learning, and visualization of large remote sensing datasets leveraging cloud services.
- Enable students to harness flexible, scalable cloud infrastructure to implement cutting-edge remote sensing capabilities using GeoAI algorithms.
- Emphasize real-world applications in areas like land cover mapping, disaster response, climate monitoring, food security, and sustainability.
- Responsible for all aspects of the course, University of Wyoming.

Enterprise GIS Systems (GIST 5350)

- Instructor of online class introduced the roles and responsibilities in Enterprise GIS systems, data visualization and analysis to fit into Enterprise GIS's best practices.
- Responsible for setting up, maintaining, and running the class Server and Portal with **ArcGIS Server and ArcGIS Enterprise**.
- Responsible for all aspects of the course, University of Wyoming.

Spatial Modeling and Data Analysis (GIST 5220)

- Instructor of online class-Core Grad course of GIST Program introduced geospatial modeling at different scales (software: ArcGIS Pro and Google Earth Engine API).
- Responsible for all aspects of the course, University of Wyoming.

Geographic Visualization (GIST 5200)

- Instructor of online class-Core Grad course of GIST Program introduced advanced Cartography and comprehensive skills of geographic visualizations.
- Responsible for all aspects of the course, University of Wyoming.
- Average enrollment: 23

Extreme Weather (GEO 2242)

- Introduced climatology with a focus on extreme events and climate variability. Responsible for all aspects of the course, University of Florida. Average enrollment: 140.

Physical Geography (GEO 2200)

- Instructor of both online and in-class covering all aspects of physical geography. Responsible for all aspects of the course (online exams, quizzes, assignments, grading).

- Developed online teaching modules and designed an interactive discussion forum. Average enrollment: in-class, 40; online, 100.

Geography of Africa (GEA 3600)

- Instructor of the online course.
- Developed the online course framework.
- Grader of all exams, scientific essays and quizzes.
- Average enrollment: 170.

Organizer. Google Earth Engine (GEE) as a tool for Enhancing Land Change Analysis with Cloud-Based Satellite Imagery. November 6-10, 2023. University of Wyoming. Enrollment: 30.

Organizer & Instructor. Digital Storytelling through Storymaps Workshop. February 15-18, 2023. University of Wyoming. Enrollment: 30.

Organizer & Instructor. 9H Smart Ranch AI and Machine Learning Workshop. June 15, 2022. University of Wyoming. Enrollment: 10.

Instructor, nation-wide workshop "Working with NEON Field and Airborne Observatory Platform (AOP) Data to Map Biodiversity", Swarthmore College, Swarthmore, Pennsylvania. Enrollment: 21; October 16-18, *2019*.

Organizer, lecturer and facilitator, campus-wide workshop "Google Earth Engine JavaScript API for Remote Sensing in Geographic Applications", University of Florida, Gainesville, Florida. Enrollment: 45; October 26, *2017*

INVITED TALKS

October 2023, Yang D. Guest Lecture on "Making Environmental Monitoring Inclusive: Uniting Geospatial AI and Citizen Science for Conservation" in GEO525 Advanced GIS, University of New Mexico, Albuquerque, New Mexico.

July 2023, Yang D. Invited speaker in "Synergizing Geospatial AI and Citizen Science: A New Era for Landscape and Ecological Monitoring" in the Summer Bridge Program, Frank H Dotterweich College of Engineering, Texas A&M University – Kingsville, Texas.

June 2023, Yang D. Invited speaker in "Geospatial AI Meets Citizen Science: Revolutionizing Landscape and Ecological Monitoring" in NASA STEM Enhancement in Earth Science (SEES) Summer High School Intern Program, NASA.

February 2023, Yang D. Guest Lecture on **"**Uncovering the Interconnections between Citizen Science and Earth Observation for Biodiversity Conservation and Land-Use Monitoring" in Geospatial Modeling, University of Arkansas, Fayetteville, Arkansas.

December 2022, Yang D. The Power of Crowd: Integrating Geospatial Artificial Intelligence and Citizen Science in Landscape and Ecological Monitoring. WyGISC Geospatial Forum, University of Wyoming.

October 2022, Yang D. Guest Lecturer on "Landscape Ecology – Landscape Metrics" in ECOL 5100: Ecology as a Discipline, University of Wyoming, Laramie, Wyoming.

July 2022, Yang D. Combining Citizen Science and Data Science: Assessing Citizen Science Labeled Training Data for NASA GLOBE Observer Land Cover Protocols. *NASA SEES Seminar.*

July 2022, Yang D. Remote Sensing and GIS Applications in the NASA Citizen Science Program. In Texas A&M University-Kingsville Summer Research Programs Webinar Series, Texas A&M University-Kingsville.

