

Collaboratory for GIS and Mediterranean Archaeology (CGMA) Project Report
March 2002- March 2003
DePauw University

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DePauw University received the Mellon Foundation grant for the CGMA (Collaboratory for GIS and Mediterranean Archaeology) Project at the end of March 2002. Our schedule for CGMA envisioned starting the project at the beginning of the calendar year (i.e., the beginning of DePauw University's spring semester, 2003). Moreover, the receipt of the grant coincided with a pre-scheduled leave for the co-PIs (Drs. Schindler and Foss) during the academic year 2002-2003. Our proposed 'year 1' of the project was given an extra nine months. This extra time has allowed us to work out a number of administrative and programming issues and to work up the undergraduate seminar before students begin participating in the project. When students begin taking the course in the fall 2003, there will be something more substantive for them to work on. Our activities over the past year have included: holding our first board meeting in the spring 2002, hiring a project programmer, developing a document on the software necessary for the project and the system design, designing the project web page, assessing our server requirements, and developing the syllabus for the undergraduate course.

First Advisory Board Meeting in Spring 2002

We held our first board meeting over the weekend of May 22, 2002. Eight members of the board were present. Agenda items for that meeting included: a report from M. Beth Wilkerson on the platform and software requirements for CGMA, a discussion of what metadata we wanted to include in the CGMA database, the undergraduate seminar, how we would divide up the Mediterranean, and how to promote the project, especially the design of the web page. At the end of the weekend we had made a preliminary list of fields that should be included in the database. We had also identified members of the board, as well as other scholars, who could serve as resources for the students as we begin to collect survey metadata. At the time of the board meeting we agreed to proceed by starting with data from surveys in which board members themselves had participated and which were published in English, regardless of country. In winter 2003, we learned that SRTM (Shuttle Radar Topography Map) data, from which we plan to create the detailed CGMA base map, will not be immediately available for all regions of the Mediterranean. Therefore, we will begin with Europe (which will be available at the end of 2003) and continue in subsequent years with Western Asia (i.e., the Middle East) and North Africa.

At the first board meeting we also agreed that we would develop CGMA on the Macintosh platform using the OS X operating system, which functions in a Linux environment. The PIs and Ms. Wilkerson are comfortable working in a Macintosh environment. This choice should have *no effect* on the end user because the CGMA product will be served over the Internet and will be platform independent. It does, to some extent, effect our software choices and the implementation of the undergraduate course. The PIs are working to ensure that students on all participating campuses have access to the necessary hardware and software.

Programming

After the first Advisory Board Meeting it was decided that we would hire Ms. Wilkerson as the project programmer. Ms. Wilkerson has been contracted by DePauw University to work on an hourly basis for the CGMA Project. We purchased a development computer for Ms. Wilkerson to work on in early summer 2002.

In the summer and early fall 2002, Ms. Wilkerson's work concentrated on putting together documentation for CGMA's software requirements (see attached) and designing the project web pages (www.depauw.edu/~CGMA). The 'CGMA Software Project Document' contains information about the software necessary to make CGMA function and about the design of MAGIS 1.0 (Mediterranean Archaeology GIS), the tool that will allow users to query our databases over the Internet. MAGIS 1.0 is designed for users to conduct either a spatial query or a manual query of the CGMA database. Users will have various options for displaying spatial data (e.g., limiting their search to a specific region, using different colors to define survey boundaries, and selecting the zoom factor for the map display). Ultimately, MAGIS will also serve as a front page for database administration where users can add data about survey projects. The two components behind MAGIS are a GIS (Geographic Information System) and a database. For our GIS we have decided to use GRASS, an open-source, free GIS originally developed by the U.S. Army Core of Engineers, tested and used by numerous governmental, corporate and educational institutions. Because DePauw University owns a site license for Oracle we first thought that we would use this as our database application. However, the administration of Oracle is difficult and it is a much more complex system than we need for CGMA. Thus, we have elected to use MySQL, another open-source program.

Last fall we began exploring options for a CGMA server to be housed at DePauw University. In our initial grant application we had proposed using the Stoa server at the University of Kentucky. However, it became clear that this was not the preferable option. Our programmer/system administrator would need ready access to the server, and the space and processing requirements of serving the base map and the data are such that we did not think it wise to load the CGMA system on a server that was also used for other tasks. For this same reason, it was not feasible for us to use any of the existing servers at DPU. Since an independent server was not in our original budget projections, we have tried to economize, while at the same time ensuring that we have a system that will be capable of sustaining CGMA as the project (and the data) grow over the next four years. With the assistance of the technology staff at DPU and our programmer, we have decided to purchase an Apple XServe. This system should be installed within the next two months. As soon as the server is ready, Ms. Wilkerson will be able to begin loading and testing prototypes of MAGIS.

CGMA Undergraduate Course

In the fall 2003, Drs. Foss and Schindler designed the CGMA undergraduate course (see attached syllabus). Dr. Foss will teach the course from DPU for the first time in fall 2003. All participating institutions have now approved the course and this spring we are recruiting students (we plan to have 3-4 students from each campus). The first part of the course introduces students to theory and method in archaeological field survey. We then examine how technology,

especially GIS, is used as an analytical tool in archaeology. While the course presumes no prior knowledge or experience with GIS or database systems, we want each student to become familiar with basic GIS concepts, especially as they apply to archaeological survey. Throughout the course, students will engage in a practicum -- work in groups on their individual campuses designing and implementing a local survey, and then developing a basic GIS from the data that they collect.

This winter we also worked out the technical requirements for conducting the class. Participating schools are providing the necessary equipment as part of their cost-sharing agreement on the grant.

Plans for 2003-2004

In 2002-2003, we laid some important groundwork for CGMA. We are pleased with the syllabus for the undergraduate course and we are looking forward to teaching it for the first time. The design of MAGIS 1.0 as outlined in the Software Document, provides us with a working model for the development of the database and the GIS interface on the Internet. Over the summer 2003, Ms. Wilkerson will begin programming for the database so that at least a preliminary version is ready for the students in the fall 2003. We are also taking advantage of DPU's Information Technology Associates Program (ITAP) and are in the process of interviewing and hiring one or two experienced DePauw students who will assist Ms. Wilkerson with the system administration, the database programming, and the web programming. The ITAP program is funded by another grant to DePauw; by leveraging the ITAP program to assist in the construction and operation of CGMA, we hope to not only offset costs of the server (by reducing programmer hours), but to reach and teach more students about archaeology, technology and GIS, and break down boundaries between the humanities and the sciences. The ITAP associate/s will also serve as technical mentors for the students in the seminar and those working as work-study students during the spring semester 2004.

DePauw University is also arranging for an office/lab space for the CGMA project. This will probably be in the newly renovated Julian Science and Math Center. CGMA should be able to move into this new space at the beginning of 2004.