

# Behavioral Traffic Safety Cooperative Research Program

FY2018

December 2017

## Announcement of Research Projects

A forum for coordinated and collaborative research, the **Behavioral Traffic Safety Cooperative Research Program** (BTSCRCP) is a partnership between the Governors Highway Safety Association (GHSA), the National Highway Traffic Safety Administration (NHTSA), and The Transportation Research Board (TRB). The BTSCRCP develops practical solutions to save lives, prevent injuries, and reduce costs of road traffic crashes associated with unsafe behaviors.

Anyone can write or contribute to preparing a problem statement. However, problem statements must be endorsed by a State Highway Safety Offices, GHSA Executive Board members, GHSA Committees, or NHTSA to be eligible for consideration.

Submitters are strongly encouraged to do a literature search, before submitting, to ensure the problem hasn't been solved or isn't being studied already. NHTSA and TRB staff will review the submitted research project problem statements and provide feedback to the Governing Board. The Governing Board gives final approval of the annual research projects.

Once the research projects are approved, TRB assigns the problem statements to technical panels of experts who provide guidance on the technical aspects of the research and translate the

problem statements into BTSCRCP research Requests for Proposals (RFPs) with well-defined objectives. On the basis of these statements, TRB solicits research proposals from private and public research organizations that can demonstrate capability and experience in the problem area to be researched.

The technical panel of experts reviews the proposals, recommends contract awards, monitors research in progress, provides technical guidance, and reviews reports for acceptability and for accomplishing the research plan. They also provide counsel to TRB staff in matters of overall project administration. Selected agencies perform research under contract to the National Academies of Science, Engineering, and Medicine, guided by the *Procedural Manual for Contractors Conducting Research in the Transportation Research Board's Cooperative Research Programs*. Proposals will be rejected if they are not prepared in strict conformance with the section entitled Instructions for Preparing and Submitting Proposals.

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*Behavioral Traffic Safety Cooperative Research Program  
Projects in the Fiscal Year 2018 Program*

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**Problem Statement Number: 2018-01**

**Title: Evaluate Workforce Motivational Programs: Safety Citizenship**

**Research Area:** Occupant Protection

**Background:**

Typically, more than 30,000 people die annually on U.S. roadways. (1) Many of these fatalities are related to occupational driving. Notably, “motor vehicle crashes killed more than 1,600 people and injured 293,000 while they were working in 2013” and “more than half of the injuries forced people to miss work”. (2)

While engineering solutions have significantly reduced traffic-related fatalities in recent decades, road user behavior remains the most common risk factor associated with traffic crashes. Traditional traffic safety strategies focus on seeking change within the persons engaging in these risky behaviors. A new approach adapted from organization safety is to empower those road users who behave safely to influence and support the safety of those road users engaging in risky behaviors. This strategy is known as “safety citizenship.” (3,4,5)

Previous research on traffic safety citizenship revealed that the perception of whether most people do intervene (e.g., the perceived descriptive norm) is strongly correlated with intervening behavior. (6) Further, people’s sense of comfort and confidence to intervene is also correlated with intervening. (6) Applying these research findings in a real-world setting is essential; however, questions about what specific interventions workplaces should implement to bolster their employees’ comfort and confidence to engage in protective traffic safety citizenship behaviors and to grow the perception that speaking up is typical remain.

The proposed research project seeks to address these questions by developing and testing a specific intervention suitable for a workplace to grow traffic safety citizenship regarding a traffic safety issue that is an identified priority for the workplace. Research suggests that there are opportunities to grow traffic safety citizenship. (6)

**Objective:**

Identify and evaluate the efficacy of workplace motivational programs in increasing seatbelt usage. The final products should include recommended best practices and the research should include a review of programs aimed at other forms of behavioral modification, including anti-smoking or drinking and driving.

**Research Method:**

The BTSCRCP is seeking the insights of proposers on how best to achieve the research

objectives. Proposers are expected to describe research plans that can realistically be accomplished within the constraints of available funds and contract time. Proposals must present the proposers' current thinking in sufficient detail to demonstrate their understanding of the problem and the soundness of their approach to meeting the research objective.

The work must be divided into tasks and proposers must describe the work proposed in each task in detail.

