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Dr. Ari M. Michelsen: Life Dedicated to Advances in Water Resources Development

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This article is dedicated in memory of Dr. Ari M. Michelsen, 2018 Warren A. Hall Medal recipient, in recognizing his scholarly accomplishments in natural resources economics and policy.

Ari Michelsen was born on August 10, 1954 in Oslo, Norway to Frances (Blumve) and Arve Michelsen. The family returned to the U.S. to live in Maryland throughout his school years. He received a B.S. in Conservation and Resource Management from the University of Maryland in 1976, followed by his M.S. (1983) in Economics, and Ph.D. (1988) in Agricultural and Resource Economics from Colorado State University, where he was advised by Dr. Robert Young.

Michelsen was a nationally and internationally renowned scholar in economics and resource policy. He started his professional career as a consultant on energy. After completing his Ph.D. he worked as faculty and Associate Director at University of Wyoming (1989-1994) and as faculty at Washington State University, Vancouver (1994-1999). In 1999 he joined Texas A&M University as Professor of Agricultural Economics and Resident Director of Texas A&M AgriLife Research Center at El Paso. He specialized in integrated water resources management, valuation, conservation, markets and policy analysis. His research focused on the effectiveness of agricultural and residential water conservation programs, water markets and prices, impacts of endangered species water acquisition programs, regulatory impacts and decision support systems for river basin resource management, and water policy analysis in the U.S., China, and Chile. During his career, he authored or co-authored over 140 publications and technical reports. His research projects not only advanced our knowledge of water resources (drought and flood) in the arid region, but also greatly impacted regional water resources planning and management. Two papers were particularly impactful. "Group Decision Making in Water Resources Management Using Multiple Objective Analysis" (*Journal of Water Resources Planning and Management,* 2004) and "Economic Impact of Alternative Policy Responses to Prolonged and Severe Drought in the Rio Grande Basin" (*Water Resources Research,* 2005) became the most cited papers of his published work, advancing methodology in the Decision Support System analysis. His work on economic assessment of flood control infrastructure and salinity control in the Rio Grande Basin could provide economic benefits of millions of dollars to the community. Moreover, his work on best management practices (BMPs) for water conservation has been used to develop management strategies in Texas regional water plans as well as the state water plan. Ari was selected as the Regent Fellow, the highest honor bestowed upon faculty members by the A&M System. His work had positive impact not only at the institution or agency level, but also at community, state, national, and international levels. Michelsen received the Fellow of American Water Resources Association (AWRA) in recognizing his outstanding professional achievement. A passionate scholar, he advised graduate students, postdoctoral associates, and visiting scholars; many of whom continued their career as academics, while others became successful practitioners in the water resources field.

Dr. Michelsen was active in international cooperation. He initiated and led the efforts in U.S.-Mexico Transboundary Aquifer Assessment Program (Public Act Public Law 109-448 enacted in 2006), a joint program of USGS and the Water Resources Research Institutes in Texas, New Mexico and Arizona, to develop scientific knowledge of US-MX bi-national aquifers in those three states. He was frequently invited to participate in international collaborative work. Following are just a few examples of projects in which Ari played a significant role:

- Workshops on the theory and empirical application of economic models and design of multiple objective decision support systems for water resources management for the United Nations Development Program, and lectures and roundtable for the USDA – Foreign Agricultural Service (2000)
- Invited Lecturer by the U.S. State Department China Embassy for the Year on Water Rights, Markets and Prices, eight cities (2002)
- Invited Lecturer on Economics of Water Resources and Integrated Management for the headwaters region of the Yellow and Yangtz Rivers, Qinghai Provence, Xining, Chengdu and Beijing by Chinese Academy of Sciences and Ministry of Water Resources (2004)
- Economic analysis and decision support project development and courses for the United Nations Development Program, Macroeconomic Based Water Resources Management Study for North China, involving numerous Chinese government agencies and organizations, Tsinghua and other Universities in Beijing, Jinan, Ningbo, Shanxi, Tianjin, Shanghai, and Shenyang, China (1991-1994)

It is worth noting that several colleagues with whom he worked these projects were elected as Academicians of Chinese Academies of Sciences and Engineering.

Ari was invited to participate in the Innovation and Natural Disaster Resiliency for the Biobio Region of Chile, IRDC Workshop and lectures (2010) and Integrated Sustainable Economic-Environmental-Social Development Analysis Framework for Patagonia, Pan American Studies Institute NSF Workshop (2008), EULA, University of Concepcion, Chile. He served as the IWRM Session Coordinator of the 5th World Water Forum (2009). and as Thematic Priority Core Group Chair of the 6th World Water Forum (2010-2012). This forum, the world's biggest water-related event and organized by the World Water Council, aimed "to promote awareness, build political commitment and trigger action on critical water issues at all levels, to facilitate the efficient conservation, protection, development, planning, management and use of water in all its dimensions on an environmentally sustainable basis for the benefit of all life."

As the Resident Director of the El Paso Center he was responsible for strategic planning, research programs, outreach, fiscal affairs, personnel management, and facilities. He was a successful leader, empowering faculty to achieve success in their research programs and providing support for the community by meeting their needs in areas such as sustainable development, economic growth, and heathy ecosystems. He also provided great leadership and outstanding service in national and international professional communities. He served twice as the President of UCOWR and on the Board of Directors, and as the President and on the Board of Directors of AWRA. He loved the UCOWR community, so much so that his whole family often participated in UCOWR conferences and activities. He was proud of his two outstanding daughters: Sonja and Anna. Sonja is following her father's footsteps, working in the water resources field. Ari served in various capacities in numerous local, regional, and state organizations and national professional societies, such as USGS National Water Census Advisory Committee; Texas Economists Board of Directors, Western Regional Research Project; Paso del Norte Watershed Council; New Mexico-Texas Water Commission; and Far West Texas Regional Water Planning Group.

In summary, Dr. Ari M. Michelsen was a passionate scholar, dedicated professional leader, and beloved colleague with distinguished achievements in natural resources economics and outstanding contributions to the professional community. His unfinished journey will continue as we advance our knowledge in water resources development and extend our dedicated service to our communities.