

# Center of Excellence in Structural Health Monitoring

## Inaugural Meeting

April 12–13 2007

Nittany Lion Inn

*University Park, Pennsylvania*

### Preliminary Program

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#### Thursday Morning

Center Mission & Operations

1: State of the Art in SHM

Breakout Groups

#### Lunch

#### Thursday Afternoon

2: Recent Breakthroughs in SHM

Laboratory Tours

#### Reception

#### Dinner

#### Friday Morning

3: Future Directions in SHM

Breakout Groups

#### Lunch (on your own)

#### Friday Afternoon

Steering Session

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Our speakers will come from government agencies, academia, and industry.

The breakout groups will focus on various aspects of SHM such as aerospace and civil infrastructure applications, machine diagnostics, sensor needs, and data fusion.

**Purpose of Meeting:** 1) Introduce the new Center, 2) showcase ongoing projects at Penn State, 3) provide membership information, 4) give attendees an opportunity to learn about the state of the art, recent breakthroughs, future directions, and technology needs for SHM.

**Center Mission:** Improve public safety by advancing the state of the art in structural health monitoring and providing engineering technology for member companies.



**Announcing the formation of the**

**Ben Franklin  
Center of Excellence  
In  
Structural Health Monitoring**



**What is Structural Health Monitoring?**

Structural health monitoring (SHM) is the act of assessing the well-being of a structure or system. It addresses whether the functionality of the structure or system has been diminished. Analysis of SHM data is used to determine fitness-for-service (diagnostics) and remaining useful life (prognostics). The name implies that these assessments can be performed upon demand by sensors that are built into or permanently affixed to the structure or system. SHM is an extension of periodic nondestructive evaluation and a replacement for schedule based maintenance. As such, it has the potential to improve the safety of the structure or system as well as to drastically reduce costs associated with maintenance. The goal of SHM is to keep the public as safe as practical using cost effective technologies. Advances in several technologies have positioned the multidisciplinary field on the verge of revolutionary improvements in public safety. Applications include civil structures, aerostructures, infrastructure, power generation, mechanical equipment, and even monitoring the health of biological structures such as the human body.

**Center Mission:** Improve public safety by advancing the state of the art in structural health monitoring and providing engineering technology for member companies.

**Center Goals:**

- Spur the research and development of new technologies that will improve public safety
- Transfer technology to member companies to give them a competitive advantage
- Make PA a hotspot for structural health monitoring, creating a new high tech job market that will provide jobs for residents and draw people to PA
- Train students to provide an outstanding workforce pool

**Penn State Participants:**

Engineering Science and Mechanics – Cliff Lissenden, Judy Todd, Joe Rose, Joe Cusumano, Bernie Tittmann, Francesco Costanzo, Mirna Urquidi-Macdonald

Aerospace Engineering – Ed Smith

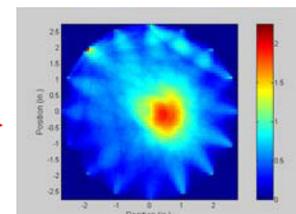
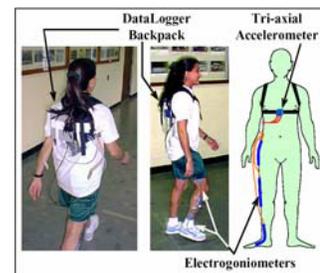
Civil Engineering – Ghassan Chehab, Maria Lopez de Murphy, Sunil Sinha

Applied Research Laboratory – Karl Reichard, Steve Conlon

Mechanical Engineering – Martin Trethewey

Electrical Engineering – Qiming Zhang

Food Science – John Coupland



For Information Please Contact:

