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Transportation Research: The State of the Art and Research Opportunities, D. E. Boyce, guest editor, *Transportation Research*, **19A**, 349–542 (1985).[1]

The publication of this special issue of *Transportation Research* is the culmination of a recent effort by American academic transportation researchers through their Council of University Transportation Centers to bring about a major research grant program in the (U.S.) National Science Foundation. The papers and workshop reports which make up the special issue are the product of the Conference on Transportation Research held at Northwestern University in March, 1985. As I was the conference director and guest editor of the special issue, readers should not expect a critical review. Rather, my objective is to inform readers of these developments.

The conference and special issue was organized into seven research areas; for each one a state-of-the-art review was prepared by the scholar indicated: (a) transportation system characteristics and operations (M. A. Turnquist); (b) logistic systems (M. S. Daskin); (c) transportation networks (T. L. Friesz); (d) travel and location behavior (J. L. Horowitz); (e) the governmental role in transportation systems (A. F. Daughety); (f) transportation facilities (F. Moavenzadeh); and (g) planning, organizations and decision-making (M. Wachs). The delineation of these research areas was intended to be comprehensive from the viewpoint of transportation systems. With regard to system components (ways, vehicles and operations), however, a decision was made to include those components of direct relevance to civil engineering (ways, operations) and to exclude those primarily related to other engineering fields (vehicles). This decision reflected in part the organizational structure of the Engineering Directorate of the National Science Foundation (NSF) up to early 1985, the interest and support for this conference having come from its Division of Civil and Environmental Engineering. Subsequent organizational changes in the Engineering Directorate of NSF suggest the decision to exclude vehicles may be questioned.

For each research area, a state-of-the-art review was invited together with several disussants whose charge was to make constructive additions. One thrust of these reviews was on the identification of future research opportunities. These papers were presented and discussed in a plenary session lasting one-and-one-half days. The participants then convened in seven workshops which debated the future directions of the field and produced short workshop reports which are summarized in the special issue and constitute the principal recommendations to NSF by the conference.

Beyond the objective of setting the scope and agenda for an NSF program in transportation research, this conference served another, broader purpose. It offered an opportunity for 70 scholars from various aspects of transportation to review the progress of the field and to identify goals and opportunities for the future.

Although many of the research opportunities identified by the conference participants concern methodological issues which are quite technical in nature, at a more general level they are concerned with the analysis and solution of an extensive list of real-world problems and challenges which the transportation field is facing. These include efficiency, service quality, productivity, safety, finance, resource allocation, operations management and technological development. The nature of these problems, their connection to various methodological aspects of transportation research, and the past and potential contributions of that research are developed in the papers and workshop reports in the special issue.

It is too early to assess the lasting contribution and significance of this conference, and the special issue, to transportation research itself. From my limited experience as a journal editor, however, I know how hard it is to motivate authors to prepare comprehensive and thoughtful reviews of their areas of specialization. It is clear in retrospect that the conference, and the prospect of publication in a leading journal, did succeed in motivating highly the authors and discussants. The result is a collection of high quality survey articles. Taken together, I believe these review papers and discussions may represent a unique, comprehensive statement of the status of our field in its third decade of development. Perhaps by the fifth decade we will know not only whether these reviews have had a lasting impact, but also have provided an important foundation for solving the problems identified in the workshop reports.

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[1] *Note:* A limited number of copies of the special issue are available from the guest editor or from Dr. John Scalzi, National Science Foundation, Washington, DC 20550. Individual requests will be honored while supplies last.

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