CAGIS is an interdisciplinary research center that focuses on using advanced space-time theories, methods, and technologies in cutting-edge Geographic Information Science for complex geographical problem-solving.

**Location**

306 McEniry  
University of North Carolina at Charlotte  
9201 Univ. City Blvd.  
Charlotte, NC 28223  
Phone: 1-704-687-5963  
Web: [http://gis.uncc.edu](http://gis.uncc.edu)

**Contact**

Dr. Wenwu Tang  
Executive Director  
Email: WenwuTang@uncc.edu

Dr. Douglas Shoemaker  
Director of Research and Outreach  
Email: dshoema1@uncc.edu

[http://gis.uncc.edu](http://gis.uncc.edu)
Research Themes

Based on the synergistic coupling of spatiotemporal and computational thinking, major research themes of CAGIS consist of:

- **CyberGIS** for large-scale geographical problem-solving
- Land use/cover change and **sustainability** study
- Complexity theory and geospatial modeling
- **Big data** and space-time analytics
- Remote sensing, sensor networks, and volunteered geographic information
- Computational intelligence for **geocomputational modeling**
- Cartography and geovisualization driven by Internet
- **Open-source GIS**

International Laboratories

Partnered with International Cartographic Association (ICA) and the Open Source Geospatial Foundation (OSGeo), and NVIDIA, CAGIS has two international laboratories:

- Open Source Geospatial Laboratory
- GPU Research Center

Computing Resources

- High-performance computing cluster: **GEM** (64-CPU cluster), **JADE** (desktop grid), **Sapphire** (desktop grid; Windows)
- Large-memory workstation: **Diamond** (256G memory; Windows)
- Many-core GPUs
  - 1 NVIDIA Tesla K40 (2880 cores)
  - 1 NVIDIA Tesla K20 (2496 cores)
- 15 TB backedup network storage space
- 16 lab workstations
- 70'' flat LCD screen
- Access to advanced supercomputing resources from:
  - US NSF XSEDE
  - US DOE Open Science Grid
  - RENCI

CAGIS has unique strength in cutting-edge GIScience technologies and has intensive interest in their applications in alternative **spatially integrated domains**, including:

- Environmental studies
- Ecology
- Earth science
- Hydrology
- Spatial epidemiology
- Social science
- Transportation
- Urban regional analysis and policies.