

Ted Apotria

August 1, 1961 – June 6, 2009



On June 6, 2009, our good friend and colleague, Ted Apotria, passed away after a brief, but intense battle with brain cancer. He was 48. Although his time with us was cut short, Ted will long be remembered for his enthusiasm and sense of humor, his athleticism and passion for sports, and his contributions to structural geology & tectonics and seismic interpretation.

Ted was born on August 1, 1961 and was raised in Hamden, Connecticut. It was there he first learned to play golf, a game for which he maintained a passion for his entire life. In high school, Ted expanded his athletic interests to also include gymnastics and diving. In fact, Ted was accomplished enough in diving that he became a four-year member of the swim team when he later attended the University of Connecticut. It was at UCONN where Ted developed a lifelong love of the geosciences and received a B.S. in Geology in 1983 and a M.S. in 1985. His M.S. thesis was titled “*The Stability and Evolution of Triple Junctions*” and was based on his work with Dr. Norman Gray on the motion and evolution of the Bouvet triple junction. Ted further distinguished himself by publishing his Masters work in *Nature*, in Apotria and Gray (1985).

In 1985 Ted headed south to Texas A&M to continue his graduate studies in structural geology under the supervision of Dr. David Wiltschko. Ted's dissertation at Texas A&M focused on the kinematics and mechanics of oblique-ramp deformation in the Wyoming fold-and-thrust belt. Ted's dissertation thesis was entitled "*The Kinematics and Mechanics of Oblique Ramp Deformation within Fold-and-Thrust Belts*". Based on this work, Ted published two significant papers for the fold-and-thrust belt research community: Apotria et al. (1992), which described a theoretical 3-D kinematic analysis of displacement trajectories over concave and convex oblique-ramp segments (essentially predicting the magnitude and orientation of out-of-plane displacement trajectories); and Apotria (1995), which detailed the structures and strains associated with a natural oblique ramp in the Wyoming fold-and-thrust belt. These papers influenced many later studies on the kinematics and mechanics of fault-related folds because of Ted's detailed field observations and quantitative numerical analysis of out-of-plane strains and displacement trajectories. It was also at A&M that we all first encountered Ted, and developed lifelong friendships that continue to this day.

Life after graduate school led us all to work in the petroleum industry in Houston. Ted first worked with Shell Development Company from 1990-1993, and then joined us at Exxon Production Research in 1993. Ted's athletic endeavors evolved from tennis to cycling and basketball and eventually back to golf. We all shared laughs and geology together during this period. It was while at Exxon that Ted met his wife, Amy Ruf. Ted and Amy were married in 1999. They shared a love for geology, outdoor activities, movies, and their golden retriever, Greta. After many years in Houston, they moved to Jakarta, Indonesia, where they had been living for the past two years.

On the professional side, Ted enthusiastically embraced the art and science of 3-D volume interpretation and the application of structural geology to exploration and development. Ted also continued working on the geometry and deformation of fold-and-thrust belts. His work on this topic culminated in his co-editorship of the Journal of Structural Geology special volume "*Fault-Related Folds: The Transition from 2-D to 3-D*" with Scott Wilkerson and Mark Fischer. In this volume, Ted was co-author of two papers: Wilkerson et al. (2002), which looked at natural and model fault-related fold termination map patterns in order to distinguish between folds that terminated due to a loss of displacement versus those that terminated due to an oblique ramp; and Apotria & Wilkerson (2002), which described the seismically constrained 3-D geometry and kinematics of a natural fault-related fold termination in Venezuela. This special volume and these two papers served to bridge Ted's research interests in fold-and-thrust belts and seismic interpretation. Ted continued to work on seismic volume interpretation for the next decade at Exxon (and later ExxonMobil), eventually moving to Jakarta in 2007. There he applied his talents to develop models for structural controls on carbonate deposition and post-depositional structural impacts on carbonate reservoirs in Java.

Ted's enthusiasm for structural geology and seismic interpretation was second only to his enthusiasm and love for his family, friends, and life in general. And it is this enthusiasm and delight in life that we all will remember most about Ted.

Submitted by: Doug Goff, Scott Wilkerson and Bill Shea.

Apotria, T. G. and Gray, N. H., 1985, Absolute motion and evolution of the Bouvet triple junction, *Nature* 316, pp. 623-625

Apotria, T.G., W.T. Snedden, J.H. Spang and D.V. Wiltschko, 1992, Kinematic models of deformation at an oblique ramp. In: K.R. McClay, Editor, *Thrust Tectonics*, Chapman & Hall, pp. 141–154.

Apotria, T.G., 1995, Thrust sheet rotation and out-of-plane strains associated with oblique ramps: an example from the Wyoming salient, USA, *Journal of Structural Geology* 17, pp. 647–662.

Apotria, T.G., and Wilkerson, M.S., 2002, Geometry and kinematics of a fault-related fold termination: Rosario structure, Maracaibo Basin, Venezuela: Wilkerson, M.S., Fischer, M.P., and Apotria, T.G. (ed.), *Fault-related folds: Transition from two dimensions to three dimensions*, special issue of the *Journal of Structural Geology*, 24(4), 671-687.

Wilkerson, M.S., Apotria, T.G., and Farid, T.A., 2002, Interpreting the geologic map expression of contractional fault-related fold terminations: Lateral/oblique ramps versus displacement gradients: Wilkerson, M.S., Fischer, M.P., and Apotria, T.G. (ed.), *Fault-related folds: Transition from two dimensions to three dimensions*, special issue of the *Journal of Structural Geology*, 24(4), 593-607.