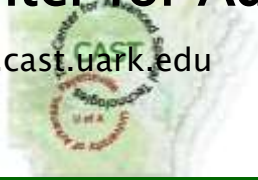


# Center for Advanced Spatial Technologies

www.cast.uark.edu



The Center for Advanced Spatial Technologies (CAST) is located in Ozark Hall on the University of Arkansas campus in Fayetteville. Its 20+ full-time research staff work closely with graduate and undergraduate students and faculty in many departments and focus on the application of geospatial technologies in research, teaching, and service. These technologies include GIS, GPS, remote sensing, photogrammetry, geodesy, geospatial software and systems design, interoperability, and large (multi-terabyte) geospatial data bases. CAST was established in 1991 and is a unit of the J. William Fulbright College of Arts and Sciences but has a campus-wide mission.



## Center Staff

The Center's staff members represent diverse backgrounds in areas such as electrical engineering, geology, computer science, remote sensing, photogrammetry, architecture, geodesy, archaeology, agronomy, landscape architecture, surveying, historic preservation, geography, forestry, wildlife biology, archaeology and the social sciences. By building upon the expertise of staff; the cooperation of the university community and state, regional, and local governments; the support of corporate sponsors; the assistance of federal agencies; and many others, CAST blends its focus on education, research, and public service to multiply the benefits of all these cooperative efforts. Each year, CAST staff members are involved in more than two dozen major research projects, training programs, and other cooperative efforts with a variety of governmental and business organizations.



## Research

Recent research projects have focused on areas such as geospatial data warehousing, interoperability and distribution, software development, multi-instrument data fusion, web-mapping, natural resources analyses, land-use/land-cover identification, remote sensing for historic resources, and the organizational and infrastructural processes relating to technology diffusion into the public sector.

## EAST Project

An important project at the Center is the Environmental and Spatial Technologies (EAST) Initiative. CAST has been involved with EAST since its founding, and the EAST Initiative now supports more than 200 EAST high school, representing 15,000 students and their communities in their efforts to use map and image data to solve real world problems.

## National Consortium for Rural Geospatial Innovations

The National Consortium for Rural Geospatial Innovations-Mid-South (RGIS) is one of eight regional centers throughout the United States whose mission is to eliminate the digital divide facing rural America by promoting the transfer of geospatial technologies to under-served rural areas. The RGIS program assists state, tribal, regional, and local governments, and non-profit and for-profit organizations in implementing advanced geospatial information technologies with a particular emphasis on rural, underserved groups and communities.



## University Courses

University of Arkansas undergraduate and graduate students have a wide range of geospatial courses available to them that utilize CAST faculties and laboratories. These courses, taken along with related courses in cartography, remote sensing, image interpretation, photogrammetry, surveying, and spatial statistics, provide the students 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.

## GeoStor

A critical aspect of any research and teaching program is access to data. GeoStor is an online data delivery system that allows any user, with access to the web, seamless availability to digital map data of any area in Arkansas with no subscription fee. The name *GeoStor* refers to a comprehensive, web-based geodata delivery system. GeoStor provides web access to a huge repository of geospatial data and allows easy search and retrieval of more than 525 seamless feature classes, representing more than two terabytes of data. GeoStor is a core element of the University of Arkansas Digital Library Project.

## Web Resources

Distribution of information over the world wide web is a key vehicle of communication to both the research community and the public. The CAST website ([www.cast.uark.edu](http://www.cast.uark.edu)) has more than 19,000 pages and has an average of 20,000 hits per day. The site is linked to almost 21,000 other sites and has received recognition from many sources including Ten.Links, About.Com, MIT Libraries, and many others. The site's *Arkansas Mapper* was among the first web-based interactive mapping systems.



## Private Sector Partners

The Center has extensive and mutually beneficial, long-term relationships with many major corporate partners. CAST has been designated as a *Center of Excellence in Mapping and Geo-Sciences* by Intergraph Corporation, a *Center of Excellence in Distributed Computing for Spatial Applications* by Sun Microsystems, a *Center of Excellence in Spatial Data Management* by Oracle, a *Center for Excellence in Remote Sensing and Geomatics* by PCI Geomatics, as well as Centers of Excellence or equivalents by Trimble Navigation, ESRI, Definiens Imaging, and Skyline Software. The Center works closely with both large and small businesses in a business incubator role, developing an educated consumer base and raising the visibility and accessibility of geospatial software and hardware solutions.



## Outreach

CAST staff regularly participate in, sponsor, and lead demonstrations, tours, talks, workshops, meetings, etc. Over 500 events occur each year.

## Facilities

The Center has some 7,500 square feet of space in multiple labs in Ozark Hall. The Center has an extensive computational capability including a SUN UltraEnterprise 4500, three UltraEnterprise 450s and an Enterprise 5000 with a combined total of seven terabytes of disk. In addition, there are six large Windows XP servers, more than 100 high performance desktop workstations, an extensive suite of peripherals and software systems, and full Internet 2 connectivity. The Center has a wide range of peripherals and significant research instrumentation including an Optech laser scanner, spectroradiometer, digital photogrammetric camera, Duncan MI4100 multispectral camera, and Trimble geodetic-grade and other total stations and GPS mapping units.

**About CAST:** The Center for Advanced Spatial Technologies (CAST) focuses on education, research, and service to the public, which forms the backbone of the CAST purpose and mission. CAST specializes in serving the academic community through its emphasis on university courses in Geographic Information Systems (GIS), Global Positioning Systems (GPS), and related technologies. CAST's research efforts, through multiple grants awarded each year, compliment and greatly benefit its educational and public service focus by allowing staff and students to stay on the leading edge of emerging technologies. CAST is also active in a wide range of services to the university, community, state, nation, and internationally. By building upon the expertise of the staff; the cooperation of the university community and state, regional, and local governments; the support of corporate sponsors; the assistance of federal agencies; and many others, CAST can blend its focus on education, research, and public service to multiply the benefits of all these cooperative efforts.