June 2022, Huang X, **Yang D**. Artificially intelligence application examples. In NASA STEM Enhancement in Earth Science (SEES) program.

April 2022, Yang D; Huang X, McBride S. Combining Citizen Science and Data Science: Characterizing and Accessing Citizen Science Labeled Training Data for GLOBE Observer Land Cover Protocols. NASA AICOE Seminar.

December 2021, Yang D. NASA GLOBE Opportunities. Wyoming NASA Space Grant Consortium 2022 Meeting.

November 2021, Yang D. Guest Lecture on "Citizen-based GIS Applications on Human-Environmental Interactions "in GGY 281 Introduction to GIS, University of North Carolina – Wilmington, Wilmington, North Carolina.

November 2021, Yang D. Guest Lecture on "Remote Sensing and GIS Applications on Biosphere" in GEO2200: Physical Geography, University of Florida, Gainesville, Florida.

October 2021, Yang D. Guest Lecture on "Land-Use Monitoring from Local to Macrosystems Scales: Linking Open-Source Data to Land Management", Department Seminar, Beijing Forestry University, China.

October 2021, Yang D. Guest Lecturer on "Landscape Ecology – Landscape Metrics" in ECOL 5100: Ecology as a Discipline, University of Wyoming, Laramie, Wyoming.

May 2021, Yang D. Speaker, HARVEST Network for Agricultural Research and Innovation Monthly Seminars. Virginia Tech University, Blacksburg, Virginia.

February 2020, Yang D. Guest Lecture, Leveraging NEON Data to Investigate Remote Sensing of Biodiversity Variables Across Scales. University of Tennessee, Knoxville, Tennessee.

January 2020, Yang D, Wu Q, Liu T. Keynote Speaker, MDPI Remote Sensing 2020 Webinar Series: Spatial Analytics for Earth Observation Using Google Earth Engine. Virtual

October 2020, Yang D. Guest Lecture, Geography in Academic Discipline. University of North Carolina Wilmington, Wilmington, North Carolina.

February 2020, Yang D. Spatial Vegetation Biodiversity Patterns from Stands to Regional Scales in Eastern United States. Systems Ecology Seminar. University of Montana, Missoula

February 2019, Yang D. Application of Remote Sensing Techniques to Petroleum Exploration. National Institute of Technology of Mexico, Coahuila, Mexico.

CONFERENCE PRESENTATIONS

Shilpakar C, **Yang D**, Holbrook D, Anowarul M. Effect of Land Management, Above-Ground and Below-Ground Properties on Soil Carbon in Reclaimed Grassland. Annual Meeting of American Society of Agronomy. St. Louis, Missouri, October 29 – November 1. Oral Presentation.

Liu W^, Yu Q, Pei Y, Wu Y, Niu T, Wang Y, **Yang D**. Characteristics of Ecological Spatial Network in the Yellow River Basin. 2023 GIS in the Rockies Annual Meeting, Denver, Colorado, September 20 – 21. Poster Presentation. **3rd Place in Student Poster Competition**

Ozdes M, Ozsahin E, **Yang D**. Assessing Coastal Vulnerability and Hydrodynamic Responses to Climate Change in the Thrace Peninsula. 2023 GIS in the Rockies Annual Meeting, Denver, Colorado, September 20 – 21. Oral Presentation.

Shilpaker C, **Yang D**, Holbrook D, Islam A. Impacts of Spatial and Temporal Vegetation Cover on Soil Organic Carbon in Reclaimed Grassland. 2023 Annual Meeting of Western Society of Crop Science. Honolulu, Hawaii, June 28, 2023. Oral Presentation.

Yang D, Huang X, Nelson P, Low R, McBride S, Mitchell J. A Meta-Learning Framework for Characterizing and Accessing Training Data for GLOBE Observer Program Land Cover Protocols. 2022 American Geophysical Union Annual Meeting, Chicago, December 12th -16th, 2022. Poster Presentation.

Yang A, Rodrigue M, **Yang D**, Yang J, Cheng W, Cai C, Qiu H. Leveraging Machine Learning and Geo-Tagged Citizen Science Data to Disentangle the Factors of Avian Mortality Events at the Species Level. 2022 American Geophysical Union Annual Meeting, Chicago, December 12th - 16th, 2022. Poster Presentation.

