

## 1994 C.V. THEIS AWARD

### Citation

**John E. Moore**

Dr. James Mercer received his Master and Ph.D. degrees in geology from the University of Illinois. Like C. V. Theis, he is also a product of the U.S. Geological Survey, where as a research hydrologist, he worked on geothermal and modeling problems. He has been president of GeoTrans, Inc., Sterling, Virginia, since 1979.

Jim is an internationally recognized expert in ground-water modeling and evaluation of subsurface contamination. He received the ASCE Horner Award for his work at the Love Canal hazardous waste site. He has made numerous contributions to the science of hydrogeology. It is a great pleasure, therefore, that I present him the 1994 C. V. Theis Award.

### Acceptance Speech

**James W. Mercer**

I am very honored to be selected to receive the 1994 Theis Award. I have had the good fortune throughout my career to work with outstanding friends and colleagues who have greatly enhanced both my capabilities and productivity. Many of these people have not only influenced my career, but my life. I would like to take this opportunity to thank some of these people.

First, I would like to thank my advisor from the University of Illinois, Pat Domenico, who provided me with a proper philosophical outlook and many truisms. One of his less colorful truisms, but one that helped me, was that "scientific advances are often made at the interface of different disciplines."

Armed with this advice, I was next influenced by George Pinder, who showed me, among other things, how to marry the disciplines of hydrogeology and mathematics to form numerical models. He also taught me what research was all about. For these contributions, I thank him.

Perhaps the person to most significantly influence my career and life is Charlie Faust. Charlie and I met at the U.S. Geological Survey in the early 1970s, and have continued to work together, now at GeoTrans. In many ways, we are very different - the odd couple, where I am the neat and organized Felix, and Charlie is the unkept and disorganized Oscar. Although our association has at times been frustrating, Charlie is the most scientifically creative person I have ever met. It has been a rewarding experience working with him, where again our work involved different disciplines, including physics (multiphase flow and heat transport), chemistry, and hydrogeology.

The last person I would like to acknowledge is someone I met in high school. By the time I entered high school, I had already decided to pursue a career in geology. This was an unusual career path for my hometown of Panama City, Florida, where rock collecting could only be performed at the grave headstone cutter's shop. During my senior year, I joined the science club, and was introduced to hydrogeology. This introduction was made by someone from the USGS who volunteered his time, taking students on field trips, and allowing us to use his office. He was also instrumental in getting me my first job with the USGS, measuring the water level in a well in Panama City once a month for the grand sum of 50 cents/measurement, one of the higher per-hour salaries I received from the USGS. This individual not only introduced me to hydrogeology, he demonstrated the importance of sharing one's time and helping our profession. The person who introduced me to hydrogeology in 1964 is James 'Buck' Foster.

I have been asked to talk about the future directions of the hydrologic sciences. These are exciting and challenging times for hydrogeologists, especially in the area of contaminant hydrology. Contamination problems require multiple disciplines, and Domenico's truism is as important today as it was twenty years ago. Advances are being made at the interfaces of microbiology, organic chemistry, hydrogeology, mathematics, computer science, and environmental engineering. Future research should focus on understanding processes that control the fate and transport of chemicals in the environment, and making use of these processes to develop effective remedial techniques. Contamination problems also involve large amounts of data, thrusting hydrologists onto the information highway. This requires the use of geographical information systems (GIS), coupled with tools to aid in visualization and interpretation of data. This, too, is an area where future applied research should focus.

In closing, it is obvious that our profession has much to offer, but, as demonstrated by Buck Foster, it is important to give back to the profession.

[Ed. note: The C.V. Theis award was first established in 1986 by the American Institute of Hydrology. It is named in honor of C.V. Theis, one of the truly great leaders in the hydrological sciences. The award is presented for a major contribution in the field of ground-water hydrology.]