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A 50-Year History of Coastal Studies Institute Contributions to Science

The Coastal Studies Institute (CSI), Louisiana State University was established as an interdisciplinary and field-oriented research organization in 1952. Initial funding for CSI research was established to address Navy needs through institutional support from Geography Programs of the Office of Naval Research. Coastal geomorphology and sedimentology were the themes of early studies of the Louisiana coast. However, studies of biology, marsh ecology, and soils chemistry were included in the investigations of deltaic coasts where soon extended into other parts of United States including the Arctic as well as Europe, Asia, and South America. The institute grew from a single investigator and founder Dr. Richard L. Russell, in the early 1950s to 25 full-time personnel, numerous graduate students, and undergraduate student workers in the late 1960s. By this time, the institute's programs had expanded beyond the simple physical, biological, and cultural aspects of coasts to include physical oceanography, coastal meteorology, geochemistry and beach dynamics. During this era and through the 1970s fundamental science contributions were made in understanding worldwide delta variability, process sedimentology, lithification along tropical coasts, physical processes of reef environments, air-sea-land interactions of subtropical coasts, and wave dynamics/rhythmic changes of sandy beaches. At this time CSI was recognized as one of the world's most important and productive coastal research programs. By the mid-1970s CSI researchers had worked on every continent except Antarctica and research programs were expanding beyond the coast to continental shelves.

In the mid-1980s ONR changed its funding format and institutional funding which sustained CSI for ~ 30 years was gone. To function, the institute's research had to be funded project-by-project by a variety of national and state funding agencies. The CSI Field Support Group expanded to meet the challenge of new technology utilized on a variety of new problems in both shallow and deep water. Capabilities in high resolution seismic and side-scan sonar were developed in parallel with use of cutting edge oceanographic sensors. During this period scientific achievements were made in shelf circulation and the dynamics of sea straits as well as the sedimentology of muddy coasts and the marine geology of mixed siliciclastic-carbonate shelves. In 1987, the Earth Scan Laboratory (ESL) was established within CSI to become the first NOAA AVHRR satellite receiving station in the Gulf Coast. Since then, the ESL has steadily improved remote sensing capability at LSU. Now, ESL acquires SeaWifs, MODIS, GOES-8, and RADARSAT data in addition to NOAA AVHRR. Programs in numerical modeling of waves and currents are currently developing for application to both shallow and deep water research problems. Most recently a number of real time ocean observing stations under the program name WAVCIS (Wave-Current Surge Information System) have been deployed along the Louisiana coast. Data from these stations have already provided insight into the oceanographic response to various types of storms, data critical for evaluating potential impacts to Louisiana's coast. Critical problems of land loss and coastal change in Louisiana need the attention of well-trained coastal scientists now and in the future. The Coastal Studies Institute at LSU remains a repository of experienced personnel for addressing these and other basic and applied science problems.