Part 1. Introduction

- Good afternoon!
- The Steinmann Medal signals achievement and distinction in the earth sciences.
- The medal also lauds those who have confronted a complex scientific problem by calling upon the help of a coalition of skilled colleagues.
- The Steinmann Medal thus applauds scientific leadership as well as outstanding personal attainment.
- By virtue of luck and long friendship, and as a charter member of his team, I am privileged to open the applause for Dr. Roland von Huene, the Steinmann Medalist.

I begin these words of tribute by observing that his accomplishments have been favored by the habits and ways of a genuinely amiable and informal man.
- His easy manner draws others to his cause, as much as the excitement and promise of his scientific vision.
- An equally persuasive gift is his ability to present his reasoning in a way that others find intuitively convincing.
- These leadership qualities of non-dominating command and clarity of scientific insight virtually impel colleagues and students to join him take on first-order scientific problems.
- Successes in these challenges inspired the geological union to honor him with the Steinmann Medal.
- Dr. von Huene is known to all as Roland, or just Rolie. Americans pronounce his Estonian family name as von Hugh-Knee. To his Spanish-speaking colleagues, Roland is sometimes known as von Waynay.
- His wife, Juanita – who is here with us – is known to her friends and family as Nita. Rolie and Nita, that is how they are known, loved, and intensely respected.
- But Roland, my highly focused friend, is not really concerned about how you greet him.
- He is interested in discussing a significant matter at hand, in particular if you want to talk about “how subduction processes build the rock framework of continental margins”.
- Or perhaps – as this graphic documents – how to make and enjoy wine from his vineyard, wine that has the presence and style he and Nita prefer.

Part 2. The skilled man

- Roland was born in Los Angeles, California. His Estonian father had met Roland’s American mother in Europe. They were reunited in California and in the days of the Great Depression a family was begun.
- Roland became interested in the earth sciences through his great uncle, who was the curator of minerals at the California Institute of Technology.
- Roland’s father, a mechanical engineer, was also a member of Caltech’s technical staff.
- Roland began his formal training at the University of California in Los Angeles, better known as UCLA.
- As a Fulbright scholar, he continued his studies in Austria at the University of Innsbruck.
- In 1960, Roland was awarded his doctoral degree at UCLA.
Roland’s professional career began in 1959 as a civilian research scientist with the US Navy. He joined the US Geological Survey in 1967 to continue his marine investigations – mostly off Alaska, and, most auspiciously, traveled to Kiel to become, in 1989, the first director of the Marine Geodynamics Division of Geomar. Roland has participated in more than 40 oceanic research cruises. Four of these as a co-chief scientists on DSDP and ODP drilling legs to investigated the evolution of convergent margins.

Part 3. The creative man

I now want to steer your thoughts to Roland’s achievements as a creative scientist. It is within this domain of human accomplishment that Roland has so most met the criteria of the Steinmann Medal.

As all here know, Gustov Steinmann was among the first to recognize that an assemblage of rocks – the Steinmann Trinity – recorded the tectonic interaction of oceanic and continental crust. The trinity is a manifestation of subduction accretion – the tectonic addition of an assemblage of oceanic rock and sediment to the mass of the continent. It is now recognized that subduction detaches and removes sections of continental crust. It is not intuitive that subduction should tectonically erode the continents. Nonetheless, with his many colleagues, Roland spearheaded the investigation of subduction erosion and its sister process of removal, sediment subduction. With a strong display of professional courage, Roland championed the view that these two processes are the main ones that shape the rock record of most sectors of convergent margins.

This concept is very different than the more universally held one that at most subduction zones accretion is the main tectonic business going on. But where did Roland’s inspiration come from, why did he focus his career on learning about subduction processes and the building of convergent margins? It began as an by-product of his PhD study at UCLA. Roland needed to interpret gravity data, which led him to the works of Vening Meinesz and his concept of the “tectogene” and the ocean-margin birth place of geosynclines and trenches. The great 1960 Chile and 1964 Alaskan earthquakes then drew Roland’s attention to the seismic setting of ocean margins bordered by deep-sea trenches. These continental edges where not then known as subduction zones or convergent margins.

Roland, like many of us here, started out as a pre-plate tectonics guy. In 1967 Roland led a geophysical cruise to the Chile trench, where he observed with astonishment that

1. accretionary prisms were either absent or quite small, and
2. that continental basement rock could be traced seaward to near the trench axis.

In 1971, on DSDP Leg 18 Roland, with his American colleague Vern Kulm, drilled and sampled the Cascadia and Alaskan margins where the expected accretionary material was found – all was well again. Six years later, in 1977, everything changed. On DSDP Leg 57, Roland and his Japanese colleague, Nori Nasu, focused on exploring the young accretion prism bordering Japan. But the prism was not found. Instead drilling penetrated a deeply submerged, Mid-Cenozoic shoreline unconformably overlying deformed Mesozoic beds. This discovery meant that a crustal thinning processes was making the Japan margin sink, the opposite of being uplifted by a thickening and growing accretion prism.

At this point in his career, Roland’s curiosity was fully aroused – something was wrong with the accretionary-dominated paradigm for convergent margins. The creative person does two things when confronted with a fundamental inconsistency, first he or she recognizes that something needs to be done about this matter. And second he or she does something to resolve the matter.

With creative energy, persuasion, and persistence, Roland in 1979 and 1984 was able to join with his French colleague, Jean Aubouin, and drill into the then acknowledged “type” accretionary margin of Guatemala. An accretionary prism was not found, instead the rocks of Guatemalan continental crust were discovered at the inner trench wall. Later, in 1986, he combined forces with Geomar’s Ewin Suess to explore the margin of Peru.