ACTION ITEM: Approval of the “Request to Establish” the following institutional Centers and Institutes:

• Center for Geographic Information Science and Health

BACKGROUND INFORMATION:

Regulation 400.5 of The University of North Carolina Board of Governors allows the UNCG campus to approve establishment of Centers and Institutes. A proposal from the proposed center is attached. This center will further the University’s achievement of its research goals, while providing a fertile environment for the development of new knowledge, the dissemination of knowledge to the academic community and the public, and/or significant and vital outreach activities.

RECOMMENDED ACTION:

It is recommended that the Board of Trustees of The University of North Carolina at Greensboro approve the establishment of this institutional Centers and Institute.

A. Edward Uprichard
Provost and Vice Chancellor for Academic Affairs

Attachment
I. General Information

Proposed Name of Center/Institute:
The Center for Geographic Information Science and Health (CGISH)

Date Approval to Plan granted (attach a copy of approval letter): See attached

Organizational structure

• Center
  • The center will be university-wide and report to the Chief Research Officer.

Proposed Status

• Institutional (UNCG campus only)

Type of Center/Institute

• Research

II. State the proposed mission of the center or institute.

a. The proposed mission of the Center is to use geospatial technology for the understanding of issues and problems related to health and society.

III. Explain how the proposed name of the center or institute accurately reflects the scope of the mission of the center or institute.

a. The term “Geographic Information Science” reflects four highly recognized and accepted technical fields in Geography. These fields include Geographic Information Systems (GIS), Remote Sensing, Cartography, and Quantitative Methods. The interrelated geospatial techniques and concepts from each of these fields will be used to solve, visualize, and understand the spatial relationships of health issues and problems including environmental health, epidemiology, and disaster preparation and response.

IV. Describe the relevance of the mission of the proposed Center/Institute to the UNCG mission, including any impact upon the existing academic departments, school, centers, and institutes.

a. The Center’s mission promotes the University’s mission in that it provides a unique research environment for understanding health-related and geographic issues through the utilization of concepts and applications in Geographic Information Science (GISci) while giving students an arena for active learning and discovery. An exemplary research environment will be strongly promoted, creating an atmosphere where students will have opportunities to acquire valuable, unique and marketable skills. These characteristics not only reflect UNCG’s mission, but they also provide the keys to building a national reputation.

V. Provide a vision statement for the proposed center/institute.

a. The Center for Geographic Information Science and Health at the University of North Carolina Greensboro is a research center, committed to improving the everyday lives of humankind through innovative and collaborative geospatial and health research.
VI. Provide a five-year list of the specific goals of the proposed center/institute.

a. **Year 1**
   i. Establish Center
      1. Hire Personnel
         a. Director
         b. Lab Manager
         c. Graduate Student
         d. Work Study
      2. Establish network of collaborators
         a. Dr. Mark Smith
         b. Dr. Gary Schwartz
         c. Mr. Rick Edwards
      3. Build website
      4. Identify space
      5. Generate public awareness
         a. Create pamphlets and cards
         b. Create media exposure
   ii. Seek external Funding
      1. Submit $500,000 with a 20% anticipated success rate

b. **Year 2**
   i. Seek external Funding
      1. Work on funded projects
      2. Submit additional $1,000,000 in proposals with a 20% anticipated success rate
   ii. Continue to develop relationships with collaborators
   iii. Identify new funding sources
   iv. Fund one graduate student

c. **Year 3**
   i. Seek external Funding
      1. Work on funded projects
      2. Submit additional $1,500,000 in proposals with a 20% anticipated success rate
   ii. Continue to develop relationships with collaborators
   iii. Continue to identify funding sources
   iv. Fund two graduate students
   v. Evaluate success and direction

d. **Year 4**
   i. Seek external Funding
      1. Work on funded projects
      2. Submit additional $1,500,000 in proposals with a 20% anticipated success rate
   ii. Evaluate personnel needs and hire accordingly
   iii. Continue to develop relationships with collaborators
   iv. Continue to identify funding sources
   v. Fund three graduate students
   vi. Evaluate success and direction

e. **Year 5**
   i. Seek external Funding
      1. Work on funded projects
2. Submit additional $2,000,000 in proposals with a 20% anticipated success rate
   ii. Evaluate personnel needs and hire accordingly
   iii. Continue to develop relationships with collaborators
   iv. Continue to identify funding sources
   v. Expand research areas where opportunities arise
   vi. Evaluate success and direction
   vii. Fund four graduate students

