Will Fontenez
Department of Geography
University of Tennessee
Knoxville, Tennessee 37916
(615) 974-2418

Lecturer/Production Supervisor
Cartographics, Department of Geography
Texas A&M University
College Station, Texas 77843-3147
(409) 845-7144

Dr. Eugene Frankouiak
Director, Cartographic Laboratory
Department of Geography
University of Toledo
Toledo, Ohio 43606
(419) 537-2545

Geoffrey Matthews
Director, Cartographic Laboratory
Department of Geography
University of Toronto
Toronto, Ontario M5S 1A1
Canada
(416) 978-3378

Brian Haslam
Cartographer/Lab Manager
Department of Geography
University of Utah
Salt Lake City, Utah 84112
(801) 581-3612 x8218

Staff Cartographer
Department of Geography
Villanova University
Villanova, Pennsylvania 19085

Carl Nielson
Staff Cartographer
Department of Geography, DP-10
University of Washington
Seattle, Washington 98195
(206) 543-5843

Gary Brannon
Department of Geography
University of Waterloo
Waterloo, Ontario N2L 3G1
Canada
(519) 885-1211 x3110

Julie Rich
Cartographic Laboratory Manager
Department of Geography
Weber State University
Ogden, Utah 84408
(801) 626-6207

Dr. Hans Stolle
Carto-Graphics Services
Department of Geography
Western Michigan University
Kalamazoo, Michigan 49008
(616) 387-3430

Patricia M. Chalk
Senior Cartographer
Department of Geography
University of Western Ontario
London, Ontario N6A 5C2
Canada
(519) 661-3425

Eugene A. Hoerauf
Cartographer
Department of Geography and Regional Planning
Western Washington University
Bellingham, Washington 98255
(206) 676-3277

Alison Hanham
Department of Geography and Geology
West Virginia University
Morgantown, West Virginia 26506
(304) 293-5603

Ronald Welch
Coordinator of Cartographic Services
Department of Geography
University of Windsor
Windsor, Ontario N9B 3P4
Canada
(519) 253-4232

Onno Brouwer
Head of Design and Construction
Cartographic Laboratory
Department of Geography
University of Wisconsin
Madison, Wisconsin 53706
(608) 262-1363

Donna Schenstrom
Staff Cartographer
Department of Geography
University of Wisconsin — Milwaukee
Milwaukee, Wisconsin 53201
(414) 229-4865

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 librianship.

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

introductory GIS section the authors pose the question, "can we teach a computer to read and understand a road map?" This is the basic research question, and the paper that follows describes attempts to do so.

A summary of current efforts to use artificial intelligence and expert systems in map data processing mentions several significant efforts including AUTONAP (a name placement expert system), GENTLE (generalized topographical land-use expert system), and others dealing with generalization, digitizing, urban planning, as well as KBGIS (knowledge-based GIS) described in the *International Journal of GIS* (1987). Most of the information in the introduction of this paper is well known to geographers and cartographers who deal with GIS more regularly than would the electrical engineers who regularly read *Computer*.

After the introduction, the paper takes a more detailed view of the system itself and concludes that it is possible to teach a computer to read a road map (though understanding is not demonstrated). Aside from the CPU (a VAX-11/785), the hardware consists of a scanner and a raster output device for map plotting. Map data are entered in raw raster format at a density of 120 pixels per centimeter. The software components include:

§ The preprocessor takes raw scanned data and separates them into text and graphics layers. Text is processed by optical character recognition techniques, and graphics are passed to the image processor.

§ The improcessor operates on the graphics layer from the preprocessor to extract spatial and structural information. Functions for skeletonization (line-thinning), line following, and symbol identification are the heart of the image system.

§ The query processor analyses queries of the database after they have been entered by the user. Queries must be in a very specific format, thus the query processor operates on translations performed by the natural language processor.

§ The natural language processor is necessary because the query processor format was deemed too complex for users to learn. The natural language processor accepts English commands and parses them to the correct format.

In order to create a response to a query, the system has to perform a number of tasks requiring integration among the processors. As an example, to find the shortest distance (by road) between two cities, the system must be able to:

§ Recognize characters to locate the names.

§ Locate the cities (this is done by locating the names and finding a city symbol near each name).

§ Define an initial window that includes the probable maximum area to search for the shortest path.

§ Discriminate the roads from other map lines.

§ Estimate the length of each road segment and compute the shortest sum of those lengths.

§ Compute the likelihood of a shorter path than that initially found by enlarging the search window and recomputing paths in the larger window if needed.

The authors illustrate the use of the system for three different map reading queries. The system effectively answers all three queries (locating a state, subsetting the roads to those within a single state, and shortest path analysis), and is found to be a useful prototype for paper road map reading.

I was not aware of the journal *Computer* before I was asked to review this paper. An occasional scan of the table of contents would be in order, especially as a reference for articles on cartographic and geographic information processing strategies. If this paper is a fair sample, *Computer* is a good source of fugitive cartographic literature.

Meigs, Philip B. (1990) World Geo-Graphic Atlas. Landmarks of Book Design: First of a Series. *Print*, 44:1 (January/February 1990), pp. 93-101 and pp. 141-142. *reviewed by Richard E. Lindenberg, Kent State University.*

The journal *Print* describes itself as America's graphic design magazine. Although it is uncommon to find an article in it related to maps or geography, the first subject for a series on excellence in book design is Herbert Bayer's 1953 *World Geo-Graphic Atlas*. Philip Meigs, a teacher of design and design history at Virginia Commonwealth University, reviews the atlas and concludes that "It pioneered new ways to present information about the world" (p. 93).

The atlas was commissioned in 1948 by the Container Corporation of America (CCA) to mark its twenty-fifth anniversary in 1953. Bayer had been associated with the influential Bauhaus design school in the 1920's and emigrated to the U.S. in 1946. The CCA had earned a reputation as a patron of design and had given Bayer assignments since 1937. When work began on the atlas in 1948, Bayer expected to spend half of his time for two years on the project. When the final camera-ready copy was shipped to the printer five years