Center of Excellence in Structural Health Monitoring
Request for Proposals

This is the first annual RFP from the CoE SHM. **The deadline for proposals is 5:00 pm Friday November 2, 2007**. Proposals should be submitted as an Adobe Acrobat (pdf) file attachment to an email sent to cjl9@psu.edu. The CoE SHM modestly anticipates funding 2-3 projects in the $40-60K range in 2007-2008 as funds from membership dues become available.

The proposal format is:

- Title
- Principal Investigator and project team
- Background and problem statement
- Methodology
- Expected results and significance
- Requested funding (no overhead)

The project period is one year. The Principal Investigator must be a CoE SHM participant (listed in the document 'Faculty Areas of Expertise' on www.esm.psu.edu/shm) and will be expected to present progress and findings at Center meetings. One project deliverable is a final report that is due 30 days after the project end date. Any other deliverables are to be defined in the proposal.

The target length of the proposal is two pages, with three pages being the absolute maximum. Use a size 12 font, single spacing, and 1" margins.

This RFP includes three topic areas, each proposal must address at least one of these topics.

1. Research and develop SHM technologies for early detection of fatigue or corrosion damage in aircraft structures. This includes sensing, secure wireless communications, energy harvesting, system integration, and monitoring inaccessible areas.

2. Develop a SHM system based on a sparse sensor network capable of detecting structural flaws in a fiber metal laminate aerospace structure. Demonstration should be on a flat panel. The SHM system needs to be able to detect debonding in the laminate-metal interface from a fatigue crack. The SHM solution should have a minimum number of sensors per unit area of structure. The system should not require storage of a base-line for a given structure. The system should have self-diagnosis technology built in and should contain algorithms to detect false-positive.

3. Research and develop SHM technologies in your particular area of expertise. There are two possible routes anticipated: (a) expand the scope of an existing project by adding a high reward objective, and (b) perform a feasibility study on a new idea that could be used in a proposal for external funding.