

## **Characterizing High-Resolution Population Distributions: a LandScan Experience**

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### **Abstract**

Accurate representations of population distribution are critical for a wide variety of research needs including resource management, policy analysis, risk analysis, and emergency preparedness. Multi-variable, dasymetric population distribution models developed at Oak Ridge National Laboratory (ORNL) apply GIS and Remote Sensing data and technologies to spatially and temporally disaggregate census counts producing a non-uniform distribution of the population. The integration of demographic and transportation models with LandScan allow the unique capability of estimating time-variant population dynamics which can greatly enhance the analytical capability for numerous applications. The presentation will examine the scientific and technological advances and lessons learned through Oak Ridge National Laboratory's LandScan population distribution and dynamics modeling research program. Specific examples will cover existing research efforts that address identifying population distribution in space and time, delineating geographic variability of population densities with respect to settlement structures, and demographic and activity characterization through image driven analysis.

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