Smith A, Ozsahin E, Ozdes M, **Yang D**. Remote Sensing and GIS-Based Suitability Mapping of Termite Habitat in the African Savanna: A Case Study of the Lowveld in Kruger National Park. 2022 Annual Southeastern Division of the Association of American Geographers Annual Meeting (SEDAAG) Meeting. November 20 – 21, Atlanta, Georgia. Oral Presentation.

Yang D, Huang X, Nelson P, Low R, Mitchell J, McBride S. Assessing the Accuracy of Land Cover Mapping Using Multi-Directional Views GLOBE Observer Images. 2022 Pecora Annual Meeting. Denver, October 23 – 28, 2022. Invited Oral Presentation.

Shilpakar C, Holbrook D, **Yang D**, Islam M.A. Mapping Soil Carbon Content of Reclaimed Grassland at Different Depth Using Empirical Bayesian Kriging. 2022 Western Society of Crop Science Annual Meeting, Fort Collins, Colorado, June 21st – 22nd, 2022. Poster Presentation.

Yang D, Geospatial Awareness and Literacy: Visual and Active Learning Opportunities through Geospatial Citizen Science Data. In Leadership and Academic Mentorship Program (LAMP) Annual Conference, University of Wyoming. Poster Presentation.

Yang D, Wan H, Huang T, Gao P. Leveraging Citizen Science and Earth Observation for Monarch Butterfly Conservation. 2021 AGU Annual Meeting, New Orleans, Louisiana, December 13th – 18th, 2021. Poster Presentation.

Yang A, **Yang D**, Yang J, Xu R, Qiu H. Unprecedented Migratory Bird Die-off: A Citizen-based Analysis on the Spatiotemporal Patterns of Mass Mortality Events in Western United States. 2021 ESA Annual Meeting, August 2nd – 6th Virtual, 2021. Poster Presentation.

Yang D, Mitchell J, Farella M, Liu T, Ryan R, Nancy Glenn. Biodiversity Sensing: A NEON-based Approach toward a Regional Understanding of Spatial Vegetation Diversity in Northeastern U.S. 2021 ESA Annual Meeting, August 2nd – 6th Virtual, 2021. Poster Presentation.

Yang D, Mitchell J, Rock R, Xu R, Tolbaske C, Hart M. Spatial Vegetation Diversity Patterns from Stands to Regional Scales Incorporating Airborne Observatory Platform (AOP) Datasets with Satellite Data in Northeastern U.S. 2020 AGU Annual Meeting, December 1st – 17th, 2020. Poster Presentation.

Yang D, Mitchell J, Glenn N. Spatial Vegetation Diversity Patterns from Stands to Regional Scales Incorporating Airborne Observatory Platform (AOP) Datasets with Satellite Data in Northeastern U.S. 2019 AGU Annual Meeting, San Francisco, United States. December 9th – 13th, 2019. Poster Presentation.

Stoy P, Kleindl W, Binford M, Desai A, Dietze M, Duffy P, Fu C, Rollinson C, Schultz C, Starr G, Marsik M, **Yang D**, Staudhammer. Integrating Management into Models of Forest Function at Local to Continental Scales. 2019 12th North American Forest Ecology Workshop, Flagstaff, Arizona, United States, June 23rd -27th, 2019, Oral Presentation.

Marsik M, Staub C, Kleindl W, Hall J, Fu CS, **Yang D**, Stevens F, Binford M. Regional-scale Management Maps for Forested Areas of the Southeastern United States and the U.S. Pacific Northwest. 2019 AAG Annual Meeting, Wethington D.C. United States. April 3rd -7th, 2019, Oral Presentation.

Fu C, **Yang D**, Binford M. Characterizing Forest Disturbance Regimes: Impact Assessment of Management in US Forests. 2019 AAG Annual Meeting, Wethington D.C. United States. April 3rd -7th, 2019, Oral Presentation.

Yang D, Fu C, Binford M. Linking Forest Management to Surrounding Lands: A Citizen-Based Approach Towards the Regional Understanding of Land-Use Change. 2018 AGU Annual Meeting, Washington D.C. United States. December 10th - 14th, 2018, Oral Presentation.

Fu C, **Yang D**, Binford M. The Role and Impact of Land Ownership on Forest Disturbance in the Southeastern United States. 2018 AGU Annual Meeting, Washington D.C. United States. December 10th -14th, 2018, Oral Presentation.

Staudhammer C, Binford M, Desai A, Dietze M, Duffy P, Fu C, Klendl W, Rollinson C, Schultz C, Marsik M, Starr G, Stoy P, **Yang D**. The Future of US Forest Function under Changing Climate, Disturbance, and Forest Management. 2018 AGU Annual Meeting, Washington D.C. United States. December 10th - 14th, 2018, Oral Presentation.

