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Through research, popular and scientific publications, education of graduate students, invited lectures and shortcourses, organization of national and international meetings, and as an editor and contributor to leading textbooks, Dr. Lanier has stimulated and directed development of a domestic and international surimi and processed meats industries. The work on surimi in particular has spurred a greater quality consciousness in the entire fishing/fish processing industry due to the high commitment to quality required for production of surimi. He co-developed a torsion test for evaluating surimi gel-forming ability (now codified in Codex Alimentarius) that has wide applicability to testing of most food gels. His work with transglutaminase and beef plasma resulted in creation of the American formed scallop industry and is presently assisting a new raw crab product industry to emerge. This past few years his program has focused on development and commercialization of the pH shifting method for recovering and refining muscle proteins, and exploration of this material as a key marinade component for moisture retention and improvement of meat succulence, particularly in PSE, twice-frozen, and other partially damaged meats. His work on microwave rapid heating holds much promise for better throughput, process control, lower equipment footprint, and efficient processing of many gel- and emulsion-type meat, poultry and seafood products as a better understanding is gained of how the protein gel develops in this environment. His fundamental work seeks to understand how proteins and water interact to affect structure of food gels and their waterholding and textural properties, and how water structuring is involved in protein stability. His laboratory has conducted seminal work on the cryoprotection and stabilization of proteins to other denaturing environments such as heat and pressure, and on factors relating to the inhibition of proteases active in muscle food systems.