

An aerial photograph of a river delta, likely the Colorado River Delta, showing a complex network of channels and wetlands. The text is overlaid on the image in white, bold, sans-serif font.

**ENVIRONMENTAL SCIENCE and ENGINEERING
PRESENTS:**

**Climate Change Effects at the Land-Sea Interface:
Impacts on Watershed Export and Coastal
Ecosystems**

**Dr. James McClelland
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Austin**

**Friday, September 25, 2015
12:00-1:00PM
AET 0.204**

SUMMARY: The quantity and quality of fresh water that flows from land into the coastal ocean is tightly coupled to climate conditions. As a consequence, changes in climate (particularly temperature and precipitation) impact estuarine ecosystems. This presentation will include a general overview of the mechanisms linking climate, river flow, and estuarine ecosystem dynamics. It will then focus in on climate impacts in the Arctic. While human activities such as agriculture and urbanization often overwhelm climate impacts on freshwater inflows and estuarine ecosystem dynamics at lower latitudes, studies of Arctic systems allow us to focus on climate effects in isolation of other, more direct, human impacts. The Arctic is also of particular interest because air temperatures are rising at a faster rate than the global average, and release of carbon and other nutrients from thawing permafrost (perennially frozen ground) has the potential to substantially alter coastal ecosystem function.

BRIEF BIOGRAPHY: Dr. James McClelland received a Ph.D. from Boston University in 1998, and conducted postdoctoral work at the University of East Anglia, Georgia Institute of Technology, and Marine Biological Laboratory (Woods Hole) between 1998 and 2003. He then worked as a research scientist at the Marine Biological Laboratory for four years, and joined the faculty at the University of Texas at Austin, Marine Science Institute in 2006. He is currently an Associate Professor at the Institute. His research focuses on biogeochemistry of rivers and estuaries. He is particularly interested in 1) how changes on land influence transport of water and water-borne materials into estuaries, and 2) how changes in land-derived inputs alter the biogeochemistry and ecology of coastal ecosystems.