In an age when we measure the precise motions of mountain belts from orbiting satellites, the notion that geologic data and techniques might bear on questions of earthquake magnitude and recurrence is self-evident. It was not always so, and we have Bob Yeats to thank for his pioneering work in the field we now call earthquake geology. Over the course of a 60-year career, Bob, his collaborators, and his students adopted a multidisciplinary approach, before it was fashionable to do so, combining surface geology and field observations with subsurface images of deformed strata that together illuminated the architecture of active fault systems in Southern California, the Himalaya, and Cascadia. This work laid the foundational structural and tectonic frameworks upon which our current understanding of these mountain belts now rests. On behalf of my co-nominators, Roger Bilham and Chris Goldfinger, I am honored to introduce Robert S. Yeats as the 2020 GSA Career Contribution Awardee from the Structural Geology and Tectonics Division.

Bob spent the first decade of his professional career as an exploration geologist with Shell Oil, developing an intimate understanding of the oil and gas fields in Southern California. His move to academia was well-timed, as he joined the faculty of Ohio University in the late 1960s, and wasted little time launching a sustained research effort into the active tectonics of Southern California. Combining high-resolution seismic images from industry with surface geology, Bob developed new insights into the source mechanisms for historic earthquakes throughout the Los Angeles Basin. These efforts led directly to seminal papers describing rapid uplift across the Ventura Avenue Anticline, characterizing earthquake hazard along blind faults, and contributing to a general understanding of the relationships between fault geometry and fold growth. This work laid some of the cornerstones for the remarkable transformation in our understanding of blind faults that followed the 1994 Northridge earthquake.

Upon moving to Oregon State University in 1977, Bob spearheaded a sustained program of study into the active tectonics of the Himalaya. Again working with a team of geologists and geophysicists, Bob’s extensive field investigations blazed a path for subsequent researchers into the active tectonics of this archetypal orogen. Much of what we know of the fault geometry, subsurface architecture, and earthquake source characteristics of the Himalaya frontal faults in the Salt Range of Pakistan, the Kangra region in the western India Himalaya, as well as the Iranian Plateau directly stems from Bob’s structural and subsurface mapping.

In the early 1990s, Bob turned his attention to the submarine realm, establishing a research initiative into active deformation along the Cascadia subduction zone. Bob and his students developed new constraints on upper-plate deformation in the offshore Cascadia prism, as well as throughout the terrestrial portions of the forearc. As with his previous research, Bob was in the vanguard of researchers tackling an important question; the Cascadia subduction zone is now recognized as one of the primary regions of seismic hazard in North America, and the time-dependent behavior of deformation along the plate interface continues to challenge our thinking about fault mechanics.

In addition to his prodigious scholarly contributions, Bob has been a champion of outreach, bringing the science of earthquake geology to both students and the general public. His textbook with Kerry Sieh and Clarence Allen, *The Geology of Earthquakes*, still stands as one of the canonical texts in the field, and Bob’s twin “survivor guides”, *Living with Earthquakes* in the
Pacific Northwest and Earthquakes in California, provide a much-needed blend of the science of earthquakes with practical advice for individuals and communities.

As one of his co-nominators succinctly noted, a lifetime award “…constitutes a round of applause for an active mind, who has encouraged and influenced those around him.” So, on behalf of the Division, please join me in applauding the contributions of Bob Yeats to the field of earthquake geology.

Response by Robert Yeats (as told to Ken, his geologist son)

I am very honored to receive this award from the GSA Structural Geology & Tectonics division, and I would like to thank Eric Kirby, Roger Bilham, and Chris Goldfinger for submitting my nomination.

I was fortunate that my career coincided with the technological advances in marine and subsurface mapping that shaped the plate tectonic revolution. I was also fortunate to have started out working in industry, which gave me a unique perspective on the benefits of multidisciplinary methods as I moved on to academic research and teaching. Leveraging all the data while collaborating with bright students and talented colleagues led to the insights in earthquake geology that Eric noted in the citation. I am very grateful for the important contributions of these fellow scientists.

While solving challenging structural and tectonic problems has always been gratifying, writing about it has been my passion, culminating in “The Geology of Earthquakes” textbook. I am also particularly pleased with the “Living With Earthquakes” outreach series, providing students and the public with a way to understand the risk and prepare themselves and their communities. The moniker “Dr. Doom” is well worth it.

My family gets special thanks for putting up with my zeal for geology, from random road cut stops on cross-country trips to extended absences for field work, and the ever-present draft of “the next paper” on the kitchen table. Finally, I would like to thank GSA and the Structural Geology & Tectonics division for this award and their continuing commitment to showcasing earthquake geology research.