The research plan should build in appropriate checkpoints with the BTSCRIP project panel including, at a minimum: (1) a kick-off teleconference meeting to be held within 1 month of the contract's execution date, and (2) at least two face-to-face interim deliverable review meetings as well as web-enabled teleconferences tied to panel review and BTSCRIP approval of any other interim deliverables deemed appropriate.

The final deliverables should include: (1) the (main product) as a stand-alone document; (2) a final report that documents the entire research effort; (3) an executive summary in the final report that outlines the research results; (4) a Microsoft® PowerPoint presentation describing the background, objectives, research method, findings, and conclusions, and (5) all data collected as part of the research.

The research team will be expected to present the results, at a minimum of two meetings of GHSA or other relevant national organizations to be determined by the BTSCRIP.

**Recommended Funding:**

For proposed objective: \$350,000

**Problem Statement Number: 2018-02**

**Title: Variable Message Signs**

**Research Area:** Public Information Campaigns

**Background:**

A variable (VMS), also referred to as changeable, electronic, or dynamic message signs are programmable signs used on highways throughout the US. These signs provide drivers with information relating to traffic updates, roadwork warnings, traffic crashes, and other traffic and safety-related information. Use of VMS's began in the early 1950. Since that time, extensive research has been conducted on traffic-related messages.

Non-traffic-related messages (i.e. Don't Drink / And Drive, Click It or Ticket, etc.) were first displayed on VMS around 2009-10. Tennessee was one of the first states to use VMSs to show the number of roadway fatalities. Today there are numerous states that use this technology as an expansion of their public awareness program.

There have been at least three studies investigating the usefulness and effectiveness of safety and public service announcement messages on dynamic message signs (DMS).

Two were pooled-fund research projects sponsored by the Federal Highway Administration (“Effectiveness of Safety and Public Service Announcement Messages on Dynamic Message Signs,” and “Public Perception of Safety Messages and Public Service Announcements on Dynamic Message Signs in Rural Areas.”) and the other by the California Department of Transportation (An Evaluation of the Consequences and Effectiveness of Using Highway Changeable Message Signs for Safety Campaigns.”) Various questions addressed in these studies were identifying how safety and public service announcement messages influence driver behavior, assess how attentive the public is to the message, and identify how various agencies could optimize the utility of safety and PSA messages on DMS.

General results of these studies suggest:

- (1) most respondents reported they do see and understand safety and PSA messages on the DMS and they raise their awareness of the safety issue
- (2) majority reported that safety and PSA messages are useful and some felt they are more effective than other media such as television
- (3) selected respondents indicated that a more threatening connotation (i.e., “100 deaths this year on Texas roads) or assertive language would impact their driving behavior
- (4) greater exposure to safety and PSA messages were considered more effective
- (5) safety and PSA messages were considered useful for respondents older than 60 with some graduate school or post-graduate degree but were not perceived effective for males with lower incomes and younger than 30 years old
- (6) positive safety effects may be derived when the public is familiar with and understands the message displayed

Behavior change is of particular interest. The FHWA study assessing the effectiveness and potential benefits of posting PSAs in rural areas stated “approximately 23 percent of travelers reported changing their driving behavior after seeing the posted message; however, 54 percent of respondents indicated that seeing safety campaign messages on DMSs in the past had caused them to change their driving.”

These studies give us a sense of the benefits of displaying safety and PSAs on variable message signs. There are, however, many unanswered questions about this practice. This study has the potential to address several of these questions. They include: which states display safety and PSA messages on VMS, how are messages selected, what messages are currently being used, when and where are the messages displayed, what administrative policies and procedures regulate this initiative and what are the barriers hampering optimal implementation of this practice?

Ultimately providing answers to these questions will help guide State Highway Safety Offices in identifying best practices and maximizing the use of variable message signs to enhance awareness of safety messages and potentially alter driver behavior.

**Objective:** To summarize the current state of the practice, best practices, process and procedures, and barriers to implementation of putting safety messages and public service announcements on variable message signs?

**Research Method:**

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The research team will be expected to present the results, at a minimum of two meetings of GHSA or other relevant national organizations to be determined by the BTSCRCP.

**Recommended Funding: \$350,000**

**Problem Statement Number: 2018-03**

**Title: Primary Handheld Bans vs. Texting Bans**

**Research Area: Distracted Driving**

**Background:**

Current data indicates that there isn't much difference for safety reasons between hands-free and just having a primary offence texting law. However, law enforcement says that without hands-free it's very difficult to enforce a texting law. Is strong enforcement enough to change driving habits?

