

Elegant science brings precision to cancer therapies

INDIANA UNIVERSITY'S Precision Health Initiative has the resources and patient base to tackle common cancers, and wants more researchers to join the fight

When Dr. Lawrence Einhorn joined Indiana University School of Medicine in 1973, there was no cure for testicular cancer. He helped change that by developing a platinum-based chemotherapy regimen. This combination therapy, still in use today, allows long-term survival for 80% of men with the disease. Now, through its Precision Health Initiative, Indiana University is striving to repeat the accomplishment for other cancers. Einhorn thinks it is possible to turn these life-threatening diseases into treatable, livable conditions. "Through precision health, we

are going to eliminate the fear of cancer," he says.

The Precision Health Initiative will move the field "beyond non-specific, 20th century chemotherapy," says Einhorn. "It is elegant science to be able to look at thousands of genes simultaneously and compare what is driving Mr. Jones's cancer versus Ms. Smith's cancer, so we can individualize therapy."

The Precision Health Initiative will focus on multiple myeloma, pediatric cancers, and triple-negative breast cancer, which are prevalent in Indiana. "We've set a goal

of actually curing a cancer," says Dr. Jay Hess, dean of Indiana University School of Medicine, headquartered in Indianapolis. "A few years ago that would have seemed outlandish, but the advances in genomic medicine and immunotherapy are beginning to make it possible."

IU is poised to take on the challenge. IU School of Medicine serves a large and diverse patient population that includes pediatric patients at Riley Hospital for Children at IU Health. Upgraded facilities let researchers perform whole-genome sequencing on more than 3,000 patients a year to search for targetable mutations. The university also has a cellular manufacturing facility and a phase 1 clinical trials unit.

There's also \$120 million in new investment, which includes a number of endowed professorships, as well as funding to renovate 150,000 square feet of medical school research space. The Vera Bradley Foundation has committed \$35 million for breast cancer research, and the school has partnerships with large medical and

pharmaceutical companies based in Indianapolis, including Lilly, with which it collaborates for clinical trials.

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IU School of Medicine is looking to recruit heads of genomic medicine and immunotherapy to the Precision Health Initiative, which will add a total of 40 researchers across Indiana University. "There are very significant resources for the right leaders," says Hess.

Indianapolis is a very livable city, says Einhorn, who has been here for 45 years, despite opportunities from other places. "It's good for families, arts and sports," he says. "I love it here." ■

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