Outline

- The DOT's UTC Program
- The SQDH Institute Mission
- The SQDH Institute Strategic Plan
- The SQDH Long Range Vision
DOT Goals

- Safety
- Mobility
- Economic Growth
- Human and Natural Environment
- National Security
THE UTC PROGRAMS

• The University Transportation Center (UTC) were first funded in 1987

• DOT administrators are very aware of criticism of federally designated centers and have developed procedures to successfully manage these programs to avoid problems

• 10 regional centers and 23 “designated” centers; Purdue’s center is a designated center
UTC Mission & Goals

Mission: To advance U.S. technology and expertise in many disciplines comprising transportation through the mechanisms of education, research, and technology transfer at university-based centers of excellence.

Goals:
1. Education
2. Human Resources
3. Diversity
4. Research Selection
5. Research Performance
6. Technology Transfer
Mission of the SQDH Institute

- Integrate education and research in noise and vibration control, pavement construction, and traffic management focused on the development of highway systems that are quiet, safe, durable, and economical.

- Contribute to the Mission of the University Transportation Program
## Budget for Years 1-6

1:1 Matching funds required for UTC

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Strategic Plan

• Administration structure
• Matching funds
• Research
• Education
• Technology transfer
Executive Committee

- Bob Bernhard
- Vince Drnevich
- Head of the School of Mechanical Engineering
- Kumares Sinha (Director, JTRP)
- Bohdan Kulakowski (PTI)
Advisory Committee

- FHWA - DC, Noise
- FHWA - IN
- INDOT
- PENNDOT
- FTA
- FRA
- Marquette
- Purdue
- JTRP
- PTI
- AASHTO

- NHTSA
- AMA
- Tire Manufacturers
- Truck Manufacturers
- ACPA
- Asphalt
- transportation noise consultants
- EU Representative
Potential University Subcontractors

- PTI (Penn State)
- Marquette
- Texas - Austin
- Central Florida
- Ohio University
- UC - Davis
- Rutgers
- Other universities with transportation noise programs
Matching Funds

- University cost sharing (research equipment, salaries, administration and facilities costs, etc.)
- JTRP projects
- Industrial contracts
- In-kind support from INDOT and others
Research

The research program will be focused on:

• development of an understanding of the *fundamental* noise generation mechanisms created by the interaction of tires and pavement (*laboratory based research*)

• development of *practical* pavement materials, tire designs, and pavement construction techniques which are quiet as well as durable and safe (*combined laboratory and field research*)
Research projects will be selected through a 2 step proposal evaluation process:

- 1 page proposal ranked by the Advisory Committee. Top ranked project ideas will be invited to prepare full proposal.

- Full proposal evaluated by a peer review panel. Executive Committee will select final proposals based on peer reviews.
Research Project Review Process

- A Study Advisory Committee (SAC) of 3-4 individuals will be assigned by the Executive Committee for each project
- Semi-annual meetings with SAC
- Monthly reports
- Archival publications
- Reports at conferences and meetings
SQDH Education Program

- New research findings incorporated into existing classes
- 1 new CE class in tire/road noise control
- Increased number of graduate students in noise and transportation studies
- Undergraduate internships/scholarships
- K-12 summer programs for women and underrepresented minorities
SqdH Technology Transfer Programs

- Purdue Road School
- Herrick Labs Partners Program (HLPP)
- Purdue Highway Extension and Research Program for Indiana Counties and Cities
- Workshops, conferences, and short courses
- Archival publications and reports
- Web Site
- Semi-Annual Newsletter
Long Term Vision

- The initial focus will be on road noise generation mechanisms
  - we will build world class facilities for study of road/tire noise mechanisms
  - we hope to make breakthroughs in the understanding of pavement and tire interaction
  - this will be a real interdisciplinary research and education effort between pavement specialists (CE) and acoustics specialists (ME)
Long Term Vision (Cont.)

• We will investigate how this knowledge can be implemented in a practical fashion

• As time passes we will also incorporate other aspects of noise control such as traffic management

• We hope to eventually move to other aspects of highway noise and other transportation noise problems