

10 October 2000

Technology Fellows Program
Associated Colleges of the South Technology Center
Southwestern University Box 7385
Georgetown, TX 78626

Ladies and Gentlemen:

I attach my application for a Spring-Summer 2001 ACS Teaching with Technology Fellowship. I intend to develop course materials and technological applications for a Geographic Information Systems (GIS) course on the redistricting process. The timing is ideal because, with the release of 2000 census data in March, the states will embark on the decennial redistricting process. The goal of the course is to expose students to the literature and research on voting and redistricting and then allow them to undertake a redistricting project on their own, using ArcView. Thus, they will take away not only an appreciation for the intricacies of an ongoing political battle but also a basic, working knowledge of GIS technology.

My application form, proposal and c.v. are attached. Please do not hesitate to contact me if you require additional information. Many thanks.

Sincerely,

Mark E. Rush
Associate Professor of Politics

Project Title: GIS Applications in Politics: The 2000 Redistricting in Virginia
Mark E. Rush, Department of Politics, Washington and Lee University

I am developing this course for our Spring, 2001 term. The course will follow the format of one of our natural science lab or field research courses and therefore will entail both a reading seminar and a GIS laboratory component.

Background

The United States is about to embark on its decennial reapportionment process. This is comprised, broadly, of two phases. First, based on census information that will be released to the states in March, 2001, the representation of each state in the Congress will be adjusted to reflect population changes that have occurred in the past decade. Once the number of congressional seats is established for each state, the respective state legislatures will then redraw the boundaries of their congressional districts to reflect whatever seat gains or losses occurred as a result of the reapportionment. Even if states retain the same number of seats (as census projections indicate will happen with Virginia), congressional district boundaries will still have to be adjusted to ensure that their populations are equal.¹

In addition to the Constitutional mandate of drawing equipopulous legislative and congressional districts, states are also required to adhere to the requirements of the Voting Rights Act, as Amended in 1982, which states that the electoral process must be administered so that minority voters have an opportunity to elect representatives of their choice.²

The United States Department of Justice has interpreted the VRA as requiring states to draw legislative and congressional districts in a manner that would allow pockets of minority voters in the state to cohere and, if they so desired, function as an electoral majority. Certain states (such as Virginia) have been subject to the “preclearance” provisions of Section 5 of the Voting Rights Act for 35 years. When the Act was originally passed, it placed particular states (in which minority voting rights had been denied) under this preclearance provision. As a result, any changes made to the electoral process in those states must receive the approval of the voting rights division of the Justice Department.

This process, coupled with the Justice Department’s reading of the VRA, has put “covered” states under enormous pressure to draw as many “majority-minority” districts as possible. In order to do so, states have had to draw bizarrely shaped districts such as those drawn in North Carolina. As a result, the districting plans have been challenged by individual voters who claim that the states have been forced, unconstitutionally, to draw racially “gerrymandered” maps in violation of the 14th Amendment.³ In response, the Supreme Court has ruled that there are limits to the lengths states may go in drawing

these districts. These districts have consequently become a lightning rod of political controversy.

Prior to the advent of GIS technology, the process of redistricting was incredibly difficult due to the intricacies of cartography and the complexity of census data. However, two events have made the process much more accessible (though no less complex). First, the advent of user-friendly GIS technology such as ArcView makes it quite easy to learn the basics of mapmaking or, at least, the visual display of any data that can be organized geographically (such as demographic and electoral data). Second, the U. S. Census Bureau has worked with the individual states to develop a new set of census tracts that conform to the states' political subdivisions. This will ease the process of linking local political data with demographic data generated by the Census Bureau.

The result is that state legislators and professionals working in the offices of the secretaries of state now have a much easier time drawing and adjusting new district boundaries. So will every interest group. Accordingly, the advent of the new GIS technology will both simplify the actual process of redistricting while making it much more politically contentious because many more people, including both students and professors of political science, will be able to get involved and draw district maps that meet their own political agendas.

Goals of the Course

This course will expose students to the literature concerning voting rights and redistricting and engage them in an interactive, group-based project in which they will use the new census data to draw a congressional district map for the state of Virginia that conforms to the criteria set forth by the Voting Rights Act and the Supreme Court. They will thereby gain insights not only into the political realities of the reapportionment and redistricting process, but also the practical problems of organizing a polity in conformity to controlling political standards and norms.

