

# Quantitative Nondestructive Testing

## *A Confluence of Science and Engineering*

A talk by

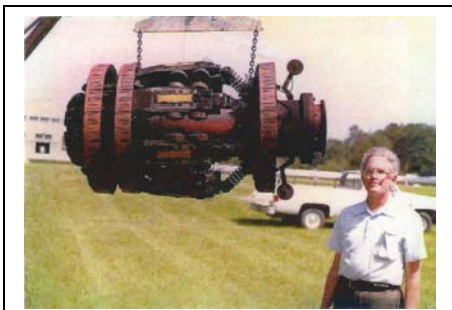
# Dr. George Alers

Research Scholar in Residence

*Tuesday, May 19, 2009*

**7:00pm**

**Kennedy Library, Room 510B**

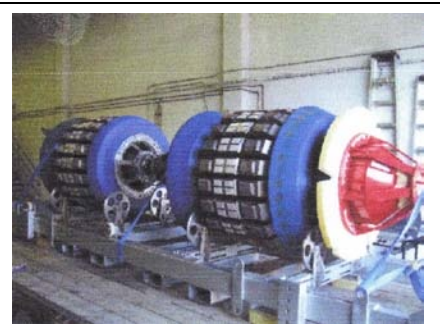


*Research version of a robot designed to inspect buried gas pipelines for stress corrosion cracks.*

This talk will discuss the modern methods of testing materials for their fitness-for-service in high risk applications such as high pressure gas pipelines, boilers, and nuclear reactors. This requires the measurement of the remaining wall thickness of a corroded pipe or of the size of cracks in old structures.

It demands the application of the basic physics

behind magnetism, acoustics, X-rays, and electromagnetism, plus the disciplines of electrical and mechanical engineering combined with computer science. An example will be presented in which a robot was developed to run through miles of buried gas pipelines to locate areas of corrosion and potential leaks.



*Commercial version of the robot ready to inspect 30-inch diameter pipelines anywhere in the world.*

**George Alers** is a Research Scholar in Residence at California Polytechnic State University. He retired to San Luis Obispo to be a consultant to a small business devoted to ultrasonic inspection of large structures. His 55-year professional career was spent performing basic research in materials science at major corporations and at the National Institute of Science and Technology. He is a coauthor on over 100 technical papers and 13 patents. He received the 1975 Achievement Award from the American Society for Nondestructive Testing and has served as an officer on various committees of IEEE, AIME, and AIP.