CARTOGRAPHY

Six sessions on cartography were held. Three of these focused on map reading and perception, and three on statistical cartography. The onset of computer-assisted mapping has accelerated production but it has not improved our capacity to understand the process of map communication. Yet this increased capacity has increased our ability to exercise statistical classification schemes and manipulate a variety of design options interactively. The two focal points for these sessions were on discussions of current problems.

The map reading and perception sessions were designed to allow structured discussions. The first of these sessions organized and chaired by John Dornbach provided the federal and private industry perspective on map reading and research. In addition to the chair, Barbara Petchenik and Paul Pugliese discussed the concerns of the private and federal section in map reading and perception research. The second session was chaired by Judy Olson. Its initial focus was on the discussion of classed versus unclassed choropleth maps. Professors Michael Dobson and Jean Claude Muller agreed that this is no longer an issue per se but illustrative of a perspective on the choices available to map designers and users. The third session chaired by Jean Claude Muller was a more traditional papers session, albeit not devoid of audience participation. Four papers were presented, a brief summary follows.

Michael Dobson presented his paper "The Acquisition and Processing of Cartographic Information: Some Preliminary Experimentation". In this he notes that the development of computer assisted cartography raises important questions about the relationship between the efficiency of visual processing and the amount of graphic information on map displays. In this study a simple paradigm was utilized to analyze the information processing-response question. Two types of displays (uniformly spaced and clustered symbols) were investigated in an attempt to probe the influence of amounts of information on the peripheral and foveal components of the visual field. The results of both sets of experiments indicated that increasing the density of mapped information on a display resulted in a decreased ability to process the same information.

Susan Von Gruenigan discussed her paper "Tactual Orientation/Mobility Maps: Production and Testing". She stated that tactual mobility and orientation maps are used extensively in mobility training for the young visually impaired. In recent years there has been an increased interest in production of these maps. This investigation explores those methods of manufacture that could be used by the Ohio State University to produce campus orientation or mobility maps. The methods were evaluated in terms of efficiency of the method of manufacture, effectiveness of the method used and the readability of the final map product. This investigation included a consideration of computer assisted techniques, kits, photo engraved masters and commercial or outside production. Included is a brief description of methods and some consideration of how perception, design and production are interrelated.

Joel Morrison presented "The Benefits of Computer-Assisted Cartography for Map Reading". His paper states the communication of map information is affected by computer assistance in at least three different ways. First, computer assistance has allowed for the clarification of symbols by enabling the cartographer to produce more maps, more quickly at cheaper unit costs, thus allowing each map to be simpler and thereby presumably aiding in the performance of perceptual tasks. Secondly, computer assistance allows for the real time interaction between the map reader and the data base. This can help eliminate the loss of any information which may prevent complete cognition. Finally, the processing capability of computers allows for the more thorough massaging of data which allows more complex concepts to be calculated and to be mapped by simpler methods, thus reducing the required amount of cognitive map reading skill, and simplifying the perceptual skills needed on the part of the map reader to enable the communication to take place.

Joseph Weidel discussed his paper "Award Winning Map Designs". Its summary follows:
The 6th annual ACSM Map Design Competition attracted a total of some 90 maps and atlases as entries. Included in the competition were atlases, environmental impact studies, guide books, series maps, individual sheets, thermoformed tactile maps and a video taped animated presentation. Entries were judged at the University of Maryland Cartographic lab by a panel of noted

cartographers and designers. Each entry was evaluated on the basis of overall design and impression, typography, use of color, craftsmanship, and the authors success in achieving their stated design objectives. Presented in this paper are the nine blue ribbon winners accompanied by the authors' design objectives and a summary of the judges' statements in evaluating the entry.

The last three sessions were structured to allow discussion of papers presented in the plenary sessions. The first of these, chaired by Waldo Tobler, was in a panel format. The papers from the morning session on Mathematical Cartography were reviewed by a panel which included: John Pfaltz, Jean Claude Muller, Waldo Tobler, Marvin White, and James Corbett. The ensuing discussion confirmed the need for extended efforts to both improve the mathematical education of cartographers and map users, as well as extend in the body of cartographic literature (i.e. textbooks) additional representation of mathematical cartography.

The second and third sessions resulted in a vigorous dialogue between practicing epidemiologists and health professionals, and cartographers. Advice and critique flowed freely. A perspective can be put as follows: Cartographers have made limited use of epidemiologic phenomena in their research and publications, while epidemiologists have had limited exposure to current cartographic research. It was clear that in government generated mapping efforts, the trade-off between timely production versus completely researched mapping, favored the former. It was interesting to note that the limited exposure of cartographers to mapping rare events or producing literature on the handling of density driven rates in large choropleth data sets, would have to be addressed at subsequent meetings and hopefully, in research efforts.

The basis for the discussions in the second session, chaired by George Jenks, was panel discussion. Thomas Mason, Paul Leaverton and Sid Witiuk presented the Atlas of Cancer Mortality for U.S. Counties, the U.S. National Atlas of Mortality, and the Canadian Atlas of Mortality, respectively. This was followed by comments from several academic cartographers including Waldo Tobler, George Jenks and Joel Morrison.

The last session was chaired by Mark Monmonier. The discussion was focused on the paper "Obstacles to Accurate and Valid Geographic Assessment of Vital Event Data", by David Slaby, Robert Casady, Henry Malin, and Judith Coakley. Waldo Tobler discussed several points of view which can be used to examine statistics and cartography.