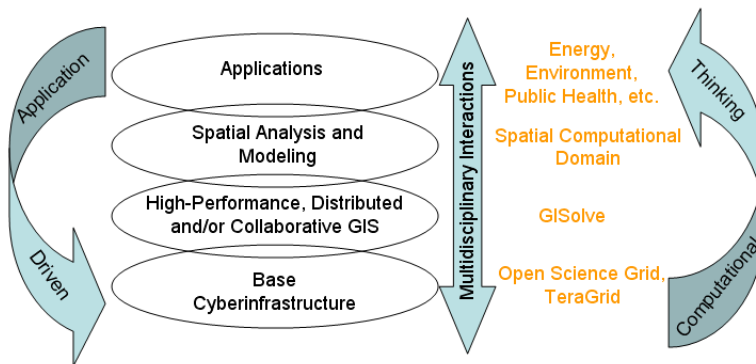


Towards Unifying Cyberinfrastructure, GIScience, and Spatial Analysis

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I am the founding director of the CyberInfrastructure and Geospatial Information Laboratory (CIGI) that is established as a multi-discipline and multi-institution virtual organization to advance spatial cyberinfrastructure and geospatial problem solving (see the following figure). Previously, I founded and led the GROW collaboration – the first cyberinfrastructure initiative within the state of Iowa higher education institutions.

CIGI – CyberInfrastructure and Geospatial
Information Laboratory / Virtual-Organization



I served as a co-investigator for the NSF (National Science Foundation) large ITR (Information Technology Research) project: iVDGL (international Virtual Data Grid Laboratory). Within this project, I led the development of the Open Science Grid Generic Information Provider software that enables the interoperability of the Worldwide Large Hadron Collider Grid and Open Science Grid. I was a visiting scholar at Lund University sponsored by the

NSF to collaborate with the NorduGrid project. I was the PI of the University of Iowa, and now is the PI of the National Center for Supercomputing Applications (NCSA) and University of Illinois at Urbana-Champaign in the Open Science Grid project that is jointly funded by the Department of Energy and NSF. I am serving as the Troubleshooting Coordinator of the Open Science Grid. Also, I am the chair of the At-Large Virtual Organizations Subcommittee in the Open Science Grid Council, the governing body of the Open Science Grid Consortium. I am the founding director of the TeraGrid GIScience Gateway project (based on the GISolve Toolkit, www.gisolve.org) that is supported in part by the NSF TeraGrid project and NCSA. I have served as a co-investigator for the TeraGrid Grid Infrastructure Group project in which I am leading the development of the SimpleGrid project. I am the PI for the TeraGrid resource allocation award "Extending and Sustaining GISolve as a GIScience Gateway Toolkit for Geographic Information Analysis". I am a Co-PI for the NSF project "Troubleshooting Large Scale Computing Grids with Machine Learning Techniques". Through the projects and support summarized above, I have served various leadership roles in the two arguably most advanced cyberinfrastructure projects worldwide – the NSF TeraGrid and the Open Science Grid; and published over 30 peer-reviewed articles and book chapters in the areas of parallel computing; distributed systems; high-performance, distributed, and collaborative GIS and spatial analysis; and cyberinfrastructure-based geospatial problem-solving environments (e.g. [1, 2, 3, 4]).

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