

## ERC Team Partners with Stakeholders on Technology to Treat Agriculturally-Impacted Waters

**Outcome/accomplishment:** The Center for Bio-mediated and Bio-inspired Geotechnics (CBBG), an NSF-funded Engineering Research Center (ERC) headquartered at Arizona State University (ASU), is partnering with industry and community stakeholders to test a new technology using steel slag to reduce phosphorus and nitrate levels in ground and surface water on agricultural lands.

**Impact/benefits:** The removal of nitrogen and phosphorus from wastewater is an emerging worldwide concern. Too much of these elements can lead to toxic algae blooms, harming water quality, food resources, and natural habitats. The technology developed by the Center shows promise for removing these elements from ground and surface water.

**Explanation/background:** The Center demonstrated a proof of concept for removing nitrogen and phosphate using steel slag in the lab. A new industry partner, Geo-Logic Associates, joined CBBG to advance development of this biogeotechnology toward testbed deployment. The Center led the design and implementation of a full-scale testbed at a field site in Beaver Dam, Wisconsin, and Geo-Logic Associates provided substantial in-kind civil design services.

Local farmers, field specialists, and college students are providing the demonstration site, field services, and data collection for the project. The project is also engaging local community groups, such as the Fox Lake Protection & Rehabilitation District, and has attracted the attention of the Wisconsin Department of Natural Resources.



*Design of field-scale testbed with in-kind support from local industry partners. (Photo credit: CBBG)*