

We are currently seeking a graduate or undergraduate intern for our LCLUC project (<https://lcluc.umd.edu/projects/analyzing-land-use-change-impacts-oil-and-gas-exploration-related-infrastructure-changes>)

10-week internship (20 hours per week)

Background

The Arctic is a hotspot of land-cover and land-use change (LCLUC) due to polar amplification of global warming, thawing permafrost, human activity, and greening/browning of tundra vegetation. Arctic ecosystems are susceptible to disturbances such as energy exploration, fires, and construction, changing the structure, composition, and function of natural plant communities, and causing permafrost degradation. Further, regions in the Arctic are susceptible to infrastructure failure due to relatively high ground ice content and thick deposits of frost-susceptible sediments, increasing the potential for thaw. The graduate intern will work on a project that is analyzing land disturbances and societal vulnerabilities associated with expanding the human footprint of oil and gas exploration concomitant to thawing permafrost around Arctic regions with an extensive history of oil and gas exploration.

Description

The graduate intern will work with a team of JPL researchers and other co-investigators on a project to characterize the spatiotemporal land disturbances associated with the expanding human footprint of oil and gas exploration around Prudhoe Bay in North Slope Borough (NSB), Alaska. The project will involve the analysis of land disturbances identified from satellite data (MODIS/VIIRS, Landsat/Sentinel) and airborne imagery (AVIRIS-NG) spanning two orders of magnitude in spatial and spectral resolution to track anthropogenic Arctic LCLUC (roads, pipelines, structures). Along with the remote-sensing based time-series analysis, the graduate intern will work on analyzing socio-economic data to identify vulnerabilities of communities in the NSB due to land-cover and land-use change. The intern will work in a team, and will have the opportunity to participate in earth science division activities, seminars and collaboration.

Interested individuals can reach out to me ([Latha Baskaran](#)) directly.