The following 2018-2019 teaching-related grants were provided by our TSHS members.

1. **Title:** Expanding National Capacity in PCOR through Training (ENACT)  
   **Contributor:** Douglas Landsittel (PI)  
   **Funding Agency:** Agency for Healthcare Research and Quality  
   **Dates:** 07/01/2014-06/30/2020  
   **Objectives:**  
   (1) Implement innovative online modules on basic and advanced PCOR methods.  
   (2) Sponsor a one-year fellowship with experiential learning onsite to complete a PCOR project.  
   (3) Facilitate and support networking and mentoring relationships.  
   (4) Enhance long-term PCOR infrastructure at the six Minority-Serving Institutions by developing a Leadership Circle.  
   More information can be found [here](#).

2. **Title:** SMILES: Student-Made Interactive Learning with Educational Songs for Introductory Statistics (Collaborative proposal)  
   **Contributor:** Larry Lesser (PI)  
   **Funding Agency:** NSF Division of Undergraduate Education (DUE)  
   **Dates:** 09/15/2015-08/31/2020  
   **Objective:** Develop and assess online interactive song resources (see causeweb.org/smiles) aligned with learning objectives in introductory statistics  
   More information can be found [here](#).

3. **Title:** Building a Statistics Education Program for Preclinical Cancer Researchers  
   **Contributor:** Jaya Satagopan (MPI)  
   **Funding Agency:** National Institutes of Health / National Cancer Institute  
   **Dates:** 09/01/2019-08/31/2021  
   **Objective:** In the past decade, the cancer research community has made considerable progress in characterizing the genomic features of human tumors. Knowledge of molecular drivers of cancer has therefore increased greatly. Although the oncology community hoped that this would lead to more effective therapies, our ability to translate laboratory cancer research into clinical success has been remarkably low - only 5% of the agents demonstrated to have anticancer activity in laboratory studies went on to achieve success in phase III clinical trials. Many factors are responsible for this disturbingly high percentage of failures, including misuse or misunderstanding of statistical design and analysis concepts, interpretation, and reporting methods. Although correctable, these issues are widely prevalent in the cancer biomedical research enterprise. Another concern is that statistics training is not a required component of graduate programs in biomedical sciences. Recognizing the seriousness of these issues, the National Institutes of Health has called for the full engagement of the entire biomedical research enterprise to implement the resources needed to improve and sustain the statistical rigor and successful translation of preclinical cancer research. To this end, we propose to develop a statistics curriculum for early-career preclinical cancer researchers (i.e., postdoctoral researchers) conducting laboratory research at Memorial Sloan Kettering Cancer Center as well as the broader research community. Our proposed curriculum will be delivered over a 10-week period with one 90-minute class per week in a flipped classroom format, where lecture notes will be disseminated one week prior
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Heather J. Hoffman, PhD, The George Washington University
TSHS Publications Officer

to each classroom contact and classroom time will be dedicated to hands-on activities with experimental designs, data analysis and participatory dialogues. We will develop a plan for evaluating our proposed curriculum and make all the resources available to the broader statistics and cancer research communities.

More information can be found here.

4. **Title:** The Data Science WAV: Experiential Learning with Local Community Organizations  
**Contributor:** Nicholas Horton (MPI)  
**Funding Agency:** NSF  
**Dates:** 10/01/2019-09/30/2022  
**Objective:** This project simultaneously addresses two problems: 1) the inability of community-based and non-profit organizations to tackle data science problems; and 2) the lack of real-world experience gained by students studying data science. The increased availability of data, combined with increased computing power at lower costs, has brought to the desktop tremendous analytical and problem-solving capabilities. Yet many organizations are not able to take advantage of these developments because they often lack appropriate staffing to wrestle with complex data science problems. Meanwhile, as students increasingly gravitate toward data science programs, much of their course-based problem-solving experience focuses on clean problems with simple data sets. This leaves them unprepared for the reality of the data science applications they will face in professional settings. This project addresses both issues by deploying teams of data science students to assist local organizations, thereby increasing the long-term capacity of the data science workforce. This is a multifaceted project that will provide immediate impact to local organizations and long-term benefit for students through valuable hands-on data science experience. There are two major components of the proposed project. First, Data Science WAV teams of four specially trained undergraduate students will be deployed to community-based organizations to Wrangle, Analyze, and Visualize their data. Second, this project will offer summer faculty development workshops designed to help new instructors, especially those at community colleges, teach data science at their institutions. Curricular innovations that bring experiential data science learning into the curriculum will lead to sustained impact at the partnering academic institutions and in the larger Pioneer Valley region. This proposal is diverse across both institutions and student populations. It comprises one major research university (The University of Massachusetts, Amherst), four liberal arts colleges (Amherst, Hampshire, Mount Holyoke, and Smith), and three local community colleges (Greenfield, Holyoke, and Springfield Technical). The inclusion of two women's colleges (Smith and Mount Holyoke) and two Hispanic-serving institutions (Holyoke and Springfield Technical) will help ensure that a diverse student population is engaged in the project. NSF's Harnessing the Data Revolution Data Science Corps program focuses on building capacity for harnessing the data revolution at the local, state, national, and international levels to help unleash the power of data in the service of science and society. Projects in this program are being jointly funded by the NSF's Harnessing the Data Revolution Big Idea; the Directorate for Computer and Information Science and Engineering, Division of Information and Intelligent Systems; the Directorate for Education and Human Resources, Division of Undergraduate Education; the Directorate for Mathematical and Physical Sciences, Division of Mathematical Sciences; and the Directorate for Social, Behavioral and Economic Sciences, Office of Multidisciplinary
Activities and Division of Behavioral and Cognitive Sciences. This award reflects NSF’s statutory mission and has been deemed worthy of support through evaluation using the Foundation’s intellectual merit and broader impacts review criteria. More information can be found here.

We would like to thank all our contributors. We look forward to seeing more grants in 2020!