SMART ROCKS FOR INTEGRATED MONITORING AND MITIGATION OF BRIDGE SCOUR READY FOR TRIAGE

Scour is a process in which a fluid erodes material supporting a structure. When scour occurs near a bridge, the associated erosion can cause that bridge to collapse. Bridge collapses occur in hours or days. To prevent them, scour must be monitored and its mitigation strategy must be developed in real time. This invention introduces magnetic embodiments with sensors, a *smart rock system,* to tackle the grand challenge of scour monitoring and mitigation in *real time*. The smart rock system can facilitate an evaluation of the critical scour condition of bridges and reduce damage and loss of life from bridge failures caused by scour.

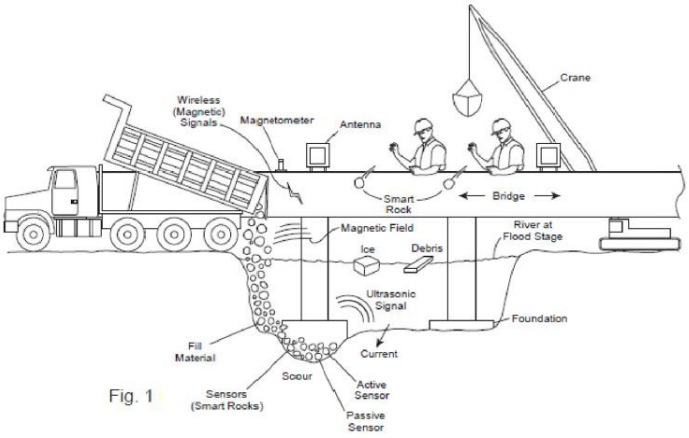

Fig. 1

POTENTIAL AREAS OF APPLICATIONS:

- Applied for existing bridges
- Applied for new construction
- Tracking rocks that can also be used to stabilize bridge foundations.

PATENT STATUS: Provisional Patent Application Filed

INVENTOR(S): Genda Chen; David J. Pommerenke; Zhi Zhou; Ying Huang
CONTACT INFO: Keith Strassner; kdstrass@mst.edu; 573-341-6725
Eric Anderson; ericwa@mst.edu; 573-341-4551; Vera Anderson; vera@mst.edu; 573-341-7263