

Proposal for ACS Information Fluency Grant

Title: Integrating GIS into the Liberal Arts Curriculum: Replicating a Successful Program

Contact Names:

Carol Ekstrom
Rhodes College
Dept. of Physics (Geology)
(901) 843-3089
cekstrom@rhodes.edu

Steve Ceccoli
Rhodes College
Department of Int'l Studies
(901) 843-3622
ceccoli@rhodes.edu

David Kesler
Rhodes College
Dept. of Biology
(901) 843-3557
kesler@rhodes.edu

Debora Mann
Millsaps College
Dept. of Biology
(601) 974-1415
manndl@millsaps.edu

Stan Galicki
Millsaps College
Dept. of Geology
(601) 974-1340
galics@millsaps.edu

Jimmie Purser
Millsaps College
Dept. of Chemistry
(601) 974-1370
pursejm@millsaps.edu

Abstract

Rhodes College has successfully demonstrated a way to integrate Geographic Information Systems (GIS) into the liberal arts curriculum. Funded by an Information Fluency Grant, Rhodes faculty held a seminar that promoted the use of spatial analysis across the campus and resulted in collaboration among faculty, students, librarians, and information technologists. We now propose to extend this successful approach to another campus in the consortium, Millsaps College.

Rationale

With support from an Information Fluency Grant, Rhodes College recently developed a program entitled "Integrating GIS into the Liberal Arts Curriculum: A Cross-Campus Seminar." The significance of GIS as a tool for the liberal arts and its potential for fostering collaboration across the campus are detailed in the original proposal, which is appended. On September 14, 2002, three Rhodes faculty members held a workshop to introduce their colleagues to Geographic Information Systems. After an introduction to the concepts of spatial analysis at the initial workshop, participants worked on individual projects over the course of a month during which time assistance was available from the presenters and from a work-study student. At a follow-up meeting on October 12, participants presented their projects, planned future collaboration, and discussed strategies for developing and supporting the GIS program at Rhodes. The program was highly successful in generating interest in GIS across the campus. Participants included members of the secretarial staff, Information Services, Admissions, and faculty from the Departments of Anthropology/Sociology, Biology, Chemistry, Economic/Business Administration, French, History, and Religion.

The goal of the project was not only to facilitate the use of GIS at Rhodes but also to develop a model that can be replicated at other liberal arts institutions within the consortium and beyond. We now propose to extend the project to Millsaps College.

This proposal comes at a particularly opportune time for Millsaps. At a recent seminar entitled Rethinking the Liberal Arts in the Digital Age (also funded by an ACS Information Fluency Grant), Millsaps faculty came together to evaluate the ways in which they currently use technology and to envision ways it could enhance the teaching and learning of critical thinking. Because it can be a powerful tool for teaching and research, faculty in several disciplines across the campus expressed an interest in learning GIS. This technology is not easily learned on one's own, however, and success in using GIS is greatly enhanced on a campus once there exists a "critical mass" of users who can learn from one another. Millsaps does not yet have this "critical mass," although interest in GIS on campus is growing.

Interest in spatial analysis is evolving in several areas at Millsaps. Four Millsaps faculty currently use GIS. Although Millsaps does not yet offer a GIS course, Dr. Jimmie Purser will incorporate a GIS-based module into his environmental chemistry course in the spring of 2003. Beginning in the fall of 2003, three Millsaps students per year will be able to register for an on-line course as part of the Collaboratory for GIS and Mediterranean Archaeology (CGMA) project in which GIS will be used to organize and analyze archaeological data. Dr. Michael Galaty of the Department of Sociology and Anthropology at Millsaps and Dr. Kenneth Morrell of the Department of Greek and Roman Studies at Rhodes are collaborators on the CGMA project.

The CGMA project is an excellent example of the ways in which GIS can promote collaboration across disciplinary and institutional boundaries. By introducing more people to the concepts of spatial analysis and its wide application, interest in collaboration and the creativity it fosters can be strengthened both within and between campuses.

We propose to hold a GIS seminar at Millsaps based on the successful model developed at Rhodes. Professors Ceccoli, Ekstrom and Kesler are well prepared to hold such a seminar at Millsaps because of the demonstrated success of their concept-based GIS approach to help beginners launch GIS projects in a wide variety of subject areas.

