

# CENTER FOR SPATIAL ANALYSIS

## ***Lacunarity Approaches in Texture Analysis and Classification of Remotely Sensed Data***

Sponsored by the University of Oklahoma and NASA EPSCoR, this project aims to develop specialized computer programs that will support the applications of fractal and lacunarity algorithms for effective urban land-use and land-cover classification. The results will have implications on scale dependency of geographic phenomena, spatial data mining, pattern recognition, and geocomputation in GIScience. Identification of a consistent and reliable method will enable classification of urban features with results that are comparable between studies.

## ***Dynamic Online Course for Community Growth***

In a collaborative effort with Florida State University and the University of Maryland, College Park, a NASA grant through the Institute for Advanced Education in Geospatial Sciences, University of Mississippi, provides for the development of a dynamic distance-learning course (Model Curriculum Development in Geospatial Sciences) highlighting the application of remote sensing and GIS technologies in the planning and management of community growth. This dynamic course, based on research case studies, covers the effects of community growth on the ecosystem and quality of life. Targeted to support NASA Earth System Science National Applications, this course is designed not only for U.S. but also for the international science audience.

## ***Reducing the Effect of Hazards through the Analysis of Urban Dynamics (READY)***

This project aims to develop an integrative GIS and remote sensing approach for the analysis of urban vulnerability to natural and technological hazards. Its primary objective is to provide the conceptual and technical infrastructure needed for assessing spatial variation in urban vulnerability by developing an understanding of how varying patterns of vulnerability, underlying engineering factors and social conditions are manifested in the spatial structure of urban areas (READY-2).

## ***Delivering the Architectural Heritage of Luxor City, Egypt, to the Public through the Techniques of GIS, Virtual Reality and Internet Mapping***

Shaping and implementing public policy is a potent factor for promoting architectural conservation in historical sites. Using a case study from the historical city of Luxor, Egypt, this project explores how GIS, combined with animated visualizations can make it possible to understand complex relationships related to architectural conservation, which had previously been obscured to all but the most familiar experts. The project also aims to demonstrate how the visual signal may be a critical tool in raising the public's concern for the impacts of incorrect development activities, or of the failures of conservation policies in these sites.

## **Initiatives and Outreach**

### ***Space Grant Extension for Geospatial Science and Technology***

CSA, with the Oklahoma Space Grant Consortium, provides extension activities in geospatial science and technology to enhance general awareness and understanding of geospatial information resources for end-user applications at regional and local levels.

Geospatial Summer Institute Fellowships for Students

Symposium on Oklahoma Geospatial Information Technology

Geospatial Information Technology Training for Government Agencies



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