Condition assessment of water pipelines during their operational life time is a critical task required for the maintenance and management of water infrastructure systems. A rupture in a water pipeline network not only results in significant economic losses, but also creates disastrous societal disruption. In this interdisciplinary research project, which involves structural, environmental, and mechanical engineering, potential causes of structural damage to water pipelines are identified and appropriate leak detection strategies are investigated. Based on the outcome of this research, the most efficient methods to locate the system rupture/leakage, with minimum time-lapse and maximum accuracy, will be recommended.

Brief description of what the student will be doing:

The student will be expected to complete the following tasks:

1. A comprehensive literature study
2. Identification of available techniques to detect rupture/leakage in water pipelines
3. Structural simulation of a series of rupture/leakage events
4. Write a final report on the completed activities, prepare a poster, and present the results.

Is this a CASA-related project?  Yes ___ No  

Preferred background of student (major(s), class, GPA, pre-requisites, etc.):

A junior-level CEE student
Familiarity with computational structural simulation is necessary.
Must have a GPA of 3.2 or higher

Did you mentor a student last summer in the College REU Program?
Yes___  No  

If yes, please describe the outcomes for that student (i.e. Honor's thesis, conference presentations, manuscripts, papers, etc. Describe accomplishments to date as well as plans for the spring semester if the work has continued):

N/A

Please return this form to: lrobidou@ecs.umass.edu by February 1, 2013