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Prof. Dowell received his B.S. in Civil Engineering from SDSU and Ph.D. in Structural Engineering from UCSD. He is a practicing licensed Civil Engineer (PE) in California who worked as a Bridge Design Engineer for Caltrans before going back to graduate school at UCSD. While at Caltrans he designed and analyzed multiple bridge structures, including as Principal Design Engineer for a major portion (25 spans) of the Cypress Street Viaduct Replacement Structure (I-880 Replacement Project) – the original, two-mile-long, double-deck viaduct collapsed in Oakland during the 1989 Loma Prieta earthquake. Prof. Dowell designed and built the first shaking table at SDSU and was hired as a consultant to design (all concrete and prestressed concrete portions) the large on-campus shaking table (SRMD Test Facility) at UCSD, housed in the High Bay Physics Building.

Prof. Dowell was instrumental in many of the seismic retrofit designs and new designs of the large bay crossings in California. He performed the independent check of the two-column bents for seismic retrofit design of the San Diego-Coronado Bridge. For the new East Spans of the San Francisco-Oakland Bay Bridge (SFOBB), Dr. Dowell was Principal Investigator for all nonlinear analyses of large-scale and full-scale structural testing to failure of critical seismic components of this bridge in the laboratory, which served as final design validation for this most expensive Civil Engineering Structure in the history of the United States, at over $6 billion. Also, the designer of the new East Spans of the SFOBB, TYLin International, San Francisco office, purchased the computer program ANDRIANNA (that Prof. Dowell wrote and developed) for design of all columns and piles on this structure. Other large bay crossings that Dr. Dowell was heavily involved with include the new Carquinez Bridge which was the first major new two-tower suspension bridge in California since 1960, as well as the Richmond-San Rafael Bridge. Dr. Dowell also modeled the two-tower suspension bridge, Vincent Thomas Bridge, across the LA Harbor as part of the California Strong Motion Instrumentation Program.

Prof. Dowell trekked through the Himalayan Mountains to over 13,000 feet elevation to inspect a damaged two-tower suspension pedestrian bridge over a rushing river that served a small village community, and had collapsed from a major earthquake in Nepal. He designed a modification to the existing bridge in the evening at a trekking lodge using only hand calculations, which allowed the students and other professors on the trip to modify the two-tower suspension bridge to a single-tower cable-stayed bridge, since one of the two towers was still standing. With only hand tools, the group re-purposed the steel cables and made the change, which is probably the first time a two-tower suspension bridge was changed to a single-tower cable-stayed bridge.

Prof. Dowell recently went to southern Turkiye (Turkey) following the *Mw* 7.8

earthquake of February 6, 2023, as part of a reconnaissance team to inspect damaged and failed structures, with a particular interest of his on how their bridge structures performed. He has since written (or been asked to write) multiple reports, journal papers and articles about this experience, as well as invited to give presentations at local, state, national and international levels. Dr. Dowell is a Structural Engineering Professor in the Department of Civil, Construction and Environmental Engineering, within the College of Engineering at SDSU and Director of the SDSU Structural Engineering Laboratory.