

MarTREC UTC Project Information Form
USDOT Tier 1 University Transportation Center
Agency ID or Contract Number 69A3551747130

Project Title: Trade-Off Analytics for Infrastructure Preservation
Project Abstract (Brief Description): The objective of this project is to develop a course that could be taught to Civil Engineers, Industrial Engineers, and the maritime and multimodal infrastructure community on the use of trade-off analytics as a tool to assist them in their infrastructure preservation efforts. This course will also be packaged into a webinar that could be delivered on-line for practicing professionals. This course will build on existing best practices defined by the International Council on Systems Engineering. The course builds on ongoing work that uses Value Focused Thinking (VFT) and Multiobjective Decision Analysis (MODA) to structure complex program portfolio decisions requiring trade-offs between stakeholder objectives. The course will focus on identifying stakeholders, framing decisions, developing objectives and value measures, generating alternatives, prioritizing the objectives, developing a value model, developing a cost model, evaluating alternatives, analyzing the model, making meaningful trades between cost, value and risk, and communicating the results. The course will build their cases and examples based on the types of problems and trade-offs current maritime engineers are facing with their infrastructure. The course will be constructed so that it could be taught as a short course for working professionals or as a special topics graduate or undergraduate course.
Describe Implementation of Research Outcomes (or why not implemented) - Place any photos here <i>To be determined upon conclusion of the project:</i>
Impacts/Benefits of Implementation (actual, not anticipated) <i>To be determined upon conclusion of the project:</i>
Web Links: martrec.uark.edu
Budget (Funding) Amounts & Source(s) (US DOT +Match(s) =Total Costs): \$64,000 from MarTREC and \$32,000 academic salary. Total \$96,000
Project Start and End Dates: 08/13/18-12/31/19. Project complete.
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Principal Investigator Institution (University): University of Arkansas