Yang D, Yang A, Qiu H, Fu C, Binford M. Contributions of Citizen Science to Regional Landscape Ecology: The Impact of Land-Use on Flooding Due to Hurricane Harvey. 2018 US-IALE Annual Meeting, Chicago, Illinois, United States. April 9th - 13th, 2018, Oral Presentation.

Yang D, Fu C, Binford M. Open Land-Use Map: A Regional Mapping Strategy for Incorporating OpenStreetMap with Earth Observations. 2017 AGU Annual Meeting, New Orleans, Louisiana, United States. December 11th - 15th, 2017, Oral Presentation.

Yang D, Fu C, Binford M. Design and Implementation of a Self-Supervised Cloud Computing Framework to Link Forest Management to Surrounding Lands. 2017 US-IALE Annual Meeting, Baltimore, United States. April 9th - 14th, 2017, Oral Presentation.

Yang D, Marsik M, Fu C, Ozdes M, Smith A, Binford M. Design and Implementation of a Self-Supervised Cloud Computing Framework to Link Forest Management to Surrounding Lands. 2017 AAG Annual Meeting, Boston, United States. April 5th - 9th, 2017, Oral Presentation.

Binford M, Marsik M, Fu C, **Yang D**. Mapping the Distribution and Spatial Characteristics of Forest Management in Two Major Forested Areas of the USA. 2017 AAG Annual Meeting, Boston, United States. April 5th - 9th, 2017, Oral Presentation.

Ozdes M, Smith A, **Yang D**, Southworth J. Evaluation of Vegetation Change in Kruger National Park Using a Markov Chain Monte Carlo Model. 2017 AAG Annual Meeting, Boston, United States. April 5th - 9th, 2017, Oral Presentation.

Smith A, **Yang D**, Ozdes M, Southworth J. Vegetation Dynamics and Undernutrition: A Spatiotemporal Analysis of NDVI and Child Stunting in Zambia. 2017 AAG Annual Meeting, Boston, United States. April 5th - 9th, 2017. Oral Presentation.

Yang D, Ozdes M, Smith A, Binford M. Open-Source Land-Use Mapping: A Strategy for the Southeastern U.S. Coastal Plain and Piedmont. Southeastern Division of the Association of American Geographers Annual Meeting. November 20st – 22nd, 2016, Columbia, USA. Oral Presentation.

Marsik M, Binford M, Fu. C, **Yang, D**, Staub C, Hall J. Mapping Forest Management at Regional Scales in the Southeast U.S. AAG Annual Meeting. March 29th - April 2nd, San Francisco, USA, Oral Presentation.

Yang D, Marsik M, Fu. C, Hall J, Binford M. Estimating Forest Management Units from Road Network Maps in the Southeastern U.S. AGU Annual Meeting. December 13th - 19th, 2015, San Francisco, USA. Poster Presentation.

Yang D, Stevens F, Staub C, Hall J, Binford M. How smoothing Affects Disturbance Detection in Decomposed MODIS Time Series? AAG Annual General Meeting. April 8th - 12th, 2014, Tampa, Florida, USA. Poster Presentation.

Yang D, Su H. MODIS-Landsat Data Fusion for estimating Vegetation Dynamics-A Case Study for Two Ranches in West Texas, 14th Annual CREST-RESSACA Environmental and Energy Sustainability Conference", April 26th - 27th, 2012, Houston, Texas. Poster Presentation.

