



## AAG Annual Meeting

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### Paper Session:

#### 4473 Remote Sensing Techniques for Population Characterization

is scheduled on Friday, 4/24/2015, from 1:20 PM - 3:00 PM in Lucerne 1, Swissôtel, Lucerne Level

#### Sponsorship(s):

Population Specialty Group  
Remote Sensing Specialty Group  
Spatial Analysis and Modeling Specialty Group

#### Organizer(s):

[Jeanette Weaver](#) - Oak Ridge National Laboratory  
[Melanie Phillips](#) - Oak Ridge National Laboratory

#### Chair(s):

[Jeanette Weaver](#) - Oak Ridge National Laboratory

#### Abstract(s):

**1:20 PM Author(s):** \*Ron Mahabir - Department of Geography and Geoinformation Science, George Mason University  
Peggy Agouris, PhD - Department of Geography and Geoinformation Science, George Mason University  
Anthony Stefanidis, PhD - Department of Geography and Geoinformation Science, George Mason University  
Arie Croitoru, PhD - Department of Geography and Geoinformation Science, George Mason University  
Andrew Crooks, PhD - Department of Computational Social Science, George Mason University

Abstract Title: *Slum detection and mapping- A synthesis of methods, challenges and opportunities for supporting improved population monitoring*

**1:40 PM Author(s):** \*Harini Sridharan, Dr. - Oak Ridge National Laboratory  
Anil Cheriyaat, Dr. - Oak Ridge National Lab  
Dilip R Patlolla - Oak Ridge National Lab  
Vincent R Paquit, Dr. - Oak Ridge National Lab  
Jiangye Yuan, Dr. - Oak Ridge National Lab

Abstract Title: *High Performance Computing for Large Scale Settlement Mapping and Characterization using High Resolution Imagery*

**2:00 PM Author(s):** \*Jeanette Weaver - Oak Ridge National Laboratory  
Melanie Phillips - Oak Ridge National Laboratory

Abstract Title: *Spectral Based Patterns in Feature Extraction to Detect Settlement Information*

**2:20 PM Author(s):** \*Melanie Phillips - Oak Ridge National Laboratory  
Devin White - Oak Ridge National Laboratory  
Jeanette Weaver - Oak Ridge National Laboratory  
Eric Weber - Oak Ridge National Laboratory

Abstract Title: *Exploring New Heights: Building Height Extraction for Population Modelling*

**2:40 PM Author(s):** \*DongMei Chen - Queen's University  
Masroor Hussain - Department of Geography, Queen's University

Abstract Title: *A toolset for evaluating image segmentation quality through automated shape comparison*

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**Session Description:** Remote sensing applications are commonly utilized in population analyses such as urban sprawl and planning, slum monitoring, and population projections. Remote sensing applications allow for large scale, spatially accurate population assessments. Combining remotely sensed data and population information such as census data and demographic information gives a more robust approach to identifying population characteristics for crucial application areas such as disaster relief/management, vaccination/immunization deployment, urban planning, and resource allocation. This paper session will focus on the combination of applications using multi-temporal remote sensing data to assist in the characterization of populations specifically highlighting spatial techniques such as imagery feature statistics, data interpolation for DEM extraction, and dasymetric mapping to accurately estimate populations both spatially and temporally. This session seeks presentations exploring recent advances and observations in remote sensing related but not limited to:

- Image preprocessing
  - Change detection
  - Slum mapping
  - Data fusion
  - Population projections
  - Spectral analyses
  - DEM extraction
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