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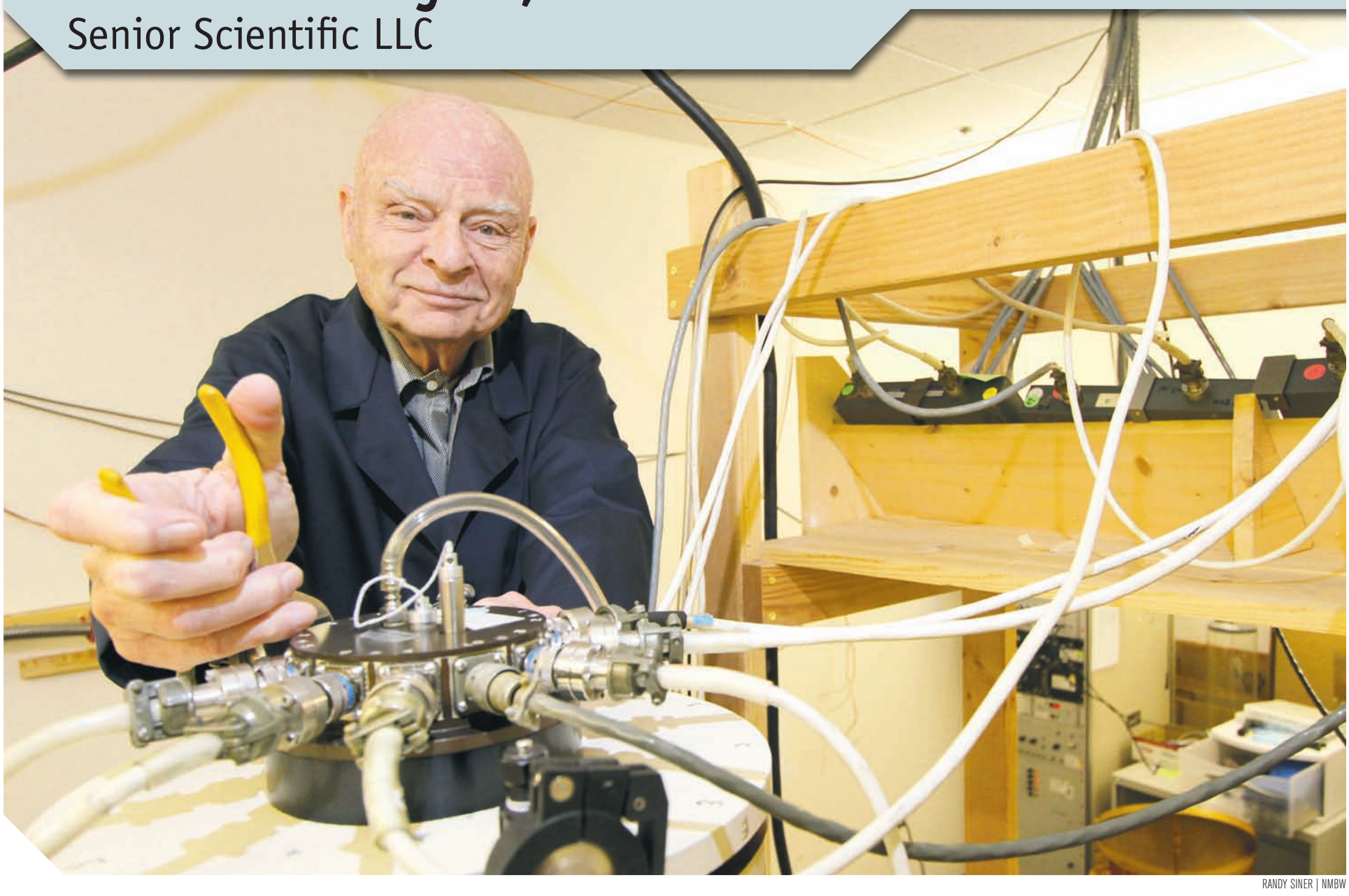
TECHNOLOGISTS

WHO'S WHO IN TECHNOLOGY

Edward R. Flynn, Ph.D.

Senior Scientific LLC



RANDY SINER | NMBW

Edward Flynn, president and CEO of Senior Scientific LLC, works with a sensor that measures magnetic fields coming from nanoparticles attached to cancer cells.

Flynn uses physics and his brain to find new ways to detect, treat cancer

BY KEVIN ROBINSON-AVILA | NMBW SENIOR REPORTER

Edward Flynn could save lives with a new, groundbreaking technology intended to detect cancer much earlier than current techniques can.

Flynn is president and CEO of Senior Scientific LLC, which he formed in 1999 to develop a diagnostic that relies on magnetic nanoparticles injected into the body. The particles carry antibodies that bind with cancer cells to pinpoint the exact location of diseases for detection and targeted therapies.

The technique can measure breast cancer tumors containing about 100,000 cancer cells, while mammograms need 10 million cells for detection, according to Flynn. The technology has shown similar capability in detecting ovarian cancer, and in monitoring the effects of chemotherapy in leukemia patients. Measuring cancer cells at such low concentrations could allow doctors to intervene earlier and target therapies much more precisely.

"By measuring the signals we get from the magnetic nanoparticles, we can watch them disappear during treatment to tell when treatment is working, and to develop new therapies," Flynn said. "We're doing that now in animal models."

Senior Scientific has begun its first human clinical trial at the University of New Mexico Health Sciences Center to monitor the effects of leukemia treatment in 60 patients.

"We use bone marrow taken from patients to measure residual leukemia to determine how much is left after treatment," Flynn said. "Our method [using magnetic nanoparticles] is 50 times more sensitive than existing methods."

Flynn's work has drawn attention in the medical industry. Senior Scientific has received about $7 million in research grants from the National Institutes of Health since 2002. The firm employs two and has eight contract employees from the Health Sciences Center who do lab testing.

Investment firm Manhattan Scientifics Inc. signed an exclusive licensing agreement last year to market Flynn's technology. Negotiations are under way with several large drug, device and imaging companies to conduct clinical trials and begin developing medical devices.

Manhattan Founder and Chairman Emeritus Marvin Maslow said Flynn is blazing a new trail in the battle against cancer.

"He's a pioneer in the field of nanotechnology applied to medicine," Maslow said. "He's dedicated himself to finding a solution for a problem that has plagued humankind for 4,000 years, and he's doing it with physics and nanotechnology rather than a scalpel."

A physicist by profession, Flynn, 76, worked at Los Alamos National Laboratory for nearly 40 years. He founded LANL's biophysics group, which employs 80.

He also created the National Foundation for Functional Brain Imaging, now the Mind Research Network, which employs about 200.

EDWARD R. FLYNN, PH.D. | Senior Scientific LLC

Education: bachelor's and master's degrees, physics, University of Illinois; Ph.D., physics, University of New Mexico

Hobbies: playing the flute, skiing

What technological innovation most changed your life personally, and how? The development of sensors to measure magnetic fields from the brain, and the adaptation of those sensors for measuring and detecting cancer.

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