To draw the new maps, students will learn ArcView and, if possible, AutoBound, a special redistricting program developed by one of ESRI's collaborators⁴. Working in small groups, students will develop own congressional district maps of Virginia and maintain an online course portfolio in which they keep a log of their difficulties and successes in drafting their maps to conform to various political and geographic criteria. As well, they will log their reactions to the maps drawn by the other student groups. As a final touch, I have already arranged to have two Voting Rights experts, Edward Still⁵ and Robert Richie⁶ visit and critique the students' maps. The end result for each group will be to draw a map that satisfies as many criteria as possible (e.g., preserving existing political boundaries, promoting minority representational opportunities, etc.).

Teaching Enhancement and Research

This course will allow me to enhance courses I already teach on Electoral Law, Elections and Democracy and, Statistics. As well, this particular redistricting application ties in directly to my ongoing research on the impact of redistricting in the United States and other countries and issues of electoral systems and electoral reform in general (c.v. attached).

Sharing of Results and Collaboration

For the purposes of sharing the results with colleagues at Washington and Lee and other institutions, I shall work with our Instructional Technology Specialist, John Blackburn to develop a course website from which the student groups' logs and maps will be accessible both on and off-campus.

The new course will be evaluated in the 2001-02 academic year as a model for, and possibly as a component of, the Washington and Lee Teaching Portfolios pilot project, funded by the Andrew W. Mellon Foundation. Further, this new course will serve as a general model for those at W&L and elsewhere in the ACS interested in putting sophisticated new geographic software tools in the hands of students in non-science disciplines.

Finally, the course will provide politics majors (and any other student interested in the course) a valuable, practical skill that is applicable across many disciplines. In this respect, the course will compliment similar new courses being developed by my W&L colleagues in Geology (David Harbor) and Anthropology (Hugh Blackmer).

I will develop this into a regular course. Thanks to the unique opportunity provided by our 6-week spring term, I will be able to devote myself full time to developing the plan of instruction and class website. While the actual appeal of the redistricting issue will wax and wane depending on the proximity of the census, the course will maintain its appeal both as a unique political science "lab" experience and as an ongoing part of our nascent GIS program at Washington and Lee University.

Notes

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1. The United States Supreme Court ruled in *Reynolds v. Sims* (377 U.S. 533, 1964) that the equal protection clause required congressional and state legislative districts to be equipopulous so that all individuals would have the same voting power.
 2. The text of the Amended Section 2 of the Voting Rights Act reads:
 - I. A. No voting qualification or prerequisite to voting or standard, practice or procedure shall be imposed or applied by any State or political subdivision in a manner which results in a denial or abridgement of the right of any citizen of the United States to vote on account of race or color...as provided in subsection (b) of this section.
 - II. B. A violation of subsection (a) of this section is established if, based on the totality of circumstances, it is shown that the political processes leading to nomination or election in the State or political subdivision are not equally open to participation by members of a class of citizens...in that its members have less opportunity than other members of the electorate to participate in the political process and to elect representatives of their choice....*Provided* That nothing in this section establishes a right to have members of the protected class elected in numbers equal to their proportion in the population.
 - III.
 3. See, e.g., *Shaw v. Reno* (509 U. S. 630 (1993)), *Miller v. Johnson* (515 U. S. 900 (1995)), *Bush v. Vera* (517 U. S. 952 (1996)).
 4. ESRI (<http://www.esri.com>) is a GIS software company headquartered in Redlands, California. It has offices throughout the United States; a Business Partner Program with more than 1,000 developers, consultants, resellers, and data providers; and a network of international distributors conducting business in more than 189 countries. It also runs extensive training programs (both live and online) for use of its products.
 5. Ed Still is director of the Lawyers' Conference for Civil Rights Under Law in Washington, DC. He has litigated numerous Voting Rights Act lawsuits in Alabama and has written extensively on electoral law and electoral reform.
 6. Rob Richie is Executive Director of the Center for Voting and Democracy in Washington, DC. The Center studies different aspects of electoral reform and advocates progressive changes such as conversion to proportional representation. Website: <http://www.igc.apc.org/cvd/>.