Foreword

WELCOME TO THE 1991 special GIS issue of *Photogrammetric Engineering & Remote Sensing* (*PE&RS*). This is the fourth time that I have served as guest editor. Each year I have been struck by the diversity of subject-matter covered in manuscripts submitted for review. The papers included in this issue reflect, as they have in previous years, the dynamism of GIS and the increasingly close interconnections between GIS and cognate analytic tools such as spatial modeling, statistical methods, and remote sensing. Important topics such as geopositioning, low-cost scanning as a method for database development, user interfaces, and impacts of changes in computing on GIS are also covered in articles contained herein. Although no single issue of a journal can begin to address all areas of research activity, these papers represent an excellent cross-section of contemporary issues in GIS.

I greatly appreciate the efforts of all authors who submitted papers for review. Not all could be included in the space available, but many will appear throughout the coming year in other issues of *PE&RS*. Thanks are extended to Robert T. Aangeenbrug, Marc P. Armstrong, Fred T. Batson, Otis B. Brown, James L. Brown, Barbara P. Buttenfield, Walton B. Campbell, Daniel L. Civco, Peter Cornillon, David J. Cowen, D. Edward Crane, Bruce E. Davis, Lee DeCola, Max J. Egenhofer, Manfred Ehlers, Andrew U. Frank, Martin Feuchtwanger, Stephen Guptill, Robert H. Haas, Michael E. Hodgson, Mark Jakubauskas, Stephen Lavin, Richard L. Liston, Anthony E. Lupien, Edward A. Martinko, M. Duane Nellis, Kevin P. Price, William J. Ripple, Donald C. Rundquist, Terry A. Slocum, Louis Steyaert, Paul T. Tueller, and Frederick K. Wilson for their assistance in reviewing manuscripts and selecting papers included here. Both Donald F. Hemenway, Jr., *PE&RS* Executive Editor, and James B. Case, Editor-in-Chief of *PE&RS*, also made substantial contributions to this endeavor. Their guidance, suggestions, advice, patience, and prodding are gratefully acknowledged.

As has been the practice in the past, this issue is being published to coincide with the GIS/LIS symposium, a conference that has rapidly become a major national forum for GIS specialists. And, as in other years, the period since GIS/LIS '90 has been another very eventful time for those involved with these technologies. It is always dangerous to attempt to identify trends in such a dynamic environment. However, I have been especially struck this year by the acceleration of GIS activity within states, counties, school districts, and other local entities (see Council of State Governments, 1991; Warnecke, 1990).

Remarkably successful regional GIS symposia such as those sponsored by, respectively, Towson State University and the MidAmerica GIS Consortium, and state conferences held in Indiana, Vermont, Minnesota, and Wisconsin, among others, are attracting a largely new, "local" audience of GIS users (or potential users). GIS legislation has been adopted in Wisconsin, Nebraska, and Vermont, and GIS coordinating committees have been established in Oregon, Washington, Nebraska, Kansas, Wisconsin, Montana, Indiana, and many other states. The National Governor's Association's forthcoming fourth annual conference on integrating data for decision-making will focus special attention on GIS (National Governor's Association, 1990). And, sessions to be held in Atlanta at GIS/LIS '91 will reflect these new emphases.

The special needs of states and local-level decision-makers will require that GIS specialists direct research, to an even greater extent than is currently the case, on questions involving (1) development of accurate, high resolution spatial databases; (2) integration of databases through a hierarchy of local to national (or global?) administrative units; (3) institutional, political, legal, and economic issues related to GIS; and (4) user interfaces, visualization, and cartographic presentation methods designed to facilitate GIS applications. Some of these topics are, in fact, addressed in this special issue.

As GIS "filters down" to the local level (I am aware of some applications at the level of the individual farm field), however, many new issues, research requirements, and opportunities will be forthcoming. It will be interesting to see how the diffusion of GIS activity is reflected in GIS research and the GIS marketplace during the coming years.

In closing, the editors of *PE&RS* urge readers to contribute GIS-related research papers, reviews, and commentary for review. Although the special GIS issue is published only once each year, GIS news and research results are included in *PE&RS* throughout the year. We look forward to hearing from you.

—James W. Merchant
University of Nebraska-Lincoln

REFERENCES

Council of State Governments, 1991. *The State Geographic Information Activities Compendium.* Council of State Governments, Lexington, Kentucky.

National Governor's Association, 1990. *Making Information Work: Call for Papers.* National Governor's Association, Washington, D.C.

Warnecke, Lisa, 1990. State Geographic Information Activities, *ACSM Bulletin,* (April), pp. 35–39.

Guest Editor

James W. Merchant
Center for Advanced Land Management Information Technologies
University of Nebraska-Lincoln

James W. Merchant is Associate Professor in the Conservation and Survey Division (CSD), Institute of Agriculture and Natural Resources, University of Nebraska-Lincoln (UNL), Lincoln, Nebraska. He is Associate Director of CSD's Center for Advanced Land Management Information Technologies (CALMIT). In addition, he holds adjunct faculty appointments in UNL's Departments of Geography and Agricultural Meteorology.

Dr. Merchant received a B.A. in Geography from Towson State University, Towson, Maryland, and both the M.A. and Ph.D. in Geography from the University of Kansas. He has been engaged in basic and applied research in remote sensing and GIS since 1971. He was the recipient of the 1990 Alan Gordon Memorial Award, presented by the American Society for Photogrammetry and Remote Sensing to recognize career achievements in remote sensing and GIS. Dr. Merchant has been an Associate Editor (for GIS) of the journal, *Photogrammetric Engineering & Remote Sensing*, since 1987. He is Chairman of the MidAmerica GIS Consortium, was Chair of the Planning Committee for the Mid-America GIS Symposium held in Kansas City in May 1990, and is currently chairing the committee for the 1992 conference. Dr. Merchant also serves on the SPOT Image Corporation Academic Advisory Council and on the Editorial Board for *GIS World* magazine.

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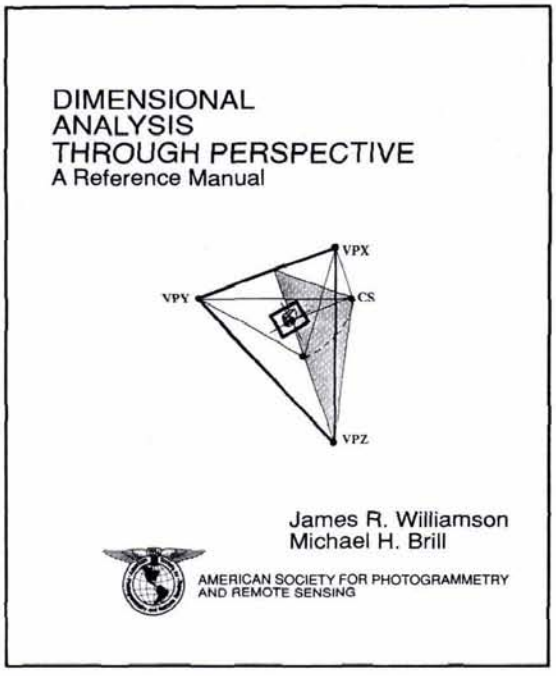

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