

Center for Advanced Spatial Technologies

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Center for Advanced Spatial Technologies website (<http://cast.uark.edu/>)

The Center for Advanced Spatial Technologies (CAST) focuses on application of geospatial technologies in research, teaching, and service. These technologies include geomatics, GIS, GPS, remote sensing, photogrammetry, geospatial software and systems design, interoperability, and large (multi-terabyte) geospatial databases.

Established in 1991, CAST is a unit of the Fulbright College of Arts and Sciences. CAST has a campus-wide focus, working with the departments of anthropology; architecture; crop, soil, and environmental science; biology; bioengineering; civil and industrial engineering; geosciences; entomology; and landscape architecture. Other related partners include the Environmental Dynamics Program, the Arkansas Water Resources Center, Mullins Library, and the Arkansas Archeological Survey.

CAST has been selected as a Center of Excellence by many corporations, including the Intergraph Corporation, Trimble Navigation Inc., the Oracle Corporation, Definiens Imaging, Sun Microsystems, Spatial Acquis, and PCI Geomatics. These and other corporate sponsors have provided more than \$22 million of in-kind support of the research teaching facilities of the center. The center has extensive hardware and software capabilities, including more than 100 high-performance workstations, multiple Linux, Windows XP and Solaris servers (combined seven terabyte of on-line disk), large-format plotters, mapping and survey-grade GPS, MSS instruments, spectroradiometers, terrestrial laser scanners, and an extensive inventory of software.

University of Arkansas undergraduate and graduate students have a wide range of geomatics courses available to them that utilize CAST facilities and laboratories. These courses, taken along with related courses in cartography, remote sensing, image interpretation, photogrammetry, surveying, and spatial statistics, provide the student with a range of career options. In addition to classroom instruction, CAST facilities are used by students in both undergraduate and graduate research projects. The internship program in Applied Spatial Information Technologies offers students an opportunity to gain hands-on experience in geospatial technologies.

CAST staff are engaged in research projects in a wide range of areas. A few recent research projects focused on areas such as the creation of a seamless, on-line spatial data warehouse; K-12 GIS education; soil survey by remote sensing; land-use/land-cover identification; remote sensing for historic resources; natural resources wetlands analyses; multi-sensor remote sensing for historic resources; and predicting red oak borer populations.