

Development of Urban Remote Sensing Lab at Indiana State University

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Objectives: This project aims to open the world's first **Urban Remote Sensing Laboratory (URSL)** under our existing **Center for Urban and Environmental Change (CUEC)** research cell at Indiana State University. The main functions of this lab are: (1) to cater to the needs of the research community in the development of models and methods that address the urban environment issues; (2) to serve as an information hub for sharing through both virtual (web based) and physical (conferences, seminars, workshops, etc.) interaction with other research groups of similar interests; and (3) to disseminate the results of our research (and researches carried out else where) in a simplified form and creative graphics so that non-remote sensing/GIS people (including K-12 students and teachers) and beginners would be able to understand and appreciate.

Significance: The so developed portal would not only be a source for dissemination of information but would also help as a catalyst in creating awareness to the urban mass about their environments. The unique characteristics of the lab would make it different from the rest of the remote sensing laboratories around the world. Firstly, it will be the first lab which will be dedicated only to urban remote sensing studies. Secondly, the initial team of researchers working within the lab have already done considerable amount of work in the field of urban remote sensing. This would give the lab a good starting point. Thirdly, the CUEC under which the lab would be functioning has already had a considerable amount of satellite image, aerial photography, GIS and other data repository. These advantages together with the supervision of Dr. Weng, who has worked for years and is well recognized in field of urban remote sensing, would make this lab unique and highly useful and attractive to the remote sensing community as a whole and urban researchers in particular.

FOR FURTHER READING:

Weng, Q., Liu, H., Liang, B. and D. Lu. 2008. The spatial variations of urban land surface temperatures: pertinent factors, zoning effect, and seasonal variability. *IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing*, 1(2): 154-166.

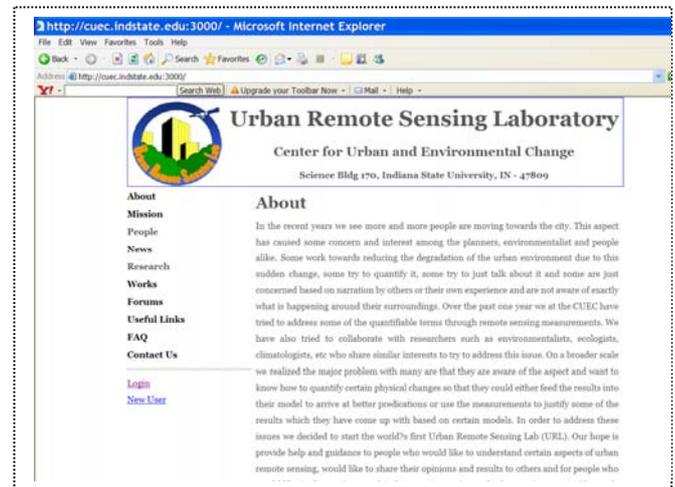


Figure 1. Urban Remote Sensing Lab web home page. Web address - <http://cuec.indstate.edu:3000/>. This web will also serve as an information hub for sharing and disseminating research results and pertinent information, and interacting with urban remote sensing researchers.

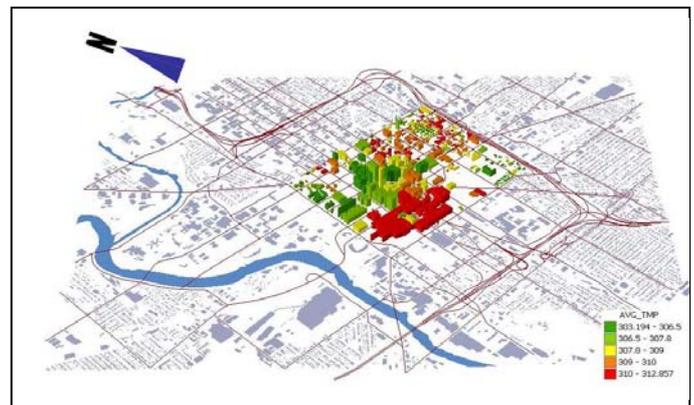


Figure 2. This figure illustrates a recent study conducted by a graduate student at the ISU Urban Remote Sensing Lab. Buildings at central Indianapolis were extracted by using LiDAR data with the object-oriented algorithm. Land surface temperatures derived from a Landsat ETM+ thermal infrared image were then added as an attribute of building polygons.