

GEOSPATIAL RESEARCH AND EDUCATION LABORATORY

Organizational Handbook
and
Standard Operational Procedures
(Version 1.0)

Department of Geography & Environmental Planning
Towson University

Introduction

The Geospatial Research and Education (GRE) Laboratory is an integral component of the Department of Geography and Environmental Planning. As such, it falls under the administrative responsibilities of the Chairperson of the Department acting on behalf of the faculty. The Chairperson of the Department, in turn, is responsible to the Dean of the College of Liberal Arts. The mission, objectives, values, and vision of the GRE Laboratory place it firmly within the academic sector of the Department and College.

Mission

The mission of the GRE Laboratory is to serve the faculty, staff, and students of Towson University and the people of Maryland and the Mid-Atlantic region by providing a focal point for geospatial research, education, and outreach activities. As part of this mission, the GRE Laboratory provides state of the art facilities and training to prepare today's students for future job opportunities in the geospatial workforce. In addition, the GRE Laboratory endeavors to offer state of the art hardware, software, data, facilities, and literature to support the research and education agendas of faculty, staff, and students regardless of their academic discipline.

Services

The GRE Laboratory provides geospatial research, education, and outreach activities including but not limited to cartographic visualization, environmental inventory and analysis, geographic education, GIS education, hazards analysis and risk assessment, homeland security and emergency management, land use/land cover mapping and analysis, natural resources planning and management, outdoor recreation planning and management, remote sensing and digital image processing, urban social geography, and urban sprawl and land use planning. Services available from the GRE Laboratory include:

- Conducting multidisciplinary research where the analysis and visualization of geospatial data is a component of the project.
- Conducting research projects that involve quantitative analysis of geospatial databases (including the use of advanced geostatistical and data mining techniques).
- Developing land cover and related maps through the use of remotely sensed imagery and digital image processing techniques (including classification and regression trees, neural networks, and object-oriented image classification).
- Building and interfacing spatial models with ArcGIS 9 (Environmental Systems Research Institute) through the use of the Spatial Analyst Extension and Model Builder.

- Providing advice and assistance on the use of advanced GIS software, including selected ArcGIS 9 Desktop Extensions (3D Analyst, Business Analyst, Geostatistical Analyst, Network Analyst, Publisher, and Spatial Analyst).
- Providing advice and assistance on cartographic visualization techniques, "best practices" for GIS-based map design and production, and developing maps for special populations particularly the blind.
- Conducting classroom workshops on various geospatial topics, technologies, and techniques.
- Conducting GIS workshops for K-16 teachers and developing tutorials and other pedagogical materials in support of GIS education.
- Undertaking geographic education projects, such as developing lesson plans and other instructional materials, in support of K-12 teachers in Maryland and around the world.
- Providing "GIS-savvy" external graduate assistantships for government agencies and businesses.

Objectives

The objectives of the GRE Laboratory are:

- To create and apply geographic knowledge and geospatial technologies to improve our understanding of the physical and human world and to solve environmental and social problems facing society.
- To foster interdisciplinary research by faculty, staff, and students using geospatial technologies.
- To promote geographic information systems (GIS) education across the K-16 curriculum.
- To develop partnerships with government agencies, non-governmental organizations, businesses, and schools interested in geospatial research and education.
- To conduct grant and contract research on projects related to geospatial research and education.
- To engage undergraduate and graduate students in meaningful "hands-on" service-learning and internship experiences.

- To provide undergraduate students with basic GIS skills to ensure career success in the 21st century workforce.
- To create opportunities for public outreach by faculty and students.
- To support the Albert S. Cook Library in serving as a repository of information on geospatial technologies to the University and community.

The GRE Laboratory also provides assistantships for a limited number of graduate students. Students working in the Laboratory have the opportunity to work on "cutting edge" projects using the latest hardware and software with the advice and assistance of a faculty mentor.

