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John Clarke and Alexander Pines named in new "Scientific American 50" list of visionaries

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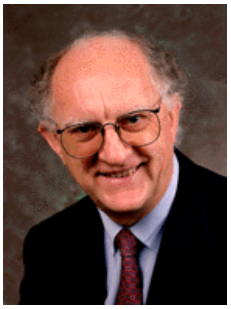
BERKELEY, CA — John Clarke and Alexander Pines have been named to the first annual Scientific American 50 list, honoring individuals and organizations whose accomplishments demonstrate a "clear, progressive view of the technological future."

Clarke and Pines are members of Lawrence Berkeley National Laboratory's Materials Sciences Division; Clarke is professor of physics and Pines professor of chemistry at the University of California at Berkeley. The two were jointly chosen by the editors of *Scientific American* magazine as research leaders in the category of general technology for their "innovations in magnetic resonance imaging with weak magnetic fields."



John Clarke

"Recognition for our collaborative work by the editors of *Scientific American* is certainly an honor, particularly since the magazine has a unique role in communicating science and technology," says Clarke. "Above all, it's an honor we share with our students and colleagues."

Alexander Pines

Pines adds, "The work for which we have been cited has depended heavily on the contributions of our graduate students and postdoctoral scholars. We're fortunate to work with such outstanding young scientists at Lawrence Berkeley National Laboratory and the University of California."

Scientific American's editor in chief, John Rennie, says the purpose of the new list is to recognize not only researchers but business and policy leaders, as well as companies and organizations, "who are advancing technology and guaranteeing a brighter future for all of us."

Other categories in the Scientific American 50 list, which will be published in the magazine's December issue, include agriculture, chemicals and materials, communications, computing, defense, energy, environment, manufacturing, medical diagnostics, medical treatments, and transportation. In each category the editors recognize a research leader, a business leader, a company, and a policy leader.

Clarke and Pines were named for their recent innovations in magnetic resonance imaging (MRI) and nuclear magnetic resonance (NMR) spectroscopy in ultralow magnetic fields. Their technology combines superconducting quantum interference devices (SQUIDs) that allow room temperature access, coupled with modern developments in NMR pulse sequences and switched magnetic fields. This opens the possibility for mobile diagnostic scanning devices in materials and biomedicine, without the need for huge superconducting magnets.

John Clarke is noted for work in superconductivity, particularly the development and application of ultrasensitive SQUID detectors. He has used SQUIDs in many applications, including detection of NMR signals at ultralow frequencies; geophysics; nondestructive evaluation of materials; biosensors; detection of dark matter; and observing "qubits" for a potential quantum computer. He is a Fellow of the Royal Society of London and an Honorary Fellow of Christ's College, Cambridge. His honors include the University of California's Distinguished Teaching Award, 1987 California Scientist of the Year, and numerous technology awards including the Fritz London Memorial Award for low temperature physics and the National Academy of Sciences Comstock Prize in physics.

Alexander Pines, Glenn T. Seaborg Professor of Chemistry, has pioneered such NMR developments as novel coherence methodologies, in particular for solid samples, and innovations in combining NMR spectroscopy and imaging, using ultrasensitive pumping with lasers and detection techniques using superconducting devices. Applications range from material science to biomedicine. Pines is a member of the National Academy of Sciences, a foreign member of the Royal Society of London, and past president of the International Society of Magnetic Resonance. His numerous teaching and technical awards include the 1991 Wolf Prize in chemistry, the American Chemical Society's Irving Langmuir Award in chemical physics, and the University of California's Distinguished Teaching Award.

Scientific American magazine was founded in 1845 and is published by Scientific American, Inc., a division of Holtzbrink Publishers, a subsidiary of Verlagsgruppe Georg von Holtzbrinck GmbH, which operates in more than 40 countries.

The Berkeley Lab is a U.S. Department of Energy national laboratory located in Berkeley, California. It conducts unclassified scientific research and is managed by the University of California.

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