VII. Describe how productivity will be evaluated.

a. Productivity will be evaluated in terms of funding success, published research articles from activities, the number of supported students, and students’ success in obtaining gainful employment from their learning experience at the Center.

VIII. If relationships with the external community are a part of the vision of the propose Center/Institute, describe how this will occur and how its effectiveness will be measured.

a. Please see letters of support from external sources.

b. Faculty members in the Department of Geography have developed and continue to develop key external relationships with the community, businesses, universities, and public agencies. We have or are in the process of conducting joint research with the follow:

   i. Dr. Mark Smith at the Guilford County Public Health Department - Health Surveillance and Analysis Unit,
   ii. Steve Ramsey of the Public Health Regional Surveillance Team (PHRST-5) in Greensboro,
   iii. Dr. Gary Schwartz, Department of Cancer Biology and Public Health Science at the Wake Forest University School of Medicine, and
   iv. Mr. Rick Edwards, President of CityScape Consultants located in Raleigh, NC.

Dr. Smith has been very successful at obtaining funding from the Centers for Disease Control. As part of our joint efforts, we received an award for $70,000 in the summer of 2005 to conduct Geographic Information Systems (GIS) workshops that focused on public health applications. This opportunity allowed us to network with 80 Public Health Regional Surveillance Team (PHRST) administrators throughout the state (e.g., Steve Ramsey, PHRST-5 in Greensboro). These contacts are extremely valuable and will help form the Center’s future. The project went so well that contacts to officials at Federal Emergency Management Agency (FEMA) and Homeland Security were made by participants, resulting in a request for Dr. Smith to scale his project to the regional and national level. Dr. Smith has expressed interest in our participation in these subsequent activities, but strongly suggested that we develop a Center to handle these forthcoming large scale collaborative projects (see letter of support).

Dr. Schwartz has also been very successful in obtaining external funding. His specific area of research involves correlating factors to cancer incidence and mortality rates. To date, he manages approximately $5,000,000 in grants from the National Institutes of Health (NIH). Dr. Schwartz’s work often involves a heavy spatial component (e.g., the relationship between skin cancer and latitude). He has expressed strong interest in using GIS to analyze the spatial distribution of the cancer incidence rates and their causes. Dr. Rick Bunch is currently collaborating with Dr. Schwartz on a project to identify “hot spots” or “clusters” of cancer incidence rates in efforts to relate them to causes. Dr. Schwartz clearly recognizes the power of GIS and has expressed strong interest in collaborating with a Center focused on GIS and health (see letter of support).
Mr. Edwards has been working with the Department of Geography for nearly two years (see letter of support). He has funded our research projects on visualizing cellular tower coverage using GIS. He has thus far provided UNCG with approximately $45,000 in funding and has stated that he will continue annual funding (approximately $20,000 per year). At first blush, it would appear that this type of activity does not fit within the scope of the proposed Center. However, a large portion of CityScape’s work involves the proximity of cellular tower locations to human populations and the potential impacts of structural design on health.

The Center will seek large scale multidisciplinary research projects that will require expertise from many fields. UNCG currently has a number of departments (e.g., Public Health Education, Biology, Exercise and Sports Science), schools (e.g., School of Nursing, School of Health and Human Performance, School of Human Environmental Sciences), centers (e.g., Center for Health and Vulnerable Populations, Center for Youth, Family and Community Partnerships, Center for Women’s Health and Wellness), and institutes (e.g., Institute for Health, Science and Society) that dovetail nicely with the scope of the Center.