We anticipate several benefits from the seminar:

- 1) By introducing GIS to additional faculty, staff and students, we will broaden the base of GIS users on the Millsaps campus, thus developing a network for collaboration and mutual support at Millsaps. We will also begin a dialog on future directions for the development of and institutional support for GIS on the Millsaps campus.
- 2) Conversations between Rhodes and Millsaps will enable us to learn from one another regarding GIS course development, GIS applications, GIS campus support systems, and related issues.
- 3) Materials developed for the seminar at Rhodes will be further developed to make them more useable not only for Millsaps, but for other schools. These materials include a) data sets for Mississippi and Jackson area, b) Open House/publicity packet, c) lab manual for GIS modules for introductory courses, d) curriculum development packet with course syllabi. These materials will be made available to other ACS institutions, and the data sets will be added to the Digital South Project which was funded by an ACS-IF grant.

Preliminary Description

We propose to offer a seminar at Millsaps for 15 faculty and staff for the spring of 2003. The format will be similar to that held at Rhodes but with a few modifications necessary to tailor the workshop to Millsaps' needs.

Since Millsaps does not yet offer a GIS course for students, each faculty participant will be permitted to invite a student collaborator to attend the seminar. (These student collaborators will not be offered a stipend.) The seminar will consist of three parts: an initial half-day workshop, work on individual projects throughout the month, and a final half-day follow-up session. The three Rhodes faculty will lead the initial workshop, accompanied by their student assistant. A student has been identified at Millsaps who will attend the seminar and be paid to provide technical assistance for two semesters to provide continuing support for projects developed as an outcome of the seminar.

Participants will be encouraged to contact the organizers prior to the workshop to discuss possible projects and to determine what special data sets they will need. These will be assembled ahead of time to the extent possible. Thus, the presenters and participants will be prepared to use their time together at the workshop as efficiently as possible.

The workshop will begin with an overview of spatial analysis and its uses in the liberal arts. Then in small break-out groups, participants will learn how to do basic tasks using the GIS software ArcGIS 8.1, and they will begin work on individual projects. Over the course of the next month, participants will continue working on their projects. During this time, assistance will be available from the Millsaps student assistant, from Millsaps GIS-users and by phone and email conversations with the presenters at Rhodes.

In the final session, participants will give 15 minute presentations of their projects. This will be followed by a discussion of opportunities for collaboration using spatial analysis across the campus. Finally, the group will discuss future directions for GIS development and support at Millsaps.

Strategies for Recruiting Participants and Target Audience

- A small stipend will be offered to each participant.
- A general invitation to apply for the seminar will be sent to the faculty and staff. Phone conversations with the heads of offices and departments will be made to encourage them to ask the appropriate members of their group to apply. In addition to the faculty, we expect that the seminar will be of particular interest to staff members of the Library, Computer Services, Admissions, and Institutional Advancement.
- A GIS Open House, similar to Rhodes' successful Open House will be planned to illustrate possible applications of spatial analysis in the liberal arts curriculum. The Open House will be an informal lunchtime gathering in the meeting room of the campus cafeteria. Millsaps faculty who use GIS will make brief presentations of their work, followed by a power point presentation of projects undertaken by participants at the Rhodes workshop.

Preliminary Agenda

Wednesday Jan. 15, 2003

noon-1:00 pm

GIS Open House in the campus cafeteria

Saturday, Feb. 1, 2003

9-10 am

Introduction and initial discussion of ways to integrate spatial analysis into the curriculum and the operation of the college. Prior to the seminar a short pretest to assess experience with spatial analysis will be given.

10-10:30

Break

10:30-12:00

Break-out sessions. Each faculty presenter will work with 5 faculty/staff participants. The Rhodes student assistant will work with the Millsaps students.

1:30-2:30 pm

Informal session for grant collaborators and other interested individuals to discuss GIS curriculum development, GIS campus support systems, and related issues, plus informal session for student assistants.

Feb. 1 to March 1, 2003

Work on individual projects with assistance available from the Millsaps student assistant and from Millsaps GIS-users; calls or emails to Rhodes as necessary.

Saturday March 1, 2003

8:00-10:00 am

Presentation of projects

10-10:15

Break

10:15-11:30

Develop plans for new cross-campus collaboration projects. Discuss future directions for development and support for GIS at Millsaps. The Academic Dean and the Director of Computer Services will be invited to his session.

11:30-12:00

Wrap up, post-test, and administration of assessment instrument.

Plans for Evaluation and Follow-up

A pre- and post -test will be administered for the seminar, as well as a final assessment questionnaire. A follow-up lunch/meeting for Millsaps participants will be held in May to discuss problems and successes participants are having with the outcome projects and to share new ideas for additional projects.

