



IN MEMORIAM

Douglas Lamar Inman
Professor of Oceanography
UC San Diego
1920-2016

Scripps Institution of Oceanography at UC San Diego Emeritus Professor Douglas Inman, considered the founder of the field of coastal oceanography, died Thursday at the age of 95.

Inman was a World War II veteran who described his roles in beach landings in the South Pacific as an informal source of his expertise in nearshore processes. He joined Scripps in 1946, the first year the institution offered a doctorate in the newly defined field of oceanography. Over ensuing decades, he made fundamental observations that explain how beaches acquire sand, how sand is transported, and how it disappears from coastlines. His work has informed the building of coastal infrastructure and management of coastal resources, including economically vital sandy beaches. A committed educator, Inman advised dozens of graduate students over the course of his 60-year career. Many of those students went on to transform the understanding of how the ocean and land interact along coasts using Inman's founding principles as their basis.

“So much of what we know about our coasts and how the ocean interacts with land comes thanks to Doug Inman,” said Scripps Oceanography Director Margaret Leinen. “We are now in an era in which we anticipate substantial changes to coastlines in the face of sea-level rise and extreme weather events. Not just scientists but society as a whole would be at a tremendous disadvantage in attempting to cope with an uncertain future had Doug not created the foundation of our understanding of the main interface between people and the oceans.”

Inman created the Center for Coastal Studies (now part of the Integrative Oceanography Division) at Scripps and established the Hydraulics Laboratory, a Scripps facility constructed in 1964 outfitted with wave channels and tanks for conducting fluid dynamics research. He is credited as the first researcher to extensively consider the role of land processes on coastal dynamics. He pioneered

quantitative methodologies and development of electronic instruments for coastal research. He formulated mathematical models that are now considered fundamental to the study of beach erosion and wave dynamics.

Inman introduced the concept of the “littoral cell” to describe segments of coastlines that contain the sources, transport paths, and sinks of sediments. Working close to home, Inman designated the beach adjacent to the Scripps campus as part of the Oceanside littoral cell, which has its origins in Dana Point, Calif. Its terminus is the Scripps Submarine Canyon where the sand washed from beaches is lost to the deep. Inman’s work highlighted the natural processes such as cliff erosion and sediment transport from rivers that create sandy beaches and how coastal development can sometimes disrupt those processes, creating a need for costly artificial methods of beach replenishment in some areas.

Inman’s influence is apparent not only in his own research but in that of the numerous students he advised over several decades. Several generations of coastal oceanographers have made significant advances in the field using his observations as founding principles.

“The immortality of this man is really in the footprints of his students,” said Scott Jenkins, a physical oceanographer at Scripps who first joined Inman’s lab as a high school student volunteering to help with fieldwork in the summer of 1966. Jenkins received his doctorate from Scripps in 1980 with Inman as his adviser.

Robert Holman, an emeritus professor in the College of Earth, Ocean, and Atmospheric Sciences at Oregon State University describes himself as a “grandson” of Inman’s in that Inman served as the adviser to Holman’s adviser, Tony Bowen, himself an emeritus professor of oceanography at Dalhousie University in Halifax, Nova Scotia.

“He was *the* leader in the field for a long time and Scripps was *the* institution for coastal processes,” said Holman. “When you invent a field, your influence runs pretty deep.”

Inman was born July 7, 1920, in Guam, the son of a Marine Corps captain. The family moved to the Philippines, China, and Nicaragua, following his father to various deployments. By that time, the family had returned to San Diego along with parrots, an ocelot, a monkey and other exotic animals brought from Nicaragua. After his father died when he was 14, Inman would work summers at his grandfather’s ranch in Auburn, Calif., where he participated in one of the last true cattle drives from the American River valley to the Sierra Nevada foothills. Inman was fond of describing himself as a cowboy during his teenage years. He, his sister Iris, and his mother lived in La Mesa, where his mother tried to introduce him to the business world by renovating and reselling homes but his interests lay elsewhere.

Inman graduated from Grossmont High School and enrolled at San Diego State University, then known as San Diego State College, and received a combined bachelor's degree in physics and geology in 1942. Anticipating another war, he had completed platoon leader training for the Marine Corps Reserves in 1940-1941 and was called to active duty as an officer after Pearl Harbor. Misinterpreting his physics background, the Marine Corps sent Inman to learn top-secret radar technology at Harvard University and Massachusetts Institute of Technology in preparation for training other radar officers.

Shortly after, he saw combat in the invasions of Peleliu and Angaur in the South Pacific's Palau islands. As a Marine captain, his mission was to establish radar command and control on an island as it was being invaded to prove advance warning of enemy aircraft and direct artillery fire. At one point, he spared an American aircraft from destruction by friendly fire when he informed ground units that his radar indicated it was a U.S., and not Japanese, plane.

