University of Nevada, Reno

John Bell Retires

Nevada Bureau of Mines and Geology

Summary of NBMG Career

John W. Bell was hired as an Engineering Geologist at the Nevada Bureau of Mines and Geology in 1976 and retired from NBMG as a Professor on January 1, 2015. He was awarded academic tenure in 1981 and promoted to full Professor in 1988. During the course of his career at NBMG, John specialized in the areas of Quaternary geology and geomorphology, engineering and urban geology, paleoseismology, earthquake hazards, and groundwater-induced land subsidence. He conducted a wide range of research on these topics in areas of socio-economic importance to Nevada, and he served as a liaison to the Nevada geotechnical industry providing technical assistance in the area of urban geology and hazards. He also conducted conventional geologic quadrangle mapping, initially as part of an early environmental geology program at NBMG, and published a number of the principal NBMG geologic maps for the Las Vegas and Reno urban areas. During his last several years at NBMG, he taught the GEOL 441/641 course in Geomorphology and became the advisor for a number of geology graduate students.

John W. Bell

With the growing interest in geothermal energy in Nevada, John most recently has been involved in the application of geomorphic tools such as LiDAR to the exploration for geothermal potential.

In 2002, John was awarded a NASA research grant that established the Nevada Bureau of Mines and Geology InSAR (Interferometric Synthetic Aperture Radar) Laboratory to use satellite radar imagery to study groundwater land subsidence in Nevada. Since that time, the lab has supported a number of graduate students and conducted subsidence studies in Las Vegas, Pahrump, Mesquite, Reno, Fallon, and Eureka. In the past several years these studies were extended to mine de-watering, and a number of InSAR studies were conducted for the mining industry within the area of the Carlin trend. The InSAR lab also extended research into the area of earthquake hazard, and John used the methodology to study the ground deformation associated with the 2008 Reno-Mogul earthquake swarm.

John received several awards over the course of his career, including selection as the Mackay School of Mines Researcher of the Year in 1981, receiving the Publication of the Year Award from the Association of Engineering Geologists in 2002, and receiving the Award for Excellence from the Nevada Earthquake Safety Council in 2002. In 2004 he received the Geological Society of America, Engineering Geology Division Award for the paper “Land subsidence in Las Vegas, Nevada, 1935-2000: New geodetic data show evolution, revised spatial patterns, and reduced rates”. He was elected a Fellow in the Geological Society of America in 2005.

John has published more than 110 peer-reviewed journal papers, NBMG Bulletins and maps, US Geological Survey Professional Papers and maps, field trip guidebooks, symposia papers, and proceedings papers, as well as given many professional talks.

Among these, his most notable publications include:

Bell, J.W., 1981, Subsidence in Las Vegas Valley, Nevada: Nevada Bureau of Mines and Geology Bulletin 95.

Bell, J.W., 1984, Quaternary fault map of Nevada—Reno sheet: Nevada Bureau of Mines and Geology Map 79.

Bell, J.W., and Katzer, T.L., 1990, Timing of late Quaternary faulting in the 1954 Dixie Valley earthquake area, central Nevada: Geology, v. 18, p. 626-625.

Bell, J.W., Brune, J.N., Liu, T., Zreda, M., and Yount, J.C., 1998, Dating precariously balanced rocks in seismically active parts of California and Nevada: Geology, v. 26, no. 6, p.495-498.

Bell, J.W., dePolo, C.M., Ramelli, A.R., Dorn, R.I., Sarna-Wojcicki, A.M., and Meyer, C.E., 1999, Surface faulting and paleoseismic history of the 1932 Cedar Mountain earthquake area, west-central Nevada and implications for modern tectonics of the Walker Lane: Geological Society of America Bulletin, v. 111, no. 6, p.791-807.

Bell, J.W., Amelung, F., Ramelli, A.R., and Blewitt, G., 2002, Land subsidence in Las Vegas, Nevada, 1935-2000: New geodetic data show evolution, revised spatial patterns, and reduced rates: Environmental and Engineering Geoscience, v. VIII, no. 3, p. 155-174.

Bell, J.W., Caskey, S.J., Ramelli, A.R., and Guerrieri, L., 2004, Pattern and rates of faulting in the central Nevada seismic belt, and paleoseismic evidence for prior belt-like behavior: Bulletin of the Seismological Society of America, v. 94, no. 4, p. 1229-12554.

Bell, J.W., and House, P.K., 2007, Did Plinian eruptions in California lead to debris flows in Nevada? An intriguing stratigraphic connection: Geology, v. 35, no. 3, p. 219-222.

Bell, J.W., Caskey, S.J., and House, P.K., 2009, Geologic map of the Lahontan Mountains 7-1/2-minute quadrangle, Churchill County, Nevada: Nevada Bureau of Mines and Geology Map 168.

Bell, J.W., Amelung, F., and Henry, C.D., 2012, InSAR analysis of the 2008 Reno-Mogul earthquake swarm: Evidence for westward migration of Walker Lane style dextral faulting: Geophysical Research Letters, v. 39, doi:10.1029/2012GL052795, 2012.