Values

In any organization there are "core values" that guide the way the organization makes decisions. The core values of the GRE Laboratory are:

- **Inquiry and Knowledge.** Intellectual growth is at the heart of the GRE Laboratory's mission. We are committed to fostering intellectual inquiry in all its forms--empirical, theoretical, and aesthetic--and to developing the capacity for thoughtful reasoning.
- **Engagement and Application.** The GRE Laboratory is committed to partnerships focused on applying geospatial knowledge and expertise to address the complex issues facing government agencies, non-governmental organizations, businesses, and schools.
- **Excellence.** The GRE Laboratory emphasizes excellence in all of its research and education opportunities, programs, and services. We recognize that excellence is not a destination but a persistent striving for the very best in everything we do.
- **Leadership.** The GRE Laboratory is guided by an ethic of leadership and service that recognizes the importance of identifying, articulating, and responding to the interests and needs of government agencies, non-governmental organizations, businesses, and schools in Maryland and the Mid-Atlantic region.
- **Character.** The GRE Laboratory aims to create, through our work and our relationships, an environment that cultivates individual virtues and integrity. To serve our diverse communities, we must first be a community that extends mutual respect and regard for all individuals and protects their right to free expression.

- Stewardship. Careful shepherding of our human, financial, capital, and intellectual resources is necessary for us to realize our values.
- Teamwork. The strength of the GRE Laboratory is the initiative and individual creativity of the faculty, staff, and students. We also value a common commitment to achieving the Laboratory's goals, a collective spirit, and a dedication to teamwork that transcends individual concerns.

Vision

The GRE Laboratory will endeavor to involve faculty, staff, and students from the Department of Geography and Environmental Planning and other academic departments in jointly developing research proposals for grants and contracts involving geospatial research and education. The Research Fellow who takes the lead in developing a proposal will serve as principal investigator for the proposal. In other words, the GRE Laboratory will function as a consortium, or collaboratory, of faculty members involved in geospatial education and research. Currently, an effort is underway to identify faculty in other Towson University academic departments to participate in interdisciplinary geospatial research and education projects and to serve as Research Fellows of the GRE Laboratory. For interdisciplinary projects, grant or contract proposals submitted will indicate the relative proportion of each faculty member's involvement so that all costs (including indirect costs) can be distributed as appropriate by the Office of University Research Services.

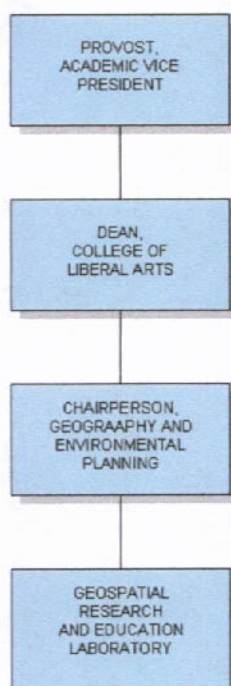
Every effort will be made to ensure that the GRE Laboratory and the Center for Geographic Information Sciences (CGIS) do not compete for potential grants or contracts. The mission of CGIS is to perform data conversion, develop GIS databases, develop custom interfaces or standalone applications for desktop computers, develop Internet mapping applications, create Web sites, conduct hands-on training courses, and provide on-site staffing. Although originally founded by the Department of Geography and Environmental Planning, CGIS is now an administrative unit within the University's Division of Economic and Community Outreach. When appropriate, the Chairperson of the Department and/or the Director of the GRE Laboratory will meet with the Director of CGIS to discuss projects or issues of mutual interest.

Organization of the Geospatial Research and Education Laboratory

The Chairperson of the Department of Geography and Environmental Planning will, with the advice and consent of the faculty, and the approval of the Dean of the College of Liberal Arts, appoint a faculty member of the Department to direct the GRE Laboratory. The Director will report directly to the Chairperson of the Department, the

Dean of the College of Liberal Arts, and the Provost, and not to any other University officer within or outside the academic sector of the University.

The Geospatial Research and Education Laboratory will be organized as a component of the Department of Geography and Environmental Planning in the following manner:



Director of the Geospatial Research and Education Laboratory

The Director of the GRE Laboratory will have the responsibilities and authority indicated below. The Director of the GRE Laboratory will carry out these responsibilities consistent with the policies of Towson University and the University of Maryland system regarding grants, contracts, procurement, budgeting, and employment.