Inman would remain affiliated with the Marines after the war, rising to the rank of major as a reservist.

When he returned home from the war, he enrolled as a graduate student in geology at Caltech but departed as a student as soon as he learned of a new oceanography graduate program starting at Scripps. Earlier, as a San Diego State student, he had been enthralled by talks that Scripps oceanographer Roger Revelle gave on campus and shared Revelle's enthusiasm for extending concepts of geology into the study of ocean basins. After a friend told him about the new curriculum in oceanography devised by then-Scripps Director Harald Sverdrup, Inman traveled to Scripps the next day and applied in person.

Inman joined the incoming class of 1946 and received M.S. and doctoral degrees with Scripps researcher Francis Shepard as his adviser. He joined the faculty in 1953, and became a professor in 1965.

From the beginnings of his career, Inman had served as an advisor first to the U.S. military and later to governments on beach and coastal processes, being for many years virtually the sole expert in the field. He advised the 1950 U.S. invasion of Inchon during the Korean War. In the mid-1960s, he made several trips to Vietnam to assist the Navy in placement of harbors. During one, he survived the shooting down of the helicopter transporting him on a scouting mission.

At the same time, Inman was disseminating his research on beaches to the public. He served as science adviser to the 1965 film ["Beach: A River of Sand."](#) a film on beach processes that would win an American Film Festival award in 1966 and an "Orbit Award" in 1967 as the best scientific teaching film at the International Film Exhibition.

In addition, Inman was a central player in the Scripps community of researchers and their families. He had been named a Guggenheim Fellow in 1961 and during

his associated sabbatical had drawn inspiration for design of the Hydraulics Laboratory's equipment during his time at the National Hydraulics Laboratory in Wallingford, England. The Hydro Lab – with its distinctive wave-shaped roofline and all-wooden construction – in its earliest years was a hub for Scripps social events, hosting dances in the same confines that housed advanced fluid mechanics instruments. Inman lived on the Scripps campus as did many other researchers, at one time living in a cottage with the address “1 Discovery Way” where the Robert Paine Scripps Forum for Science, Society, and the Environment is located now.

To help his fellow academics afford real estate in tony La Jolla, Inman formed with Revelle, Walter Munk, Jeffrey Frautschy, and other Scripps scientists the Scripps Estates Associates, a nonprofit entity that purchased land north of Scripps campus and developed it into 42 homesites sold at cost to researchers at Scripps and elsewhere, including polio vaccine discoverer Jonas Salk. The entity also designated nearby Sumner Canyon as a privately protected nature reserve.

Inman also attracted other world-renowned researchers to Scripps including French explorer Jacques Cousteau. Inman was an early adopter of Cousteau's invention, scuba gear, and made what are believed to be the first scuba dives on the West Coast in 1948. It was in a submersible craft developed by Cousteau that Inman was able to directly observe the Scripps Submarine Canyon in 1964 and confirm it as the final repository of much of the sand in the Oceanside littoral cell.

Over the decades, Inman cemented his place in the history of oceanography as his students formed a diaspora and brought nearshore oceanography to other research centers around the world. In 1973, the editors of the journal *Science* invited Inman to write what would become one of his seminal papers, [“The Coastal Challenge.”](#) In it, Inman pointed out the increasing impact of human activities on coastlines and the need for improvements in technology and management to preserve them.

Inman advised local, state, and federal agencies and lectured internationally on concepts of erosion, coastal infrastructure, dam construction, and dredging of harbors among many topics. His career efforts were recognized by numerous awards including honors from the American Society of Civil Engineers and the Office of Naval Research.

In many instances, Inman's science became an instrument of diplomacy. He helped organize a joint meeting of Israeli and Egyptian scientists in 1980 to share information on the Nile littoral cell the two countries shared. The meeting was held on the Scripps campus – a neutral location suggested by Inman – in great secrecy with security provided by the FBI because of the open hostilities between the two countries at the time. Inman was also one of the first American scientists to visit China in the years after President Richard Nixon began the process of re-opening relations with that country during his presidency. The 1978 invitation to visit had been a gesture of gratitude from Chinese scientists who were studying at

Scripps during the 1949 Communist revolution. After those students were temporarily barred from returning to China, Inman and Walter Munk helped with efforts to reunite them with their loved ones.

Inman retired in 1991 but returned to Scripps as a research professor until 2003.

Inman is survived by his wife, retired Scripps marine archaeologist Patricia Masters; son Bryce Inman, a PhD candidate at Scripps; and sons from his first wife Ruth, who died in 1978, John Inman of Campo, Calif. and Scott Inman of Sedona, Ariz. He is also preceded in death by son Mark, who died in 1975.

Click [here](#) to read the transcript of Doug Inman's oral history of his career recorded in 2006.