Plans for Dissemination of Results to the Rest of ACS and Beyond

We will send a detailed report on the planning, execution, and outcomes of the seminar, in addition to the instructions for the hands-on topic sessions, to the ACS-IF committee for their website. We hope that these reports would permit replication of our project at additional ACS schools.

We also plan to email other ACS IT or GIS representatives to encourage them to read our report, and, if they are interested in the seminar, to collaborate with us on an ACS grant proposal to support our travel to their school to present a similar seminar that addresses the needs of their campus.

Preliminary Budget

Millsaps

\$1500	Stipend for 15 participants
\$ 400	Stipend for additional faculty to assist with projects
\$ 300	Stipend for Computer Services staff for technical support during workshop
\$1000	Student assistant for 4hr/wk for technical support for two semesters
\$ 500	Snacks/lunch at initial workshop and follow-up session
<u>\$1000</u>	Software (ArcGIS 8.1 to equip one lab with 25 seats in which to hold the workshop)
<u>\$4700</u>	Total for Millsaps

Rhodes

\$2010	Stipend for three faculty presenters
\$292	Stipend for student assistant
\$460	Travel, food and lodging for three faculty presenters and one student assistant for the initial workshop
<u>\$155</u>	Supplies for seminar participants
<u>\$2917</u>	Total for Rhodes

\$7617 **Total**

Appendix: Original Proposal from Rhodes:

Proposal for ACS Information Fluency Grant

Title: Integrating GIS into the Liberal Arts Curriculum: A Cross-Campus Seminar

Contact Names:

Steve Ceccoli	Carol Ekstrom	David Kesler
Rhodes College	Rhodes College	Rhodes College
Dept. of Int'l Studies	Dept. of Physics (Geology)	Dept. of Biology
(901) 843-3622	(901) 843-3089	(901)-843-3557
ceccoli@rhodes.edu	cekstrom@rhodes.edu	kesler@rhodes.edu

Abstract

We propose to offer a seminar at Rhodes College to explore way to integrate GIS, Geographic Information Systems, into the liberal arts curriculum. The seminar will foster collaboration between faculty, students, librarians, and information technologists to increase the use of spatial analysis across the campus. We will share the results with the consortium and the larger community by use of the ACS web page.

Rationale

Rhodes College is currently undergoing its most significant planning initiative over the past half century. This planning effort includes considerations for increasing student research opportunities, rethinking the liberal arts curriculum, and maintaining a campus supported by innovative technology. Some of this planning is based on the implicit assumption that important synergies on a liberal arts campus are often left unfulfilled by traditional curricular and pedagogical approaches. To this end, we are proposing a seminar for both faculty and staff to explore together the means of integrating a powerful analytical tool into the curriculum and the operation of Rhodes College. Specifically, Geographic Information Systems (GIS) has become increasingly used in a variety of academic disciplines as well as public, private, and non-profit sectors. In an academic setting, use of GIS can be instrumental in increasing students' research and computer skills and providing them with yet another vehicle to enhance their critical thinking abilities. Its use in the operations of a college/university can help define problems and streamline solutions. In other words, GIS can be seen as a mechanism that can generate important synergies from a variety of sources at a liberal arts college.

Our interdisciplinary GIS team of ten faculty has focused on introducing GIS to the Rhodes community over the past three years. This introduction has evolved in a variety of ways: developing two interdisciplinary team-taught courses ("Scientific Investigation Using GIS", and "Research Seminar in GIS Applications"), offering a GIS Open House attended by over 75 members of the campus community, and sponsoring a GIS Lecture Series. We would now like to turn our attention to the integration and broader utilization of this technology at the College. To continue this integration, we propose to offer a seminar in collaboration with the College Information Services Office (which includes staff members from the Library, Computer Center, and Institutional Research), the Office of Admissions and additional faculty. We feel that such a seminar is an important step in this process.

The seminar has two objectives: 1) to increase familiarity of the technology through hands-on projects (with an eye toward specific applications), and 2) to develop synergies that should be useful for institutionalizing GIS as an analytical device with a variety of campus wide uses.

Specifically, we feel that GIS provides unique opportunities to 1.) develop innovative collaborative projects, 2.) expand curricular approaches and offerings, and 3.) ensure that information fluency resonates throughout the liberal arts environment. To take full advantage of possible synergies, we propose to use this grant opportunity as a step toward institutionalizing GIS at Rhodes. Ultimately, we envision the establishment of permanent GIS technical support at Rhodes. We now have a very small staff in both IT and the Library compared to other ACS schools. Demand for technical assistance will increase as more faculty incorporate GIS into both their courses and their student/faculty research projects. We need to plan ways to support this increased demand.

