

GRADUATE SEMINAR NOTICE

DEPARTMENT OF LIFE SCIENCES

TEXAS A&M UNIVERSITY-CORPUS CHRISTI

SUBJECT: Incidence and Distribution of *Vibrio vulnificus* in South Texas Coastal Waters

SPEAKER: Gabriel D. Ramirez

DATE: July 22, 2008

TIME: 10:30 AM – 11:30 AM

PLACE: Center for Sciences 112 (CS-112)

ABSTRACT

Vibrio vulnificus, a marine pathogen, has been linked to several cases of severe illness or death from wound infections in Texas. Although there have been a number of studies investigating the distribution of this organism in various estuaries in the U.S., there is a lack of information on its prevalence in south Texas coastal waters. Thus, a one-year study was conducted at six sites, using multiple regression analyses to evaluate environmental factors affecting concentrations of *V. vulnificus*. Field sampling was conducted monthly from August, 2006, through July, 2007. Concentrations of *V. vulnificus* were also compared with those of the fecal indicator, *Enterococcus* sp., to determine whether the indicator could be used to predict elevated *V. vulnificus* levels. *V. vulnificus* and *Enterococcus* sp. were enumerated from each water sample using three selective media. Isolates of *V. vulnificus* using *Vibrio vulnificus* Agar (VVA) were confirmed using colony hybridization with a specific alkaline phosphatase-labeled gene probe that targets the cytolysin gene, *vvhA*. *V. vulnificus* was isolated from each site for each sampling event. Concentrations determined by isolation using VVA were correlated with water temperature and dissolved oxygen, whereas levels based on isolation using mCPC were correlated with salinity and Secchi disk (turbidity). *V. vulnificus* numbers correlated with *Enterococcus* sp. using both types of media (VVA and mCPC). Multiple regression analyses indicated that levels of *V. vulnificus* were influenced by water temperature, salinity, and Secchi disk (turbidity). Water temperature and salinity accounted for 48% of the variability in the concentration of *V. vulnificus* isolated using VVA, whereas salinity and Secchi disk accounted for 22% of the variability in the concentration of *V. vulnificus* isolated using mCPC. The pathogen, *V. vulnificus*, was ubiquitous in the marine waters sampled in the Coastal Bend region of the Texas coast.