

# Graduate Studies in Acoustics and Noise Control in the School of Mechanical Engineering at Purdue University

Patricia Davies, Stuart Bolton, Kai Ming Li  
Ray W. Herrick Labs., School of Mechanical Engineering, Purdue University.

## Acoustics Community at Purdue

Electrical & Computer Engineering	Astro and Aeronautical Engineering	Speech, Language and Hearing Sciences
Psychological Sciences	<b>Noise Control &amp; Acoustics Ray W. Herrick Laboratories</b>	Biomedical Engineering
Forestry & Natural Resources	Biological Sciences	Mechanical Engineering
		Electrical and Mechanical Engineering Technology

## Noise Control Professors

**Stuart Bolton** ([bolton@purdue.edu](mailto:bolton@purdue.edu))

- Acoustics & noise control; Sound Field Visualization; Noise Control Materials and System Design and Modeling

**Kai Ming Li** ([mmkml@purdue.edu](mailto:mmkml@purdue.edu))

- Environmental Acoustics. Sound Propagation; Barriers; Acoustic Detection; Enroute Aircraft Noise Prediction.

**Jun Chen** ([junchen@purdue.edu](mailto:junchen@purdue.edu))

- Experimental fluid dynamics; Development of flow Diagnostic Techniques; Flow Dynamics in Stratified Environments; Turbulent Flow Measurements and Modeling

**Patricia Davies** ([daviesp@purdue.edu](mailto:daviesp@purdue.edu))

- Signal Processing, System identification; Sound Quality, Annoyance, Sleep Disturbance, Speech Interference; Seat-Occupant Dynamics; Viscoelastic materials modeling.

**Chuck Krousgrill** ([krousgr@epudue.edu](mailto:krousgr@epudue.edu))

- Nonlinear dynamics and vibrations; Brake Squeal; Friction-Induced Vibrations.

## Facilities

For a full list of Purdue Campus Facilities Related to Acoustics see: <http://www.purdue.edu/research/phase/labs.shtml>



An institution dedicated to graduate education and engineering research with emphasis on technology transfer to industry.

## Sample Research Topics

- Advanced acoustic metamaterials
- Acoustical measurement techniques
- Bioacoustic sensing
- Assistive hearing devices and telecommunications
- Sound perception, annoyance and product sound quality
- Noise induced hearing loss
- Noise induced sleep disturbance
- Propagation of environmental noise
- Impact of environmental noise: annoyance, sleep disturbance, task interference
- Product noise control
- Tire-road interaction noise
- Aeroacoustic noise
- Engine and powertrains
- Noise, Vibration and Harshness
- Quiet vehicles – conventional, unmanned
- Alternative energy, E.g., wind turbine noise
- National security issues
- Information technology
- Musical instruments
- Architectural acoustics
- Audio/video systems, sound reproduction
- 3-D sound fields and auralization



## Curriculum

### For a Full list of Acoustics Related Courses

[http://www.purdue.edu/research/phase/acoustics\\_courses.shtml](http://www.purdue.edu/research/phase/acoustics_courses.shtml)  
Class Requirements: MS Non Thesis (10 classes), MS Thesis (7 classes), Ph.D. post masters (7 classes), Direct Ph.D.(12 classes)

### Sample Courses Related to Noise Control & Acoustics

- ME 413 - Noise Control
- ME 513 - Engineering Acoustics
- ME 563 - Mechanical Vibrations
- ME 579 - Fourier Methods in Digital Signal Processing
- ME 615 / A&AE 615 – Aeroacoustics
- ME 664 - Vibrations of Continuous Systems
- ME 613 – Advanced Engineering Acoustics
- ME 640 – Structural Acoustics
- ME 579 – Fourier Methods in Digital Signal Processing
- SLHS 503 - Auditory Perception
- SLHS 504 - The Auditory Periphery
- SLHS 564 - Hearing Aids I
- BME 595B - Biomedical Signal Processing
- ECE 511 / PSY 511 – Psychophysics
- ECE 528 / BME 528 - Measurement and Stimulation of the Nervous System

## More Information

<https://engineering.purdue.edu/Herrick>

<http://engineering.purdue.edu/ME/>

<https://engineering.purdue.edu/ME/Academics/Graduate/generalinfo.html>