



U.S. Department of Transportation  
Federal Motor Carrier Safety Administration

# Research and Technology Innovations Regarding Driver Fatigue and Vehicle Safety: Using the Small Business Innovation Research Program

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Office of Research and Information Technology

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# Small Business Innovation Research (SBIR) Program

- Congress established the SBIR program to stimulate innovation and to utilize small businesses to meet Federal Research and Development (R&D) needs.
- Administered for the Department by the Volpe Center.
- Best suited for safety challenges in need of innovation.
- Intended for commercial solutions.
- FMCSA is leveraging the SBIR program in various areas to assist with our Safety mission.

# Three Phase Program

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- **Phase I** - Establish the technical merit, feasibility, and commercial potential of the proposed R&D efforts.
- **Phase II** - Continue the research and development efforts initiated in Phase I.
- **Phase III** – The small business pursues commercialization objectives resulting from the Phase I and II research and development activities. The SBIR program does not fund Phase III.

# Eligibility Requirements & How to Apply

## ▪ Eligibility Requirements

- Small businesses must meet certain eligibility criteria to participate in the SBIR program:
  - American-owned and independently operated.
  - For-profit.
  - Principal researcher employed by business.
  - Company size limited to under 500 employees.

## ▪ How to Apply

- USDOT SBIR Program Office releases two solicitations annually, and these documents are available for downloading from the USDOT SBIR website in December and June of each fiscal year.
- <http://www.volpe.dot.gov/work-with-us/small-business-innovation-research/solicitations>

# Overview of FMCSA SBIR Projects

- **Technologies Enabling the Assessment of Sleepiness:**
  - Phase I Project: Produce reliable and practical technologies to monitor and assess sleepiness in real-world settings.
  - Working together with National Institutes of Health (NIH).
- **Advanced Fatigue Modeling for Individual Differences:**
  - Phase II Project: Deliver an individualized Fatigue Management Program (FMP) technology for trucking operations that incorporates information about sleep/wake history, driver alertness, and vehicle performance to produce individualized predictions of future performance capability.

# Overview of FMCSA SBIR Projects (continued)

- **Driver Fatigue, Distraction, and Alerting Technology:**
  - Phase II Project - Develop and test a Drowsy Driver Measurement System (DDMS) to unobtrusively detect and alert drowsy, distracted, and aggressive drivers prior to performance degradation.
- **Trailer(s) Attributes to the Tractor:**
  - Two projects in Phase II with multi-modal interest.
  - Cost-effective, easy to install, easy to maintain, backward-compatible solutions.
  - Target key trailer attributes.

# Overview of FMCSA SBIR Projects (continued)

- **Better Enforcement of Anti-Texting Rules for Commercial Motor Vehicle Drivers:**
  - Two Phase I projects completed.
  - Technical and feasible limitations identified.
- **Affiliation Strength/Risk Model Development:**
  - Applied to new motor carrier applicants.
  - Use of technology and data sources to assist in vetting.

# Contact Information

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For more information about FMCSA's work with the SBIR program, please contact:

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