

- **Name:** Kurt A. Gust
- **Grade:** DB 04
- **Classification:** 0401 Research Biologist
- **Title:** Research Biologist, Interim Team Leader of the Environmental Genomics Team, Environmental Processes Branch, Environmental Processes & Engineering Division, Environmental Laboratory, ERDC.



- **Duties:** Dr. Gust has served as principal investigator for multiple Army Basic Research Projects, two Work Units within the Systems Biology Focus Area, four work units of the Munitions Impacts on Biological Networks Focus Area, and a Navy-Funded Reimbursable Project. He has expertise in systems biology, genomics, toxicogenomics, bioinformatics, ecotoxicology, and environmental chemistry which he uses to decipher the systemic impacts of contaminants of concern to the DoD in a variety of ecological receptors.

- **Biographical Sketch:** Dr. Gust earned a BS in Biology from Saginaw Valley State University and a PhD in Biological Sciences from Louisiana State University. Dr. Gust conducts research investigating the effects of munitions constituents (MCs) and other environmental stressors on ecologically-relevant biological receptors. Due to the complex nature of how organisms respond to stressors, coupled with the limited knowledge of the mechanism(s) that underlie stressor effects, Dr. Gust and his colleagues are developing innovative new strategies for their assessment. The use of genomic technologies including cDNA library construction, next-generation DNA sequencing, bioinformatics infrastructure development, and microarray-based transcriptomic analysis provide the tools to examine gene expression patterns for tens of thousands of genes per individual. Dr. Gust and colleagues then utilize gene ontology, functional pathway analysis, and analysis of gene networks in a systems biology approach to yield mechanisms of action for stressors, as well as provide select genomic biomarkers for use in stressor assessment in natural populations inhabiting affected environments.