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or Ed Smith, Associate Director  
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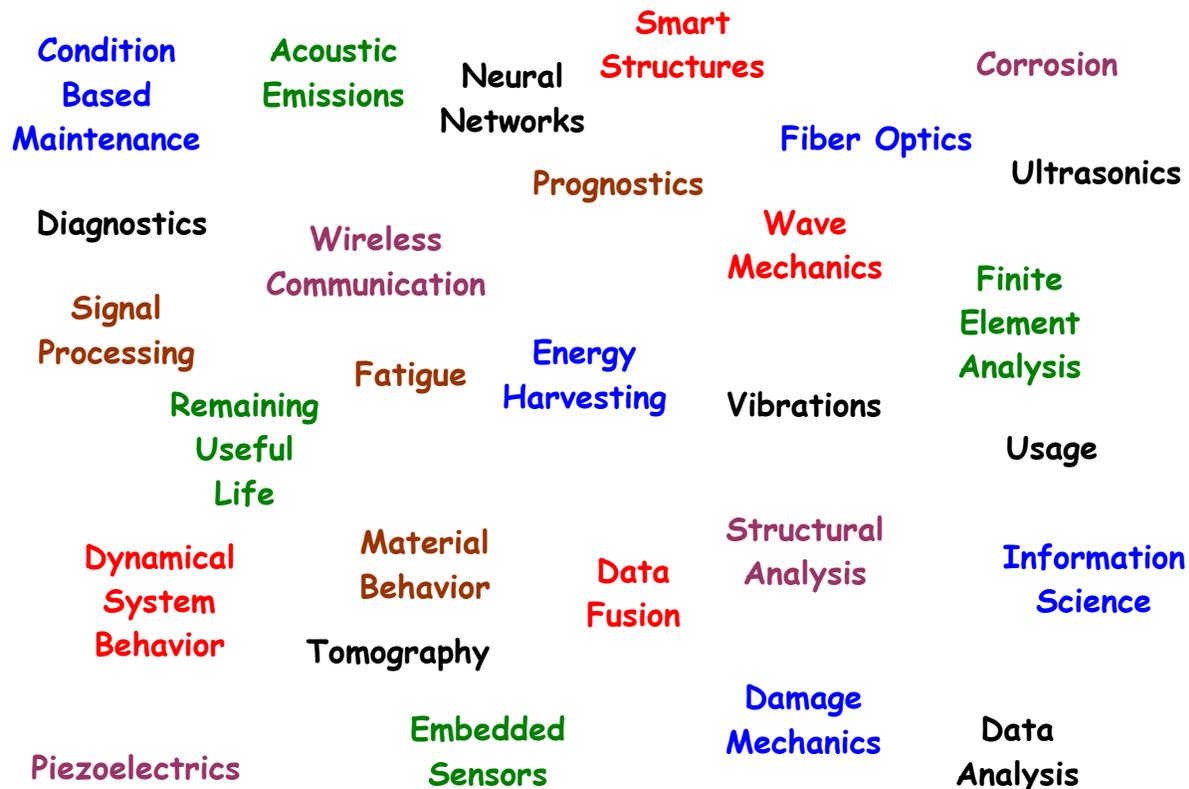
## Benefits of Membership in the Ben Franklin CoE in SHM:

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- Keep up with the latest developments and technologies in a fast growing multidisciplinary field through
  - Meetings
  - Newsletters
  - Website
- Guide investigators to solve problems important to your products
- Training (short courses)
- Consulting services (day visits)
- Interaction with students will give an inside track to hiring them upon graduation
- Corporate visibility through member profiles on website and in newsletters
- Collaborations for STTR and SBIR projects

## Elements of SHM

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# Registration Form

Register me for the Structural Health Monitoring Inaugural Meeting, April 12–13, 2007, Nittany Lion Inn University Park, PA. Registrations will be accepted by e-mail, mail or fax through Friday, March 23<sup>rd</sup>, 2007.

Name \_\_\_\_\_

Company \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_

State/Province \_\_\_\_\_

Country \_\_\_\_\_

Telephone \_\_\_\_\_

Fax Number \_\_\_\_\_

E Mail \_\_\_\_\_

Make checks payable to The Pennsylvania State University

Charge my:  VISA  Mastercard ...in the amount of \$90

Account Number \_\_\_\_\_

Exp. Date \_\_\_\_\_

CVV2 Code \_\_\_\_\_

Name as it Appears on card \_\_\_\_\_

Signature \_\_\_\_\_

**Fax or mail completed registration form by March 23<sup>rd</sup> 2007 to:**

Cliff Lissenden—Director

Ben Franklin Center of Excellence

in Structural Health Monitoring

212 Earth-Engineering Sciences Bldg.

University Park, PA 16802

Phone: 814.863.5754

Fax: 814.865.9974

E Mail: [lissenden@psu.edu](mailto:lissenden@psu.edu)

## Accommodations available at:

**Nittany Lion Inn** 800.233.7505

Res. code: BEN0412

\$107 single occupancy

\$117 double occupancy

**The Penn Stater** 800.233.7505

Res. code: BEN0412\_001

\$97 single occupancy

\$107 double occupancy

**Hilton Garden Inn** 814.272.1221

Res. code: SHM

\$95 single occupancy

\$105 double occupancy

# Map & Directions



## Ben Franklin Center of Excellence in Structural Health Monitoring

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