Foreword

It is our great pleasure to introduce this Special Issue of research results from the 1997-1999 activities of the Semi-Arid Land-Surface-Atmosphere (SALSA) Program. The SALSA Program is a multi-agency, multi-national research effort that was initiated at the USDA Agricultural Research Service (ARS) Southwest Watershed Research Center (SWRC) in Tucson, Arizona, and grew to include 65 scientists from nine federal agencies, eight universities, six foreign agencies and several NASA/EOS science teams. In the first SALSA workshop (1995), this group formulated the SALSA Primary Science Objective *to understand, model and predict the consequences of natural and human-induced change on the basin-wide water balance and ecological complexity of semi-arid basins at event, seasonal, interannual and decadal time scales.*

Under the co-leadership of Drs. Dave Goodrich (SWRC) and Ghani Chehbouni (IRD/IMADES, Mexico) and with a mix of funding as diverse as its membership, the SALSA Program launched a series of activities in 1997-1999 to address SALSA research priorities. These SALSA activities cut across established disciplines and aligned diverse agencies toward cooperative research that would directly aid resource managers and decision-makers in the near term. All participants shared resources, data and results to leverage both funding and expertise for the benefit of all. A common thread uniting all participants was a strong concern for the sustainability of the internationally important Upper San Pedro River Basin, the initial location for focused SALSA research. By publishing this body of research as a combined collection of papers, it is hoped that both the AFM readership and USPB natural resource decision-makers will benefit from reviewing interdisciplinary research results that might otherwise be

scattered among a variety of journals.

This special issue and the SALSA Program represent a new era in scientific research in which an interdisciplinary research approach is essential. In this era, decision-makers and natural resource managers increasingly require much more sophisticated levels of expert findings and scientific results to make informed decisions. Effectively communicating these results is made difficult by the respective culture of policy makers and scientists. The world of policymakers revolves around subjective values, beliefs, emotions, perceptions and deadlines or crises. In contrast, the culture of scientists involves a world of facts, proofs, rational methods, measurements and incremental progress. Realizing these differences and understanding the processes involved in each culture can only be overcome by enhanced communication between scientists, decision-makers, natural resource managers, and the public. There is an increasing need for researchers to demonstrate the relevance of their findings and to deliver tangible results that will help address real world problems. Many decision-makers and natural resource managers often express the opinion that the science and expert communities are fragmented and expert knowledge is not readily available in a useable form. This is particularly true when management decisions must be made in a watershed environment with its inherent complexities of human activity interacting with hydrological, ecological, and meteorological processes operating over a wide range of spatial and temporal scales.

We hope that the SALSA Program will be a model of cooperation to address the numerous barriers to successful interdisciplinary research ranging from within-discipline specialization, problems of coordination and communication, and institutional reward systems. The SALSA philosophy is that the

reward for successful interdisciplinary research far exceeds the pain involved in renegotiating and redefining paradigms for cross-discipline studies. By presenting the SALSA research results together in this issue, we hope to further foster high-quality interdisciplinary research and take a step forward in improving communication across disciplines and between scientists and decision-makers.

As Guest Editors of this Special Issue, we would like to thank all the authors for their cooperation throughout the process. The reviewers were exceptionally thoughtful and timely, and were absolutely critical to the quality of this issue. The staff of SWRC was immersed in all stages of this editorial process, and are possibly the group most pleased to see the papers in print. The AFM Editor-in-Chief, Dr. Kya Thaw Paw U, and Dr. Jacques Kiebert of Elsevier provided the continuous support and direction that was needed to prepare this Special Issue.

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