

Bacteria Source Tracking and Identification Resources

Possible Funding Sources:

- Five Star and Urban Waters Grant Program
 - Due end of January 31st of each year
 - Description: Projects include a variety of ecological improvements along with targeted community outreach, education and stewardship. Ecological improvements may include one or more of the following: wetland, riparian, forest and coastal habitat restoration; wildlife conservation, community tree canopy enhancement, and water quality monitoring and stormwater management. Projects should also increase access to the benefits of nature, reduce the impact of environmental hazards and engage local communities, particularly underserved communities, in project planning, outreach and implementation.
 - Available at: <http://www.nfwf.org/fivestar/Pages/2018rfp.aspx>
- TCEQ Non-Point Source Grant (319)
 - Applications are due July 31st of each year
 - Description: To be eligible for funding, a project must address the objectives, goals and/or priorities identified in the 2017 Texas Nonpoint Source Management Program or NPS elements in the 1998 Texas Coastal Nonpoint Source Pollution Control Program Exit the TCEQ. Priority is given to the development and implementation of watershed protection plans. Local stakeholder groups guide the development of these plans to restore and protect water quality in specific Texas waterways. This planning process commonly involves gathering and/or assessing water quality data and using models to determine the causes and sources of pollution, followed by strategic selection of management measures to assure the water bodies meet water quality standards. Half of this grant program's funding must be spent to implement federally accepted watershed plans. Other eligible activities include: Education and outreach to address NPS pollution; implementation of both technology-based and water quality-based management measures to address NPS pollution - for example, low impact development installations, riparian or shoreline restoration, and repair or replacement of failing septic systems.
 - Available at: <https://www.tceq.texas.gov/waterquality/nonpoint-source/grants>
- Healthy Watersheds Consortium Grants (HWCG)
 - Applications are due February 1st of each year
 - Description: The Healthy Watersheds Consortium (HWC), a partnership between the U.S. Endowment for Forestry and Communities, the U.S. Environmental Protection Agency, and the USDA Natural Resources Conservation Service, has called for 2018 Request for Proposals. The goal of the HWC Grant Program is to “accelerate strategic protection of healthy, freshwater ecosystems and their watersheds”, with primary focus on prevention of land deterioration in the watershed by: Developing

funding mechanisms, plans, or other strategies to implement large-scale watershed protection, source water protection, green infrastructure, or related landscape conservation objectives; Building the sustainable organizational infrastructure, social support, and long-term funding commitments necessary to implement large-scale protection of healthy watersheds; and Supporting innovative or catalytic projects that may accelerate funding for or implementation of watershed protection efforts, or broadly advance this field of practice.

- Available at: <https://www.epa.gov/hwp/healthy-watersheds-consortium-grants-hwcg>
- EPA Water Research Grants
 - Multiple grants with varying deadlines and objectives
 - <https://www.epa.gov/research-grants/water-research-grants>
- Cynthia & George Mitchell Foundation
 - Grant supports several programs in Texas, including: Clean Energy, Cook's Branch Conservancy, Galveston, Land Conservation, Shale Sustainability, Sustainability Education, and Water
 - Only funds 501(c)(3) organizations
 - A letter of inquiry must be submitted prior to grant application
 - Available at: <http://cgmf.org/p/home.html>

BST Institutions and Researchers

Texas Water Resources Institute (TWRI) – AgriLife, Bacterial Source Tracking Program

- <http://texasbst.tamu.edu/>
- Contacts: Dr. George Di Giovanni ([CV](#)), Professor (George.D.DiGiovanni@uth.tmc.edu), and Dr. Terry Gentry ([CV](#)), Assistant Professor (tgentry@ag.tamu.edu)
- One page fact sheet: http://texasbst.tamu.edu/media/598768/bst_4-21-15.pdf
- BST program overview: Users can submit water samples for BST, which are compared to the Texas BST Library
- Study Conducted in 2002 in Lake Wako and Lake Belton: <http://twri.tamu.edu/publications/txh2o/fall-2015/a-decade-of-solving-water-quality-mysteries/>
 - Used a 319 grant
 - Used BST to identify human and animal sources impacting the lakes
 - Cattle contributed ~13%, and 40-49% from wildlife sources
 - Have done 18 studies in 14 watersheds since then

Texas Institute for Applied Environmental Research (TIAER) - Tarleton State University

- Contacts: Dr. Larry A Redmond ([CV](#)), Dr. Larry Hauck ([publications](#))
 - Partners with TWRI
- TIAER has libraries, but information is not widely available online

BST Literature in Texas:

- [Bacterial Source Tracking to Support the Development and Implementation of Watershed Protection Plans for the Lampasas and Leon Rivers: Lampasas River Watershed Final Report](#)
- [Texas BST Program Refinement, Expansion and Use–FY15](#)
- [Exploration of Library-Independent BST for Texas \(video\)](#)
- [Expansion and Evaluation of Texas' Bacterial Source Tracking Program](#)
- [Support Analytical Infrastructure and Further Development of a Statewide Bacterial Source Tracking Library](#)
- [Final Report: Upper and Lower San Antonio River, Salado Creek, Peach Creek and Leon River Below Lake Proctor Bacterial Source Tracking Project \(paper copy only\)](#)
- [Assessment of Bacterial Sources Impacting Lake Waco and Belton Lake](#)
- [Bacterial Source Tracking \(BST\) Results, Watershed Protection Plan Development for Buck Creek, FY 06](#)
- [Increased Analytical Infrastructure And Further Development of a Statewide Bacterial Source Tracking Library](#)
- [2012 Bacterial Source Tracking: Conference Proceedings](#)
- [Support Analytical Structure and Further Development of a Statewide Bacterial Source Tracking Library](#)
- [Bacterial Source Tracking: Cypress Creek Project](#)
- [SARA Presentation on BST, April 1, 2016](#)
- [Improved Stakeholder Awareness Leads to Water Quality Restoration in Buck Creek: Section 319 Nonpoint Source Program Success Story](#)
- [Allocation Support Document for Total Maximum Daily Loads for Indicator Bacteria in the Lower West Fork Trinity River](#)