file Lauterbur

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NEWS RELEASE

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URBANA, Ill. -- Paul Lauterbur, the widely acclaimed pioneer of an important new body-imaging technique, will become a University of Illinois faculty member in June.

Lauterbur, professor of chemistry at the State University of New York at Stony Brook, developed nuclear magnetic resonance imaging -- a body-imaging technique that many believe will revolutionize medical theory and practice.

He will direct a major new center for NMR research that the U. of I. is developing with the University Park Imaging Center, Champaign.

U. of I. president Stanley O. Ikenberry called Lauterbur an "intellectual magnet who will draw bright, talented young students and faculty to the university to study, teach and research NMR imaging and other areas of chemistry and medicine."

On the Urbana-Champaign campus, Lauterbur will become a professor in the College of Medicine and in the department of chemistry. He also will hold a professorship in the College of Medicine on the university's Chicago campus.

(MORE--Lauterbur)

Lauterbur's wife, Mary Joan Dawson, currently a lecturer in the departments of medicine and physiology at University College in London, also will hold joint appointments at the two U. of I. campuses -- as an associate professor of physiology and biophysics in the colleges of Liberal Arts and Sciences and of Medicine at Urbana-Champaign, and in the College of Medicine's department of physiology at Chicago.

"The decision of Dr. Paul Lauterbur and Dr. Joan Dawson to join the faculty of the University of Illinois is an event to be celebrated, for it brings to the university intellectual leadership of critical importance to our development of a preeminent program of basic and clinical research in magnetic resonance imaging," said Donald N. Langenberg, chancellor of the U. of I. at Chicago.

"It is particularly gratifying that the appointments of Drs. Lauterbur and Dawson are truly universitywide, spanning both the Chicago and Urbana-Champaign campuses."

Lauterbur, 55, was awarded the 1984 Albert Lasker Clinical Research Award for developing NMR imaging techniques. The Lasker award is viewed by many as a stepping stone to the Nobel Prize in Medicine. Since the first Lasker awards were given 39 years ago, 40 award recipients have gone on to claim Nobels.

"The prospect of Dr. Lauterbur's coming here is a major gain for the university and particularly for the College of Medicine on this campus and in Chicago," said Dr. Charles C.C. O'Morchoe, director of the U. of I. College of Medicine at Urbana-Champaign and coordinator of the university's efforts to recruit the two researchers.

(MORE--Lauterbur)

"It's particularly appropriate to attract somebody of his reputation in this field, in the sense that nuclear magnetic resonance imaging is a technique which is going to become increasingly important in the practice of medicine, and the future of medicine is one of the main themes of our College of Medicine.

"Also, it will mesh very nicely with the fact that this campus is becoming a major center for supercomputing research and applications," O'Morchoe said. "We hope the tie-in between the development of NMR imaging and the use of supercomputers will lead to significant developments in the field."

Plans for establishing the NMR imaging center include the purchase of three state-of-the-art NMR devices, one of which will be housed in a building to be constructed next to Mercy Hospital's NMR facility in Urbana. Another will be located in Chicago, and the third, especially designed for research, will be situated on the Urbana-Champaign campus, either in the Medical Sciences Building or in Burrill Hall.

Funds for the development of this major national center for NMR imaging research will come from the U. of I. and the Servants United Foundation, which along with Mercy Hospital is supported by ServantCor.

The foundation, through its Mercy Hospital Division, will provide $1.25 million over a five-year period to cover part of the researchers' salaries and the cost of constructing and maintaining the building. The university has committed $1.15 million to acquire the necessary NMR research magnets.

The building, which will house one of the NMR devices, will be developed by University Park Pathology Associates on land it owns adjacent to the University Park Imaging Center. UPIC is associated with ServantCor.

The technique of NMR imaging provides a powerful, non-invasive method of seeing organs and tissues inside of a living organism, said Dr. Ben Williams, clinical professor in the College of Medicine and medical director of the UPIC.

NMR devices use large magnets, which generate a constant magnetic field. The magnetic field causes the nuclei of atoms to line up so the magnetic polarity of the atom is aligned with the field. The atoms then are subjected to pulses of radio waves, which raise them to a higher energy level. When the radio waves are turned off, the atoms realign and return to their normal energy states, thus emitting radio waves of their own.

Since each type of atom produces radio waves at a characteristic wavelength, molecules can be identified by the radio spectra that their component atoms emit, Williams said. Bone, blood, muscle, and other tissues of the body are composed of different amounts of water, minerals, proteins and other substances and often can be recognized by the radio "fingerprints" that they emit.

An NMR image is obtained by placing the patient or subject within the super-powerful magnetic field. Signals are detected, interpreted by a computer, and assembled into a picture somewhat similar to an X-ray.

But NMR images can reveal important details invisible to X-rays, he said. NMR is more versatile even than the newer CAT-scan technique, which makes computer-assembled images of the body using only X-rays. Depending on how it is used, NMR can look at four or five fundamentally different aspects of the body, and thus in many cases is more useful, Williams said. Also unlike X-rays, the NMR imaging procedure does not bombard a patient's body with ionizing radiation.

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