Request for Research Funding for FY 2019-2020			
Requesting Office	State Materials	**Priority**	11 of 11 (projects may not have the same ranking – no ties)
Proposed Title	Assessment of Structural Steel Coating Applications		
Justification	The Department's transportation infrastructure includes hundreds of bridges with structural steel elements. To alleviate corrosion concerns, these elements are typically coated by FDOT approved high-performance coating systems. However, recent research has identified several instances of premature degradation of such coatings. Based on a survey of the FDOT Work Program between 2004-2015, approximately 20% of Florida's steel bridges required repainting after less than 20 years of service. This results in a significant maintenance expenditure for the Department; approximately $25M spent annually on repainting. Based on this evidence of premature coating failures, an assessment of the factors contributing to premature coating failures is necessary to enable the identification of potential areas where the Department can improve how coating materials and application requirements are specified. These contributing factors may include level of steel surface preparation (SP-6 vs SP-10), type of coating system, and service conditions (environment). Unfortunately, this information is not readily available for assessment throughout the state. Research is needed to gather, catalog and assess historical data available at the District level with the goal of creating a database capable of identifying and correlating the factors that result in premature coating failures. Furthermore, the research will provide recommendations on data that should be required input for an effective, electronic database on all new construction and maintenance projects with coating related activities.		
Impact	The expected benefit of decisions based on the results (such as specification changes) is longer service of coatings, thus significant reduction in annual maintenance costs related to coating failures.		
Affected Offices	Materials, Maintenance, Construction		
Existing Work	No existing work found in TRID (https://trid.trb.org/Results) or RIP (https://rip.trb.org/)		
Keywords Used In Existing Work Search **(Cannot leave blank)**	Coating, Steel, Bridge, Failure, Service Life		
Related Contracts (Give contract numbers)	BDV29-977-22		
Funding Request	$100,000	**Anticipated Duration**	12 months
Project Manager	Chase C. Knight	**Contracting Method**	RFP to universities only
Urgency	2	The rate of premature coating failures based on previous work indicates that this issue needs to be addressed within the next 2-4 years.	
Implementability	1	Results will directly drive decisions on necessary specification change(s)	

Project Benefits (Succinct, complete explanation)

Coatings on steel bridges will last longer (in line with expected service life) and less money will be spent on repainting work.

Project Benefits **(Select all that apply and explain)**	**Quantifiable Benefits (units, dollars, etc…if applicable)**	**Methodology or Data Sources Used to Determine Quantifiable Benefits. If not applicable, please give justification of project benefits**
o Materials Enhancement		
o Materials Savings		Reduced need for coating materials due to less repainting
o Time Savings		Reduced time spent on repainting
o Lives Saved/Injuries Prevented		
o Other (Explain)		