Life Outside the Bubble: Placing Universities in Physical Context  
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ABSTRACT
An individual’s choice of graduate school often dramatically changes the course of the individual’s life. That change comes not only from the resources, faculty, and fellow students at the institution, but also from the opportunities for new and unique experiences provided by the school’s surroundings. However, finding information about and exploring those contextual resources often proves more difficult than locating facts and figures about the physical, financial, and human resources of a university itself. While a host of guidebooks provide easy access to that information, those resources often gloss over in a brief paragraph the surrounding environs where one actually lives a significant portion of his or her life. This project serves as a template for using geographic information systems to address those challenges, and provide a coherent, and easily assimilated view of the resources surrounding universities. To achieve that value, the project focused on the outdoor resources available for recreation and research surrounding 11 graduate schools in the eastern United States offering degrees in forest ecology and Furman University, for reference purposes. From relevant publicly available data, ArcGIS 9.0 was used in a systematic fashion to extract and organize the data pertinent to each individual. The program was then used to produce maps of each area allowing direct comparison of all the schools. The maps indicate the settings of the schools vary widely in climate, ecological heterogeneity, urbanization, and access to public parklands. Using national census data and similar processes, the project could be expanded in the future to produce cultural and socioeconomic contexts as well.

METHODS
An internet search engine, Google, was used to locate publicly accessible data sets, with formats compatible with ArcGIS, describing aspects of the states and towns that support the subject universities. ArcCatalog software was used to preview the data, and check for relevancy. Upon review, the outdoors related data was determined to have greater usefulness, and became the basis for further project work. city specific data was retained, but generally had greater bearing on cultural context, and two schools were dropped from the study due to paucity of data. Those data sets, with formats compatible with ArcGIS, describing aspects of the states and towns that support the subject universities. ArcCatalog software was used to preview the data, and check for relevancy. Upon review, the outdoors related data was determined to have greater usefulness, and became the basis for further project work. city specific data was retained, but generally had greater bearing on cultural context, and two schools were dropped from the study due to paucity of data.

RESULTS/DISCUSSION
Two maps of the eastern United States, twelve state maps with data pertaining to specific universities, a county map for one university, two relief maps of local terrain with overlaid aerial photographs, and one summary table were produced within a series of ArcMap and ArcScene projects. Despite the fact that all of the institutions examined in this study reside in the eastern United States and all offer degrees in forest ecology, except the reference school Furman University, significant differences exist in the natural settings of the schools. Annual precipitation ranges from 27.5” at the University of Minnesota to twice that figure at Furman University. Similarly, urbanization around the schools ranged extensively from minimal at the University of Maine to wide spread at Harvard and Yale. Interestingly, the areas of parks and forests did not show a strong inverse correlation with urban area; the University of Tennessee lies within above average urbanization, but has the most extensive public land in the vicinity of any of the schools examined. Additionally, the environs of the University of Maine contain both little urbanization, and a little park land. Much of that information could have been gleaned from summary statistics, but the maps also reveal the spatial patterns of those outdoor resources. The settings of the schools varied in both degree of clustering of park areas and heterogeneity of ecoregions. In general, fewer ecoregions exist in the vicinity of the schools located closest to the coast. The limited TIN analysis also indicated substantial variation in local environment with Yale having a much more complex topographic setting than the University of Minnesota. Overall, Yale and Harvard appear to have the fewest natural resources while Furman, the University of Tennessee, and the University of Georgia have the richest surroundings.

ACKNOWLEDGEMENTS
The aid from Dr. Suresh Muthukrishnan at several points was integral to the completion of this project. Likewise, the numerous pointers from members of the EES 24 class alleviate many headaches encountered throughout the project. Sources for the data include the National Park Service NR-GIS data server, the Minnesota MetroGIS Datafinder, the Connecticut MAGIC Geo-Spatial Data Resources, the Georgia Data Clearinghouse, the Office of Geographic and Environmental Information (MassGIS), Commonwealth of Massachusetts Executive Office of Environmental Affairs, the Michigan Geographic Data Library, the Appalachian Trail Conference, the National Atlas of the United States of America, and the Minnesota Geographic Data Clearinghouse.

APPLICATIONS and FURTHER STUDIES
Cultural and socioeconomic resources represent a natural extension of this project. The national census provides much of the necessary data for analyzing the civil settings that college towns produce. Additional information for understanding the human context of schools may originate with city governments. Regardless of which particular data sources are chosen, future studies should determine their sources of data and have clear goals and means of evaluation prior to beginning the research to avoid many of the obstacles encountered in this project.

While conceived of as an aid for graduating college seniors, a high school senior could just as easily use this project to help choose an undergraduate institution to attend. Even a student who has already chosen schools to visit could use this information to optimize campus visits. More generally, analogous procedures could be used in planning vacations or even as the basis for a travel agency. Inventing the process, universities could use the information to highlight the advantages the school’s location offers, and thus gain a major recruiting tool.