The past and current activities of the Department of Geography with the aforementioned communities not only present great opportunities, but also illustrate a solid foundation for a Center that focuses on geospatial technologies and health. To further illustrate the value of geotechnology, please see the attached Nature article outlining the U.S. Department of Labor’s recognition of “geospatial technologies as one of the three most important emerging and evolving fields, along with nanotechnology and biotechnology” (Nature 2004, pg. 376).

IX. Provide information about the proposed director.
   a. The proposed director is Dr. Rick Bunch (Ph.D. 2000), Assistant Professor in the Department of Geography at UNCG. Dr. Bunch’s expertise is in Geographic Information Science, with specialties in GIS and Cartography. Dr. Bunch teaches GIS and Cartography at UNCG. He directed the Center for Geographic Information Science at Central Michigan University for two years before coming to UNCG. In less than two years at UNCG, Dr. Bunch has generated approximately $135,000 in funding and published four articles. He also has a co-authored GIS programming book currently under contract.

X. Describe any proposed advisory or policy boards
   a. It is anticipated that an advisory board of at least six individuals including the director will be developed to offer guidance on the direction of the center and to generate ideas for large scale collaborative research. Three interested individuals will come from UNCG and three from outside the university.

XI. Attach the proposed center/institute’s organizational chart.
   a. See attached

Budget (see attached budget sheet)
   a. Personnel
      i. Director

   Justification
Funds are requested to support a 2-course buyout during the academic year. The Director will oversee all Center activities, generate proposals and ideas, network with collaborators, and manage personnel. A summer salary for the Director is also requested. These funds are crucial to support continuity of work related to the Center, including personnel management, project management, and proposal generation during the summer months.

ii. Lab Manager

*Justification*

Funds are requested to support a full-time lab manager. He/she will be responsible for handling the day-to-day operations of the Center, interfacing with the public, and providing technical project assistance. This individual will be expected to have at least a Master’s degree. A competitive base salary of $50,000 will be needed to hire a highly qualified individual.

iii. Graduate Student

*Justification*

Funds in the amount of $15,000 are requested to employ a graduate for 20 hours per week during the academic year. The graduate will work on projects and provide technical expertise.

iv. Equipment

1. Hardware
   a. $8,000 (Duplex Color Laser Printer)
   b. $8,000 (2 high-end computers)
   c. $20,000 (Roller scanner)

*Justification*

Funds in the amount $36,000 are requested to support hardware needs. The duplex color laser printer will be necessary for printing high quality graphics and maps as well as general day-to-day printing needs. Two high-end computers will be needed to conduct projects which will use computationally intense software packages such as ArcGIS and Erdas Imagine. The University holds site licenses for each of these packages. Funds in the amount of $20,000 are requested to purchase a quality roller scanner which will be needed to conduct projects that involve hardcopy maps.

v. Operating Expenses

1. Funds in the amount of $10,000 are requested to support daily operating expenses such as office supplies, paper and ink cartridges.

vi. Travel Funds

1. $3,000

*Justification*
Funds in the amount of $3,000 are requested to support travel related to Center activities. A major portion of generating external funding is personal contact which will involve traveling to locations for meetings.

b. Anticipated Funding

A tiered approach to funding the Center is proposed. For the first year, one-hundred percent funding from the University is requested, seventy-five percent for year 2, fifty-percent for year 3 and twenty-five percent thereafter (see attached budget).

External funding that will immediately be applied to the Center will be the year-to-year commitment from CityScape Consultants (at least $20,000 per year). These funds will contribute towards supporting a graduate student. Additional external funding will come in the form of successful proposals.

XII. Explain immediate space needs and project space needs for the next five years.

a. A room approximately 15 X 20 will be needed to house personnel and equipment. This may change in subsequent years, depending on the amount of work generated and the expansion of personnel and equipment.

XIII. Describe how the website will be maintained.

a. The website will be developed and maintained by the Lab Manager as needed. It will be housed on an existing server shared by the Department of Geography and the Center.