

INTRO UP AND UNDER

Hi, everybody. We're going to take a trip today -- a trip to visit a research scientist who ~~has been honored recently~~ ^{is being} ~~this month~~ for his pioneering work leading to a new, and safe, means to see inside objects, including the human body.

Paul J. Lauterbur is University Professor at the State University of New York at Stony Brook. And he is much more. He is the recipient of the 1984 Albert Lasker Medical Research Award for his invention of the technique known as NMR imaging. I've been saying that what Dr. Lauterbur did was to create a third-generation X-ray system. That is, first there was the X-ray machine which made a photograph showing objects inside the body. We are all familiar with that. Then came the CAT scan, ^{NMR} which in effect married the X-ray machine to a computer. Now there is the NMR imager, which provides computerized pictures in three dimensions of not only the bones and organs but even of tissue. And it does this without using harmful radiation.

Well, it's a complex subject, ^{so} ~~but~~ I visited Dr. Lauterbur the other day to see if I could get a simple explanation. Paul Lauterbur is professor of chemistry and research professor of radiology at Stony Brook. I visited him in his busy, sometimes noisy office at the State University of New York at Stony Brook. You'll hear some background noises as we pick up the conversation in Dr. Lauterbur's office in the Chemistry Building:

TAPE 000 - "Professor of chemistry..." through to

TAPE 145 - "...continue to work in that area." "No question."

MORE MORE MORE

AFO LIVE: During my visit with Dr. Lauterbur, I asked him if the moment of discovery of the NMR imager came about slowly and progressively, or if it was more like the legendary lightbulb of inspiration going on. Here's some of that conversation in Paul Lauterbur's office:

TAPE 145 - "Was there a moment when a lightbulb went on..." through

TAPE 179 - "...that would be applied to make it a reality."

AFO LIVE: Paul Lauterbur, recipient of the 1984 Lasker Award for Research in Medicine.

We'll be back in a moment for some more conversation with this scientist.

14:00 BRIDGE MUSIC UP AND UNDER

AFO LIVE: Paul Lauterbur's office at Stony Brook is on the fifth floor of the Chemistry Building. He can turn in his chair and look out over Long Island Sound a few miles away. Deep inside that building, in the basement, is his laboratory. There are no windows, no distractions. In this basement lab is a little red machine, the equipment he constructed around 1971 for \$30,000. That equipment was to become the first NMR imager. History may not bear us out, but some of us are of the opinion that Paul Lauterbur's little red imager will one day rank with the first Model T automobile that Henry Ford built, or the earliest working telephone coming out of Alexander Graham Bell's attic, or perhaps that first skeletal aircraft that the Wright Brothers got off the ground in North Carolina. As we pick up the conversation in Paul Lauterbur's busy office, we'll hear a telephone ringing. And we'll hear a discussion about the first equipment used for NMR imaging.

TAPE 179 - "...Was there equipment at this point..." through

TAPE 242 - "...who think it may. That's not proven yet."

(ADVANCE TAPE TO 261 - NEED FAST CUT IN AS HE REPEATS PHRASE)

AFO LIVE: Paul Lauterbur, recipient of the 1984 Lasker Award for Medical Research, has been credited through recognition around the world with inventing the nuclear magnetic resonance imager. As he has noted, NMR, as it is called, earned the Nobel Prize for its founders four decades ago. The citation with the Lasker Award credits Dr. Lauterbur with developing (and I quote) "a non-invasive method of visualizing the body's internal organs without exposing the patient to radiation or contrast media injections. The technique can diagnose malignancies, document damage from heart disease and stroke and locate diseased tissue anywhere in the body." (end of quote) That's saying a lot. Yet Dr. Lauterbur is modest, and credits his colleagues and graduate students with assistance. By the way, in the following conversation, you'll hear him showing me some images taken of small portions of a snail.

TAPE 261 - "As so many of our projects here are..." through

TAPE 319 - "...can't be sure how it will work out."

AFO LIVE: Well, we know ~~now~~ how Paul Lauterbur's research worked out. From the idea for making an image using magnetic fields and radio waves has come a technique that is providing medicine with a major tool to diagnose the needs of a human body. The applications, as Dr. Lauterbur said, are still being explored. The NMR imager can be used to look inside any solid object, from water to molten lava. You've been listening to a conversation with the research pioneer, Paul Lauterbur.

MORE MORE MORE

> 28:00 BRIDGE MUSIC UP AND UNDER

In the weeks ahead, Conversations Unlimited will bring you talks with an economist fresh from a conference dealing with the Bishops' draft report on the economy and social justice, with two well-known scientists whose work gives them special insight into the problems of the aging, and with an astronomer who will tell us some of the theories of the Star of Bethlehem. I hope you will join us on this station for those Conversations Unlimited. Until then, this is Al Oickle.

OUTRO