

UNSW



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Dr. Milton Glick, Dr. Marc Johnson
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Closure of Nevada Bureau of Mines and Geology

Dear Sirs

I am writing this letter to express my alarm, and that of my international colleagues, at news of the planned budget cuts for the NBMG and the possible termination of important geodetic research undertaken within the Bureau by the Nevada Geodetic Laboratory.

Let me first introduce myself. My name is Chris Rizos, and I am currently Professor and Head of the School of Surveying & Spatial Information Systems, here at the University of New South Wales (UNSW), Sydney, Australia. I have researched Global Positioning System (GPS) technology and applications since the mid-1980s, and established the Satellite Navigation and Positioning (SNAP) Laboratory at UNSW about 15 years ago. SNAP is now Australia's premier academic research group in the field of satellite and wireless-based location technology and applications. Our range of activities (see http://www.gmat.unsw.edu.au/snap/work/our_work.htm) is broad, covering topics such as carrier phase-based GPS/GNSS algorithms and software for high accuracy applications, multi-GNSS studies, new GNSS receiver designs, terrestrial RF-based technologies and integrated multi-sensor development. I have published over 500 journal articles and conference papers (see my CV at http://www.gmat.unsw.edu.au/snap/staff/chris_rizos.htm).

I am currently Vice President (and president-elect) of the International Association of Geodesy (IAG), and a member of the Executive and Governing Board of the International GNSS Service (IGS). Therefore, with my academic background in geodesy and GPS/GNSS, as well as my responsibilities in international organisations such as the IAG and IGS, I have come to appreciate the excellent work undertaken

by the NGL under the leadership of Dr. Geoff Blewitt. The profile of the NGL (<http://geodesy.unr.edu>), its projects, research strengths and its achievements, is such as to place it amongst the top five academic institutions in the field of geodesy in the world today. I draw attention to their excellent work on analysis of GPS observations to determine local (regional and global) crustal dynamics; projects on aquifers and geothermal deposits; and basinwide ground subsidence. Certainly my own research group - the SNAP Lab – aspires to emulate the successes of the NGL.

The work of Dr Blewitt and others from NGL (well known researchers include Corne Kreemer, Bill Hammond, and Hans-Peter Plag) have had a significant impact on the scientific community. Their work on GPS for real-time monitoring of displacements due to earthquakes is worldclass. Their expertise in Differential Interferometric Synthetic Aperture Radar (DInSAR) for detecting ground subsidence due to fluid extraction is also excellent. These two geodetic tools – GPS and DInSAR – are extraordinarily versatile, opening up many new applications important to Nevada, including (to name but a few) seismic hazard assessment, exploration of geothermal resources, detection of magmatic activity (possibly leading to volcanism), ground water monitoring and aquifer management, atmospheric moisture, and better understanding of tectonics that give Nevada its abundant mineral wealth.

Which brings me to my final point. The Nevada Geodetic Laboratory is but one part of the Nevada Bureau of Mines and Geology, albeit the one I am most familiar with. To cut such productive research groups, from within a Bureau that is part financed by the state government, is extremely shortsighted for a university that prides itself on high quality education, training and research. The University of Nevada will lose opportunities to leverage this worldclass facility and earn research income, and attract to the state, and to the university, innovative research projects. I believe it is a tragic mistake to cut geodetic and geological research at the university. The state will lose project/research funding, and miss economic opportunities in the geoscience area, as well as weaken its capability to protect its citizens against geohazards.

In summary, Nevada, as in the case of several states in Australia, has mineral wealth and geothermal potential. This is a time for Nevada to beef up its geosciences, the NBMG, and it is certainly not the time to cap or diminish its commitment to the geosciences.

Yours sincerely,



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