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**TITLE: ASER Multicenter Review of Blunt Splenic Trauma: Optimal CT Diagnosis, Characterization and Treatment.**

**Principal Investigators:** James Lee MD; Christina LeBedis MD; Jennifer Uyeda MD

**Co-Investigators:** Currently Enrolling

As the members of the ASER are readily aware, the spleen is one of the most common solid abdominal organs injured during blunt abdominal trauma. Management of injuries ranges from conservative observation to emergent surgery. Treatment guidelines continue to shift from observation, to mainly surgery and most currently selective operative management. In 2012, the Eastern Association for the Surgery of Trauma (EAST) published management guidelines for selective non-operative management of blunt splenic injury. CT imaging is the modality of choice for evaluation of patients with suspected splenic injury. Radiologists play a crucial role in evaluating and triaging the patients to the next appropriate management steps.

Our project will assess the effects of imaging protocols in the detection of splenic vascular injuries and their effects on patient management and outcomes. Additionally, this proposal will assess inter- and intra-reader agreement utilizing the AAST and modified CT grading systems for splenic injury. This proposal addresses the first two high priority goals identified by the National Science and Technology Council convened Interagency Working Group on Medical Imaging: standardization of image acquisition and storage and application of big-data and data-science concepts. The proposal will leverage the following to strengthen discovery and innovation by:

- Multi-center collaboration
- Standardization
- Assessment of Clinical Outcomes
- Web-based storage and visualization
- Double blind reading with adjudication for discrepant cases

Our primary aims are as follows

- 1 – Determine how imaging protocols influence grading of splenic trauma and what effects they have on patient outcome.
- 2 – Determine the inter-reader and intra-reader agreement for grading of splenic injuries utilizing the AAST and modified CT grading scales.
- 3 – Determine the role of AI in identification and grading of splenic trauma with heterogeneous imaging parameters.