- To write proposals for, procure, and oversee grants and contracts for geospatial research and education projects.
- To engage faculty from other academic departments, including faculty from academic departments in other colleges, in geospatial research and education projects and to serve as Research Fellows of the Laboratory.
- To provide faculty from other academic departments with support in the use of geospatial technologies.

- To negotiate agreements with outside agencies for projects falling within the mission and goals of the Laboratory.
- To interview, hire, and supervise contingent contract employees, and undergraduate and graduate student employees.
- To manage any budget allocated to the Laboratory through the Department or from grants and contracts received by the Laboratory.
- To provide periodic financial reports to the Chairperson of the Department.
- To prepare an annual report that describes the activities of the Laboratory including grants and contracts awarded, faculty and students served, projects completed, etc.
- To meet with the Chairperson of the Department on a period basis to discuss current activities and to seek prior approval for all major financial decisions.

The Director of the GRE Laboratory will be appointed with the following conditions:

- A term of five (5) years with re-appointment contingent upon the approval of the faculty and Chairperson at the department level and of the Dean of the College of Liberal Arts.
- Responsibility to offer at least four (4) sections/courses per academic year along with other Department responsibilities assigned by the Chairperson of the Department. Inasmuch as the director of GREL acts to obtain grants and research contracts, the director will also have responsibilities related to student research projects, internships, independent studies, and graduate student research (thesis and non-thesis) issuing from said grants and contracts.
- Evaluation of the GRE Laboratory Director position will be included as part of the Department's annual review for promotion, tenure, and merit. The Annual Review is subject to review and approval by the Dean of the College of Liberal Arts. Should the review raise substantive concerns about the Director's handling of responsibilities or effectiveness in the position, the Dean may remove the Director after consultation with the Chairperson and require a new appointment.
- Workload will be determined based on the director's Annual Review. The expectation is that the director's productivity, as evidenced in the Annual Review with respect to scholarship, service, and external funding, justifies a reduced teaching load.

Location and Resources

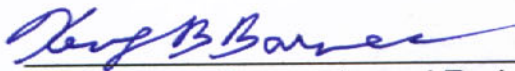
The Geospatial Research and Education Laboratory will be located within the Department of Geography and Environmental Planning. The department is obligated to provide physical space and resources for the Laboratory to the degree that it is capable of so doing. The Department and the College officially sanction the Geospatial Research and Education Laboratory and recognize it as an entity of the Department and College.

Status of This Handbook

In providing organizational guidelines and standard operating procedures for the GRE Laboratory, this Handbook describes the status and intent of the Laboratory, as well as responsibilities and expectations for the Director. The parties signing below do so in good faith, with the understanding that nothing in this document creates any contractual or legal obligation in respect to the GRE Laboratory. The provisions of the Handbook may be changed at any time by agreement between the Chair, the Dean, and the Provost.

Approval

This document was approved by the faculty of the Department of Geography and Environmental Planning on _____.

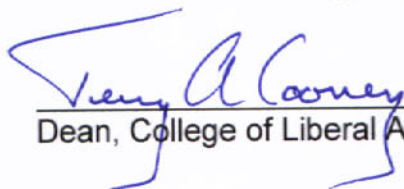


 Chairperson, Geography and Environmental
 Planning

3/16/07

 Date

This document was approved by the Dean of the College of Liberal Arts.

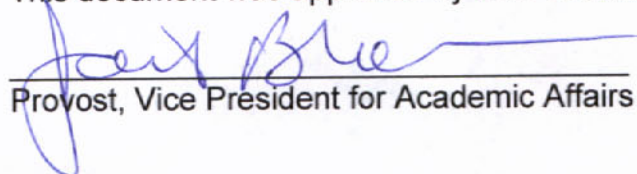


 Dean, College of Liberal Arts

3/16/07

 Date

This document was approved by the Provost and Vice President for Academic Affairs.



 Provost, Vice President for Academic Affairs

3/19/07

 Date