ForestSAT 2026

Association for Forest Spatial Analysis Technologies

May 4-8, 2026 | Gainesville, Florida, USA

Title: Integrating GLOBE Observer Tree and Land Cover Data with NASA Earth Observations for Environmental Monitoring

Instructors/Affiliation:

- Dr. Di Yang, University of Florida
- Dr. Nelson, Department of Earth, Ocean, & Atmospheric Sciences Oregon State University.

Description: This hands-on workshop introduces participants to the GLOBE Observer platform for collecting tree height and land cover data and demonstrates how citizen science observations can be integrated with NASA Earth observation products to create powerful environmental monitoring datasets. Participants will learn data collection protocols, quality assurance techniques, and explore real-world applications in vegetation mapping and land cover change detection.

Learning Objectives:

- Master GLOBE Observer tree height and land cover data collection protocols
- Understand NASA Earth observation products (MODIS, Landsat) for vegetation and land cover analysis
- Apply data quality control and validation techniques for citizen science data
- Integrate GLOBE observations with satellite imagery using Cloud Compare and GIS tools
- Analyze land cover patterns and vegetation dynamics using integrated datasets

Target audience: Environmental scientists, educators, graduate students, remote sensing specialists, and citizen science coordinators interested in leveraging crowdsourced data for environmental monitoring and land cover assessment.

Format & Activities:

- Interactive presentations with live demonstrations
- Hands-on field data collection using GLOBE Observer app

- Computer-based exercises for data processing and integration
- Group analysis of real case studies from land cover mapping projects
- Q&A sessions with instructors

Expected outcomes: Participants will gain practical skills in citizen science data collection, understand the GLOBE-NASA data integration framework, and be able to implement these techniques in their own research or educational programs. Each participant will receive a certificate of completion and access to workshop materials and datasets.

Language: English

Requirements: Computer with Cloud Compare installed, smartphone with GLOBE Observer app (free download), basic familiarity with GIS concepts helpful but not required

Schedule: Jan 29, 9:00 AM – 2:00 PM (EST)

Duration: 4: hours

Instructor Biography: Dr. Peder Nelson is a geospatial scientist with extensive experience in remote sensing and citizen science data integration. Dr. Di Yang is an Assistant Professor specializing in Earth system modeling and leads multiple citizen science initiatives integrating GLOBE observations with satellite data.

Agenda

Eastern Time (ET)	Topic	Instructor
9:00 - 9:15 AM	Welcome & Introduction to GLOBE Observer Program	Dr. Yang
9:15 - 9:45 AM	GLOBE Tree Height Protocol: Theory and Methods	Dr. Nelson
9:45 - 10:15 AM	GLOBE Land Cover Protocol: Classification Systems	Dr. Nelson
10:15 - 10:30 AM	**Break**	-
10:30 - 11:15 AM	Hands-on Data Collection with GLOBE Observer App	Both
11:15 - 11:45 AM	NASA Earth Observations: Vegetation Analysis	Dr. Yang
11:45 AM - 12:30 PM	Lab Exercise: Data Integration using Cloud Compare	Dr. Nelson
12:30 - 1:00 PM	**Break**	-
1:00 - 1:30 PM	Case Study: Change Detection and Validation	Dr. Yang
1:30 - 1:50 PM	Group Exercise: Analyzing Vegetation Patterns with Integrated Data	Both
1:50 - 2:00 PM	Discussion, Resources, and Next Steps	Both