CONTENTS

EDITOR'S NOTES ......................................................... 1

ARTICLES
  Third Normal Form Made Easy ...................................... 2
    Betty Salzberg
  Research Concerning Time in Databases: Project Summaries ...... 19
    Richard Snodgrass
  Bibliography: Temporal Databases .................................. 40
    Edwin McKenzie
  Missing Information (Applicable and Inapplicable) in Relational Databases ........................................... 53
    E. F. Codd

CALLS FOR PAPERS ..................................................... 79
SIGMOD RECORD

*SIGMOD RECORD* is a quarterly publication of the Special Interest Group on Management of Data (SIGMOD) of the Association for Computing Machinery (ACM).

We solicit contributions of articles, news, reports, book reviews, and letters. Conference announcements and calls for papers are published if relevant to the interests of the group. All contributions are to be sent to the editor for consideration for publication. Materials are not normally returned. Technical papers submitted to the *RECORD* should be relatively short (5-15 single space pages) and sent to the editor either in camera ready format or via electronic mail. Papers which are sent in camera ready form should be single spaced on 8.5 by 11 inch paper with at least 1 inch margins.

Opinions expressed in signed articles and letters are those of the writer and do not necessarily express the position of the ACM or SIGMOD. Unless otherwise stated, reports and technical papers in the *RECORD* are unrefereed working papers, and the author(s) should be contacted for reprint authorization. Contact the editor for information on the copyright status of all uncredited material.

SIGMOD Officers

**Chairperson**  
David DeWitt  
Computer Sciences Dept.  
University of Wisconsin  
1210 W. Dayton St.  
Madison, WI 53706

**Vice-Chair**  
Paula Hawthorn  
Britton-Lee Inc.  
Suite 304  
1919 Addison St.  
Berkeley, CA 94708

**Secretary/Treasurer**  
Fred Maryanski  
University of Connecticut  
EECS Dept, U-57  
260 Glenbrook Road  
Storrs, CT 06268

**Record Editor**  
Margaret H. Eich  
Department of Computer Science and Engineering  
Southern Methodist University  
Dallas, TX 75275  
CSNET: eich@smu
Editor's Notes

We are fortunate to have three excellent articles in this Newsletter. Betty Salzberg has provided a comparison and overview of the many Third Normal Form definitions to be found. This provides not only an easy to read comparison but can be used as a teaching tool in any introductory database class. Richard Snodgrass has compiled a complete and up to date bibliography and survey of current research in the area of Temporal Databases. I wish to thank Rick for his effort for I know a lot of time went in to preparing this survey. This is the sort of article which, I feel, is extremely appropriate for the SIGMOD RECORD. I encourage each of you to submit such survey articles in the future. The final article is one submitted by E. F. Codd concerning a new proposal for treatment of nulls in relational database theory. I think all readers will find this a very informative and thought provoking paper.

Even though this issue contains several good articles, I must still beg for more participation by you the reader. I'm still waiting for my first submission from industry and graduate students. Remember, the Newsletter is what YOU want it to be. Please consider submitting technical articles, literature surveys, book reviews, or any papers you feel would be of interest to the SIGMOD members. The deadline for submission to the next issue is February 1.