Preliminary Description

We propose to offer a seminar for 15 faculty and staff for the fall of 2002. The seminar will consist of three parts: an initial half day workshop, a series of one-on-one sessions throughout the month, and a final half day session. Three faculty from our interdisciplinary GIS team will lead the seminar. Work study students will provide additional technical assistance for the workshop, and thorough out the year to support seminar outcomes. We will invite several groups to take part: Information Services (which includes the Library, Computer Center, and Institutional Research), the Admissions Office and the Faculty.

In the workshop we will explore together ways spatial analysis can be used across campus. Then in small break-out groups (one faculty, a student assistant, and five participants) we will do “hands-on” projects appropriate to the group’s interests. The projects may include finding, creating and displaying data, and analyzing feature relationships. We will be using the latest version of the GIS software, ArcGIS 8.1. The participants will then develop an idea for an individual project. During the month, participants will work individually (or in pairs) with the faculty partner and student assistant. At least three, one-hour sessions are anticipated for work on this project. The faculty partner will monitor and support the project through lunch meetings or phone conversations.

In the final session, participants will give a 10-20 minute presentation of their project. This will be followed by a discussion of ways we can collaborate on using spatial analysis on campus. We hope that ideas for several concrete collaboration projects will develop during this discussion. For example, a college office could provide data that a student could use for a class research project. This collaboration would benefit both partners. A second, and perhaps more important, topic of discussion will focus on how we can continue to administer, monitor, and support GIS within the College's evolving curricular, faculty, and administrative structure.

Strategies for Recruiting Participants and Target Audience

- A small stipend will be offered to each participant.

- A general invitation to apply for the seminar will be sent to the faculty/staff. Individual invitations will be hand delivered to individuals who attended the GIS Open House and expressed interest. Phone conversations with the heads of offices and departments will be made to encourage them to ask the appropriate members of their group to apply.
- Professor Delphia Harris and her two students from LeMoyne Owen College who attended the GIS Open House will be encouraged to apply. The presence of LeMoyne Owen participants would extend opportunities for collaborative research projects between the schools and is encouraged by the Rhodes Campus-Community Initiative, and the ACS Campus/Community Alliance.

Preliminary Agenda

Saturday 9/18/02 morning

- 8-9 :00 Introduction and initial discussion of ways to integrate spatial analysis into the curriculum and the operation of the college. A short pretest to assess experience with spatial analysis will be given.
- 9-9:15 Break
- 9:15-11:15 3 Break-out sessions (1 faculty, 1 student assistant, and 5 participants)
- 11:15-12:00 Discussion and selection of individual projects.

2/16-3/15 Three individual sessions with faulty partner and/or student assistant to work on individual project. Additional encouraging phone calls and lunch meetings throughout the month.

Saturday 10/19/02 morning

- 8:00-10:00 Presentation of projects
- 10-10:15 Break
- 10:15-11:30 Develop plans for new cross-campus collaboration projects (outcomes), plus collaboration to support GIS within the college structure. The Academic Dean will be invited to his session.
- 11:30-12:00 Wrap up, post test, and administration of assessment instrument. .

Plans for Evaluation and Follow-up

A pre and post test will be administered for the seminar, as well as a final assessment questionnaire. A follow-up lunch/meeting will be held in January to discuss problems and successes participants are having with the outcome projects, or new ideas for additional projects. We will also discuss applying for a new grant to continue the integration of spatial analysis into the curriculum of the college. Additionally, we want the group to reflect on the positive and negative aspects of the seminar at this time distance point.

Plans for Dissemination of Results to the Rest of ACS and Beyond

We will send a detailed report on the planning, execution, and outcomes of the seminar, in addition to the instructions for the hands-on topic sessions, to the ACS IF committee for their website. We will also include a detailed report on the planning and execution of our GIS Open House. Since the Open House was a main stepping-stone to the development of this proposal, other ACS schools may wish to follow the same route. We hope that these reports would permit replication of our project at other schools.

We also plan to email other ACS IT or GIS representatives to encourage them to read our report, and, if they are interested in the seminar, to collaborate with us on an ACS grant proposal to support our travel to their school to present a similar seminar that addresses the needs of their campus.

Preliminary Budget

\$1500	Stipend for 15 participants
\$ 900	Stipend for 3 leaders
\$ 200	Stipend for additional faculty to assist in specific project areas.
\$1000	Student assistants for seminar and one student assistant for 4hr/wk technical support for two semesters
\$ 400	refreshments
\$ 110	<u>lunch for follow-up meeting</u>
\$ 4110	Total