SERVICE

National and International Service

2023	NSF Review Panelist
2023 - Present	Wyoming-NCAR Alliance Resource Advisory Panel (WRAP)
2023	NASA ROSES Review Panelist
2022 – Present	Editor Board: Scientific Reports, Nature
2022 - Present	Guest Editor: Community Science. *Nature Humanities & Social Sciences Communications and Scientific Reports.*
2022 – Present	Guest Editor: The Potential Impacts of Climate Change on the Distribution of Tree Species. *Frontiers in Forests and Global Change*
2022 – Present	Guest Editor: Research on the Structure and Function of Forest and Grassland Based on Multi-Source Remote Sensing Data. *Remote Sensing*
2022	NSF External Reviewer
2021 - Present	Guest Editor: Remote Sensing
2020 - Present	Topical Editor: Sustainability
2021	NASA SMD STEM Review Panelist
2020	National Science Foundation (NSF) Review Panelist
2020 - Present	Program Committee: 1st – 3rd ACM SIGSPATIAL COVID Workshop
2021 - Present	Guest Editor: Advances in Remote Sensing of Land-Sea Ecosystems. *Remote Sensing*.
2021 - Present	Reviewer: Remote Sensing of Environment
2021 - Present	Reviewer: Stochastic Environmental Research and Risk Assessment
2021 - Present	Reviewer: Landscape Ecology
2020 - Present	Reviewer: Technological Forecasting and Social Change
2020 - Present	Reviewer: Sensors
2020 - Present	Reviewer: Journal of Cleaner Production
2020 - Present	Reviewer: Remote Sensing
2020 - Present	Reviewer: Sustainability
2019 - Present	Reviewer: Science of the Total Environment
2019 - Present	Reviewer: University of Florida-IFAS Extension Administration
2019 - Present	Reviewer: ISPRS International Journal of Geo-Information
2019 - Present	Reviewer: Ecological Applications
2019 - Present	Reviewer: Applied Sciences
2019 - Present	Reviewer: Water
2019 - Present	Reviewer: International Journal of Environmental Research and Public Health
2019 - Present	Judge: Outstanding Student Paper Award - American Geophysics Union
2019 - Present	Reviewer: The Egyptian Journal of Remote Sensing and Space Sciences
2019 - Present	Reviewer: ISPRS International Journal of Geo-Information
2018	APN (Asia-Pacific Network for Global Change Research) External Reviewer
2018 - Present	Reviewer: Remote Sensing Letters

2017	Book Reviewer: Volunteered Geographic Information and the Future of Geospatial Data
2015 - Present	Reviewer: International Journal of Remote Sensing

University Service

2023	Search Committee, Department of Plant Science
2023	Grant Reviewer: Data Science Fellow – Data Science Center, UWYO
2022	Thesis-based Master Admission Committee, WyGISC
2021	Ad-hoc Committee of GIS Certificate, WyGISC
2021	Nominated and elected to be the Member of Graduate Admission Affairs Committee, Program in Ecology, University of Wyoming
2021	Amazon AWS Certified Educator and Representative of AWS Academy Institution in University of Wyoming
2020	GIS Certificate Ad Hoc Committee, University of Wyoming
2019	Judge: Outstanding Student Paper Award - American Geophysics Union
2018	Grant Reviewer: Graduate Student Council, University of Florida
2017 - 2018	Geography Department Graduate Student Representative, University of Florida
2012 - 2013	Chinese Students Association - President, Texas A&M University - Kingsville
2011	Volunteer: 9th Annual Pathways Student Research Symposium. College Station, Texas.

TECHNICAL EXPERTISE

- Programming: Architect robust geospatial analytics workflows using Python, R, IDL, JavaScript, C++.
- Cloud Platforms: Harness the power of Google Earth Engine (GEE), AWS, and Azure.
- Geospatial AI: Implement state-of-the-art deep learning solutions for remote sensing and GIS applications using TensorFlow and PyTorch.
- App Development: Build interactive web apps, 3D visualizations, and dashboards using Streamlit, Leaflet, Plotly.
- High-Performance Computing: Develop optimized code to accelerate geospatial computations on clusters, GPUs, and cloud computing resources.

MEDIA COVERAGE & NEWS RELEASES

- Dillon, N. (2023). Changing weather is affecting songbirds' migration. Tracking devices will find where they're going. Wyoming Public Radio. https://www.wyomingpublicmedia.org/open-spaces/2023-05-19/changing-weather-is-affecting-songbirds-migration-tracking-devices-will-find-where-theyre-going
- Featured in Wyoming Truth article "WOMEN YOU SHOULD KNOW IN WYOMING: Scientist Brings NASA's Work to the West", March 2023. https://wyomingtruth.org/women-you-should-know-in-wyoming-scientist-brings-nasas-work-to-the-west/

- Featured in Wyoming Tribune Eagle article "UW study shows fires, summer snowstorms created unprecedented migratory bird die-off", June 2021. https://www.wyomingnews.com/news/from_the_wire/uw-study-shows-fires-summer-snowstorms-created-unprecedented-migratory-bird-die-off/article_95b38636-0041-5917-9b5c-078108a6af1d.html

PROFESSIONAL ORGANIZATIONS

- Institute of Electrical and Electronics Engineers (IEEE)
- Regional Association of the International Association for Landscape Ecology (US-IALE)
- American Geophysical Union (AGU)
- Association of American Geographers (AAG)
- American Academy of Environmental Engineers and Scientists (AAEE)

LANGUAGES

- Chinese (native proficiency)
- English (full professional proficiency)
- Spanish (minimum professional proficiency)