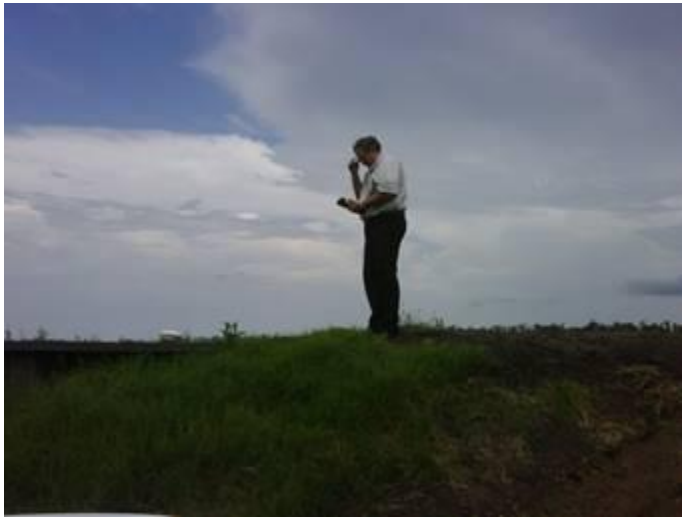


Remembering Dr. Roy Dokka: An Inspiration for Infrastructure Improvement

Bob Jacobsen, Environmental Engineer, Baton Rouge



Few folks have contributed as much to major advances in the practice of Louisiana civil engineering as Dr. Roy Dokka did over the last decade. Sadly, Roy passed away unexpectedly on August 1, 2011. Given our current focus on improving Louisiana's infrastructure, we think it appropriate to dedicate some space in this issue to his contributions. They were significant not only to our profession but above all to the safety and welfare of our citizens. Roy's accomplishments should serve as a potent inspiration to us all in the difficult challenge of changing political paradigms about infrastructure improvement.

In becoming a valued member of the Louisiana civil engineering community Roy had to overcome two serious impediments—he was born in North Dakota (and apparently of some good ole hard-nosed Norwegian stock) and educated as a structural geologist at the University of Southern California (and thus an unrepentant Trojan). Roy joined the LSU Geology Department in 1980 and became a full professor ten years later. Following a stint with the National Science Foundation in the early 90s, he switched to the Department of Civil and Environmental Engineering to pursue his research and applied interests in geoinformatics. Over the years he made many presentations at ASCE and LES luncheons and conferences and gave freely of his time to help us understand the nature of changing surface elevations and techniques for faster, cheaper, better spatial referencing.

To the academic community Roy was best known as a structural geologist who employed geoinformatics to advance scientific understanding of the structural geology of the lower Mississippi River embayment and the relative contributions of deep structural and other processes to regional and local subsidence rates. He recently published The role of deep processes in late 20th century subsidence of New Orleans and coastal areas of southern Louisiana and Mississippi, in *Journal of Geophysical Research* (Vol.116, 2011). Having worked with many geologists over the years, I can definitely attest to his being a “splitter” and not a “lumper.” Roy never shrunk from a hearty debate over the finer points of any issue related to his interests.

I knew Roy and his family personally (our wives worked together and his daughters babysat my kids) before we became acquainted professionally. In 2004, as my practice turned towards coastal restoration my client, colleagues, and I faced a problem of developing vertical control for hydrologic investigations of

the Maurepas Swamp. The concurrent work of Roy and Kurt Shinkle in studying rates of benchmark displacement was crucial to addressing this task.

In the wake of Hurricane Katrina many community officials and citizens in south Louisiana woke up to four practical implications of his research that Roy had been preaching to the civil engineering, surveying, and other professions for years: 1) ample spatial measurements coupled with sound science show Louisiana has been and always will be sinking and sliding into the Gulf of Mexico at rates we need to be conscious of; 2) a surveying reference system tied to surface monuments is woefully inadequate—in Roy’s words it is like milk in the refrigerator soon to go bad; 3) public safety demands expanding a modern system of “smart benchmarks” that are continuously maintained within a high level of accuracy and precision (Roy’s Center for Geoinformatics together with NOAA’s National Geodetic Survey initiated the system); and 4) we need to demand funding of that expansion, as well as more rapid adoption of “smart benchmark” supported surveying techniques.

In 2006 it was my privilege to work closely with fellow members of the ASCE Louisiana Section Board and LSPS to assist Roy in securing support from the Louisiana legislature and FEMA to expand the “smart benchmark” system. Today that system supports over 60 Continuously Operating Reference Stations (CORS) around the state. And civil engineers and surveyors can now confidently establish the heights of levees, floodwalls, canal inverters, major coastal bridges, subdivision streets, and homes.

My hope is that we can achieve half of what Roy did for spatial referencing for the rest of Louisiana’s infrastructure.