



Opportunities for Research Faculty in Forest Remote Sensing: Postdoctoral Associates or Assistant Research Professors Specializing in GEDI and EO Data

The Department of Geographical Sciences at the University of Maryland, College Park, is currently looking to fill several Professional Track Research Faculty positions. These non-tenure opportunities are open at the levels of Postdoctoral Associate or Assistant Research Professor, based on the successful candidate's qualifications and experience. We offer highly competitive salaries and benefits packages. The roles encompass a broad spectrum of activities including but not limited to supporting projects linked to the Global Ecosystem Dynamics Investigation (GEDI) [<https://gedi.umd.edu>], NASA's Carbon Monitoring System (CMS) [<https://carbon.nasa.gov/cms/>], and development of methods for mapping and monitoring mature and old-growth forests.

The GEDI mission focuses on biomass estimation, biodiversity, habitat characterization, forest complexity, and prognostic ecosystem models, and is slated to resume operations in late 2024 for a minimum of three years. An important aspect of our current initiatives focuses on the integration of GEDI data with other Earth Observation (EO) data such as from passive optical/stereo and Synthetic Aperture Radar (SAR) technologies. The latter includes data from TanDEM-X, ALOS-2 and Sentinel-1, as well as the forthcoming NISAR and BIOMASS missions. Successful candidates will participate in diverse aspects of GEDI-related science analyses and projects. This participation includes refining and validating science algorithms, post-flight calibration and validation, developing field observation databases, science data product development and the fusion of multi-sensor data. There is also the opportunity to utilize these remote sensing data in science investigations within the candidate's areas of interest.

Our NASA CMS projects are focused on combining GEDI and interferometric SAR (InSAR) data to map high-resolution biomass and its changes, in collaboration with partner institutions including the German Aerospace Center (DLR), alongside activities utilizing these data to drive ecosystem and diversity models. Our mature and old-growth forest work is in partnership with the U.S. Forest Service, NASA Goddard Space Flight Center (GSFC), and Harvard Forest. This research is developing methodologies for the assessment and monitoring of mature and old-growth forests using a comprehensive range of EO data, modeling, and in situ national forest inventory data. These projects have significant engagement with stakeholders at the local, national, and international levels.

Ideal candidates will have a background in fields related to Earth observation and terrestrial ecology, with demonstrated interests in remote sensing science, machine learning, ecosystem structure and biomass, ecosystem modeling, and studies on habitat/diversity, among others. Technical expertise in lidar (terrestrial, airborne, or spaceborne) and/or SAR remote sensing is highly desirable. Nonetheless, applicants with strong backgrounds in other remote sensing domains or those skilled in applying machine learning or statistical analyses to remote sensing data are also welcome to apply.



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Location

The positions are co-located with the GEDI research group at the University's Discovery District [<https://innovate.umd.edu/resources/discoverydistrict>], Maryland's largest research park, located off-campus yet in close proximity. Additionally, these positions may require domestic and international fieldwork to support research objectives and product development.

Minimum Qualifications and Required Skills

Candidates must possess a doctoral degree in Geographical Sciences or a related field within environmental science, such as Biology or Forestry. Those with doctoral degrees in other disciplines (e.g., Physics, Computer Science, Electrical Engineering) who demonstrate substantial knowledge and understanding of land surface remote sensing are also eligible. Essential skills include competency in programming and statistical analysis, with experience in languages and tools such as Python, IDL, MATLAB, C/C++, R, PyTorch, TensorFlow. For the Assistant Research Professor level, a proven track record of independent research and peer-reviewed publications is required.

Preferred Qualifications

Experience with lidar remote sensing using GEDI data and/or experience with SAR remote sensing. Candidates should have experience and expertise in working effectively with individuals from diverse backgrounds.

Application Process

Interested candidates should submit an application including a personal statement detailing their background and experience relevant to the role, a current, signed, and dated Curriculum Vitae, reprints or URLs for selected peer-reviewed publications, and the contact details (including email addresses) for 3-5 references. Candidates are encouraged to reach out to Ralph Dubayah (dubayah@umd.edu) for discussions on potential research interests they wish to pursue at the University of Maryland.

Applications must be submitted by **March 30th, 2024**, for priority consideration, although the search will remain open until the positions are filled.

How to Apply

Submit your application through the University of Maryland employment portal: ejobs.umd.edu/postings/116918. We particularly encourage applications from women and minorities. The University of Maryland is committed to diversity and inclusivity, operating as an Equal Opportunity Affirmative Action Employer.

Additional Information

For more details about the department's research programs, please visit <http://www.geog.umd.edu> or contact us directly at the provided address.



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