



The University of Virginia Patent Foundation congratulates

2009 Edlich-Henderson Inventors of the Year

**John P. Mugler III, Ph.D., and
James R. Brookeman, Ph.D.**

*Professors of Radiology and Biomedical Engineering
University of Virginia*

From left: John P. Mugler III, Ph.D., and James R. Brookeman, Ph.D.

Photo by Dan Addison

The highest honor bestowed by the U.Va. Patent Foundation, the Edlich-Henderson Inventor of the Year award recognizes inventors whose technology has proven to be of notable value to society. Named for U.Va. Professor Emeritus Richard F. Edlich, M.D., Ph.D., and Christopher J. Henderson, the award is a tribute to their enduring support of and commitment to the University and its inventors.

Mugler and Brookeman, both professors of radiology and biomedical engineering at U.Va., were honored for their groundbreaking work in magnetic resonance imaging (MRI) techniques over the past two decades.

The researchers' lead technology is a fast, 3-D pulse sequencing technique referred to as MP-RAGE (Magnetization-Prepared Rapid Gradient Echo). Considered a primary standard in 3-D MRI, MP-RAGE allows clinicians to acquire high-resolution 3-D images on the order of five minutes. These highly detailed images are capable of revealing more subtle abnormalities than could previously be detected through MRI, providing for earlier and more accurate diagnoses, and can be viewed from any orientation on modern computer workstations.

The U.Va. Patent Foundation received an issued patent on this technology in 1993 and has licensed the patent rights to Siemens AG and Koninklijke Philips Electronics NV (Philips). As a result, MP-RAGE is now implemented in MRI scanners in hospitals and research institutions worldwide.

In addition, Mugler and Brookeman's more recent cutting-edge work with hyperpolarized noble gases as MRI contrast agents for the lungs is currently being explored with colleagues at U.Va. and in clinical trials by a major manufacturer.



Sample images of the brain acquired using the researchers' 3-D MP-RAGE technology.

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