**Objective:**

Determine whether the enforcement of a hands-free cell phone law with primary enforcement for all drivers is more effective than just a texting ban with primary enforcement for all drivers. The research methodology must control for all variables including the existence or absence of public awareness campaigns.

**Research Method:**

Since there have been a number of studies addressing this topic, care should be taken to clarify how the research is going to address a research gap. Coordination with NHTSA will be important to assure this research is not duplicative.

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The research team will be expected to present the results, at a minimum of two meetings of GHSA or other relevant national organizations to be determined by the BSCRCP.

**Recommended Funding: \$250,000**

**Urgency and Payoff Potential:**

This is important for states who are considering hand-free laws. If there is no difference then states shouldn't try to change their primary laws. We just don't believe the research we currently have on this subject.

**Problem Statement Number: 2018-04**

**Title: State Trends in Adjudication and Enforcement**

**Research Area: Law Enforcement Techniques**

**Background:**

Highway safety is an incredibly important topic for state and federal agencies. While federal agencies (e.g. Federal Highway Administration, National Highway Traffic Safety Administration, and Federal Motor Carrier Safety Administration) monitor highway safety trends, it is state law enforcement agencies that enforce highway safety laws and regulations, and state courts that adjudicate traffic tickets. Although we have a lot of information about traffic caseloads, it is often difficult to directly compare state adjudication of common traffic offenses due to the difficulty of obtaining specific cross-sections of court data. We know that there is a lot of variation in the traffic caseload by state, but very little about how those cases are disposed of, and how states compare for particular types of offenses. According to the Court Statistics Project at the National Center for State Courts, the number of cases per 100,000 residents ranged from 1,932 (MA) to 56,499 (NJ) in 2015, depending on the state.

Given these far-reaching differences in the propensity of state law enforcement agencies to issue traffic citations, one would also expect similar differences in adjudication in state courts. However, it is hard to obtain this type of information for several reasons. First, each state has a uniquely designed court system, and not all traffic cases are heard in the same kind of state court. Depending on the state, traffic cases are heard in courts of general, single, and limited jurisdiction. Second, each state has different types of statutes, criminal codes or methods of identifying and describing traffic infractions. Because of driver's license reciprocity across states, there is a way for state driver licensing agencies (SDLAs) to deal with this challenge. They maintain equivalency tables that convert charges coming from or headed to other states based on standards developed by the American Association of Motor Vehicle Administrators (AAMVA). The problem is that AAMVA and other entities have had difficulty maintaining these tables for every state, so it is difficult to identify the appropriate translator that enables cross-state comparison. Third, states have significant limitations to their court statistics databases, which do not always allow them to pull specific charges, isolate specific types of cases (e.g. cases involving a commercial driver's license holder), or limit the ability to report on cases more than a few years old. Fourth, obtaining state court data is often an arcane process, and is potentially expensive, as some states levy substantial fees for their data. Research is needed to improve these processes if state administrators, federal administrators, and researchers are to improve their understanding about which enforcement and adjudication techniques are most effective.

**Objective:**

To develop recommendations for harmonized data collection protocols among U.S. state

and local courts and motor vehicle administrators to enable valid comparisons of state enforcement and adjudication practices.

**Research Method:**

It is expected that the research will address the following questions: What kinds of changes do administrative offices of the courts (or equivalent state agency), SDLAs, and other entities involved in the enforcement and adjudication aspect of traffic offenses need to make so that public research of state trends in adjudication and enforcement is more feasible? What kind of changes must states make to electronic databases so that cross-sectional and temporal court cases can be broken down to greater, more finely tuned detail so that specific state policies can be subjected to empirical scrutiny? What kinds of process standards do states need to adopt to ensure that activities related to license plate reciprocity can be tracked (i.e. court adjudication, changes to standard driver license statuses, changes to CDL driver license statuses, etc.)? How much funding is required to make these changes, and might they be made as part of a broader reform of state court systems? Why do some states differ in their propensity to send individuals to issue citations, uphold fines, send violators to state traffic school, and revoke licenses? Which policies have the most impact on highway safety? Specifically, do lax enforcement and adjudication lead to higher crash rates, injuries, and fatalities, all else equal?

**Recommended Funding: \$350,000**