

businesses residing within a university community. Those that administer cart labs need to consider carefully the function of the lab within the university setting. Is it a service department akin to a library or computer center, whose primary functions are to provide hands-on experience for students and low cost graphics in support of faculty research, or is it a self-supporting business? In the latter case especially we recommend that lab managers compare the pricing levels of local graphic artists for comparable products and set more competitive billing policies. We do feel that in general cart labs are underselling their services and that until more reasonable billing policies are generally adopted cart lab managers will not be accorded the recognition which their academic training and skills would seem to warrant.

Since we sent out our questionnaires tremendous changes have occurred in the availability of graphic software and hardware that is certain to have a substantial impact on the cart lab. Desktop mapping as described by Mattson (1989) in an earlier issue of this journal clearly has advantages, both in cost and in quality, that will undoubtedly attract the attention and influence the decision-making of cart lab managers in the future. Conventional production techniques for producing small-format maps will be supplanted by automated desktop mapping techniques. Cart lab managers will have to face the issue of whether or not to maintain their darkrooms which desktop mapping renders practically obsolete. Conventional production techniques as well as darkrooms will continue to be cost-effective for larger format maps (i.e. those over 11 by 17 inches) until size constraint are no longer a limitation. In general, desktop mapping will force lab managers to decide

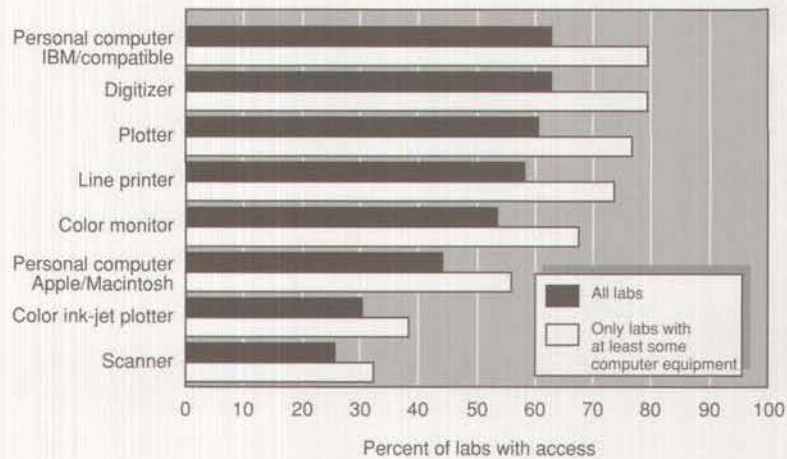


Figure 10: Automated equipment

which services are essential and cost-effective and will greatly influence which mix of skills will be required for future cart lab managers. ☐

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This directory originally began with a list compiled by Onno Brouwer at the University of Wisconsin. It has been added to with gleanings from the *AAG Guide to Graduate Departments* and by informal survey. Special thanks go to Donna Schenstrom, University of Wisconsin-Milwaukee, and to Craig Remington, University of Alabama, for their additions and updates.

CORRIGENDUM

Last issue's Cart Lab Bulletin Board item 'The placement of points in FreeHand paths' contained a misstatement. According to Wes Lem of Adobe Systems Inc., it is not true that "[n]ew versions [of Adobe *Illustrator 88*] for UNIX

platforms (NeXT and Sun) have also been announced." In fact, a version is under development for the NeXT computer, but Adobe currently has no such plans for the Sun.

fugitive cartographic literature

Interesting articles about cartographic information often appear in unexpected outlets. The goal of this section is to bring those publications to the attention of our readership. We invite synopses of papers appearing in journals other than those devoted to cartography, geography, and map librarianship.

Kasturi, Rangachar; Fernandez, Rodney; Amlani, Mukesh and Wu-chun Feng (1989) Map data processing in geographic information Systems. *Computer*, December 1989, pp. 10-21.

reviewed by
Laurence W. Carstensen Jr., Virginia Polytechnic Institute and State University.

This article is a case study of the application of artificial intelligence techniques in answering geographical queries typically associated with Geographic Information Systems (GIS). The authors describe a system that can answer fairly complex queries through output map displays illustrating pertinent information.

The paper begins with an introduction to GIS and its terminology. The introduction mentions several applications of GIS briefly to indoctrinate an audience not generally familiar with maps or GIS. A discussion of data models, based entirely on Donna Peuquet's 1984 paper, 'A Conceptual Framework and Comparison of Spatial Data Models', is very basic to familiarize the reader with the notion that there are alternative data representations that may be selected for various tasks. At the end of the