



Dinner Meeting

*The Carolinas Chapter of the
Association of Environmental & Engineering Geologists
Presents Guest Speaker:*



Dr. Stanley R. Riggs
Coastal Marine Geologist

AEG Carolinas presents a special geologist, probably not known well (if at all) by many of the younger members of our profession. However, most professionals in North Carolina are probably aware of the issues presented to our coastline by rising sea levels/climate change, and the damage from hurricanes that includes regularly rebuilding parts of NC 12 and renourishing beaches, and how this issue has become political. Come hear Dr. Riggs talk about our changing coastline and his view of what the future holds.

Presentation:

**NORTH CAROLINA'S WATERY WORLD:
FROM PAST TO PRESENT TO FUTURE**

Meeting Details

Place: The patio at Clouds Brewing, 126 N. West Street in Raleigh
Date: Thursday, March 30, 2023
Time: 5:30 PM socializing begins, 7:00 buffet dinner, 8:00 Stan's talk
Cost: AEG and ASCE members \$35; non-members \$45; public-sector employees and teachers \$20. **Students free w/ college ID.**

Reservations: Please make reservations and prepay by 6:00 PM on Monday, March 27, 2023 at <http://aegcarolinas.org/news/>. *Registration will be \$5 more at the door.*

Students - register by emailing meeting planner Rick Kolb at rick.kolb1@gmail.com by April 3, 2023.

Continuing Education: The NCBLG has preapproved AEG Carolinas to offer 1 CE credit for Stan's presentation.

Dr. Riggs' Abstract

NORTH CAROLINA'S WATERY WORLD: FROM PAST TO PRESENT AND FUTURE

NC's Land of Water coastal system is a world-class mixing basin and transition zone where upland river valleys and coastal plain peninsulas meet the ocean. It is a high-energy intersection of land, water, and air where sunny day calms quickly shift to high energy stages of dynamic change. In our unending rush to conquer the ocean's mobile sand pile — our barrier islands — we tended to overlook the ongoing changes within our vast inner coastal world of estuaries, wetlands, and lowlands. Historical economic-development practices in this coastal system have largely ignored the dynamics of natural change. Centuries of ditching, draining, and clearing wetlands and the more recent development of urban cities on mobile barrier-sand piles have created **unintended consequences** resulting in massive economic losses by ongoing climate change. Within this watery world with its **vast natural resources and extreme dynamics** there are **limits to growth and development** — water is both a critical resource and a harsh dictator!

North Carolina's world-class coastal system has challenged the engineering prowess of many great minds over the past four centuries. Now in the 21st century with rising sea level and exploding coastal populations, North Carolina finds itself in the throes of a **perfect conflict**: an escalating battle between natural storm dynamics that drive coastal change and the economic drive to stabilize and develop the land and water resources. When living within this intersection of land, water, and air, society must adopt a more-humble approach and learn to **live with the changing system dynamics!** There will always be shorelines and associated coastal ecosystems wherever an ocean intersects a land mass — but they just won't be in the same place through time as they move in response to changing climatic and geologic conditions!

Dr. Riggs' Biography

A native of Green Bay, Wisconsin, Stanley R. Riggs joined the ECU faculty in 1967 as one of five new faculty hired to develop programs in geology and marine science. The same year, Riggs, a graduate of Beloit College and Dartmouth College, had completed his Ph.D. in geology at the University of Montana. With funding from North Carolina Sea Grant, Riggs began tracking shoreline erosion rates for the state's coastal region. He founded and directed an interdisciplinary program combining biological and geological studies housed on Roanoke Island and was known locally as "ECU by the Sea." From the late 1970s

through the 1990s, Dr. Riggs expanded his work, conducting studies of mineral resources globally. In this connection, he served as the co-director of an International Geologic Congress, a United Nations project that focused on the natural resources in developing countries.

In 1983, in recognition of his studies of the North Carolina coast as well as his work on global resources, Riggs received the prestigious Oliver Max Gardner Award from the UNC Board of Governors. In his acceptance speech, Riggs observed that “geology’s contribution to society is its ability to make man aware of the underlying unity of the changing earth system.” In 1994, he was the first recipient of the College of Arts and Sciences’ Distinguished Professor award in recognition of his “stellar achievements” in teaching, advising, research, and professional service. In 1997, he was chosen to deliver the fall commencement address, a rare honor for an in-service faculty.

An exceptionally productive scholar, Dr. Riggs has authored 16 books, 38 book chapters, and over a hundred journal articles. He has received more than 73 research grants, valued at well over \$15 million, from the National Science Foundation, the National Oceanographic and Atmospheric Administration, the U.S. Geological Survey, the Environmental Protection Agency, and numerous state agencies. His current research deals with the ongoing changing climate dynamics (storms and sea level) occurring within North Carolina’s world-class coastal system during the past, present, and future.

Dr. Riggs was on the faculty of East Carolina University for 55 years. Although he retired from teaching in 1999, he was rehired by ECU in 2000 as a Distinguished Research Professor to lead an interdisciplinary program studying coastal systems. The latter initiative resulted in the 2003 publication of *Drowning the North Carolina Coast: Sea Level Rise and Estuarine Dynamics* and the 2011 publication of *The Battle for North Carolina’s Coast: Evolutionary History, Present Crisis, and Vision for the Future*. In 2010, the N.C. Coastal Resource Commission’s Science Panel, of which Riggs was a founding member, released a report, requested by the North Carolina state legislature, on projected sea-level rise over the next 90 years, warning that rising sea levels imperiled the already over-developed coastline. In response, a new legislature rejected the report and instructed the Science Panel to redo the report and restrict its projections to a 30-year timeframe. This political attempt to deny the scientific data and resulting projections caused Riggs to publicly resign his position on the CRC Science Panel in 2017. In 2012, Riggs founded North Carolina Land of Water (NC LOW), a non-profit organization devoted to public education and aiding local communities with sustainable development in eastern North Carolina. Dr. Riggs was awarded the 2021 Francis Parker Shepard Medal for “Excellence in Marine Geology” by the international Society for Sedimentary Geology that was named for the “founder of American Marine Geology.” In 2022, Riggs received the Governor’s “North Carolina Award in Science” for his contributions to the “Land of the Longleaf Pine.”