

The venerable scientist

DELIVERING A NEW MEANS TO FIGHT CANCER IN HIS 80S, WILLIAM HANSEL SEEKS NEW DISCOVERIES IN HIS NINTH DECADE >> by **MARY ANN STERNBERG** photo by **TIM MUELLER**

When the Pennington Biomedical Research Center hosted a symposium in September 2008 to honor Dr. William Hansel, more than 120 people gathered from across the country and from abroad to salute the internationally respected research scientist. They included the honoree's family members, colleagues past and present, graduate students, post-docs, and others whose lives had been touched.

The event, officially dubbed *Celebrating Excellence in Science*, featured an eminent keynote speaker who addressed "Advances in Reproductive Biology Research," Dr. Hansel's field. Another prominent scientist commended Dr. Hansel's contributions to the field of reproductive biology, and cancer research, and a parade of LSU luminaries paid tribute. The LSU Board of Supervisors extolled his accomplishments in a formal resolution, especially "a long and exemplary record of service to his profession" and "pioneering research discoveries." The Pennington Center renamed its weekly professional seminars, chaired by Dr. Hansel and featuring visiting scientists, in his honor. And the day culminated with a wonderful dinner.

Such extensive celebrations are usually held in retrospect of a brilliant career as its star takes his bow and retires. In this case, however, the pomp and circumstance merely acknowledged that Dr. William Hansel, internationally recognized reproductive physiologist and extraordinarily fine person, was observing a landmark, his 90th birthday.

After the fanfare, Bill Hansel returned to his office in the labyrinthine working core of the Pennington Biomedical Research Center to resume his team projects.

"So as long as I feel well and have new ideas," said the remarkable nonagenarian with a bright smile, "I think I'll keep going."

THE GREATEST GENERATION

Bill Hansel leans back in his comfortable desk chair amid a great U-shaped work space, with stacks of papers, files and neat bookshelves of journals and tomes. A few awards and certificates are propped above a bookshelf, just a sampling of the many accolades he has received that decorate the walls of the William Hansel Seminar room at the LSU AgCenter's Embryo Biotechnology Laboratory, at its St. Gabriel Research Station.

Dr. Hansel, a man of medium stature with neatly combed salt and pepper hair and large glasses that set off a warm expression, looks and seems much younger than his age. Associates attribute it to a sharp mind, an extraordinary memory, an indomitable spirit and an abiding curiosity. These are augmented by a hearing aid and two recent knee-replacement surgeries.

In the office, his requisite white lab coat hangs on a hook behind the door and he is casually dressed—khakis and a short-sleeved tan shirt, its collar encircled by a black bolo tie with a distinctive round metal clasp imprinted "9/4." "It's the insignia of the



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—DR. BILL HANSEL

94th Infantry Division,” his World War II unit, he explains.

The 94th, Cornell University and a love of research are the enduring threads that, after his family, have woven happiness through Hansel's long, full life.

He grew up on a dairy farm in western Maryland, a dedicated member of 4-H, who selected a major in dairy science at the University of Maryland. But like many in his generation, Hansel made an unexpected career detour between his 1940 college graduation and the advanced degrees he needed to pursue science: He was drafted into World War II, spending six months at Officer Candidate School, then going overseas with his division, the 94th Infantry of General George Patton's Third Army in Europe.

In 1945, Patton's troops were positioned in the Saar-Moselle triangle on the now-famous dash to the Rhine but, recounted the old soldier with a self-deprecating smile, “I didn't make it to the Rhine.” He was wounded on a land mine and spent the remainder of the war in a hospital. When he eventually arrived at Cornell for graduate study in animal physiology, he was still on crutches.

In 1949, Cornell invited the newly minted Dr. Hansel to join the faculty where he remained for over 40 years. He became a well-known researcher in reproductive physiology, ultimately concentrating his work on the function of the corpus luteum, which, he voluntarily offers, controls ovulation and the length of the reproductive cycle.

His tenure at Cornell was notable. He was awarded the Liberty Hyde Bailey Distinguished Professorship, served as chairman of the university-wide physiology department, and produced groundbreaking research that garnered prestige, fellowships, and grants from funders such as the NIH, the National Science Foundation and the USDA. He also attracted consultancies from prominent pharmaceutical companies. A large, brightly

colored, primitive oil painting of the Ithaca campus dominates one wall of his Pennington office, a daily reminder of the place that he, his wife and two daughters called home.

A LOUISIANA VICTORY

Despite his achievements, however, New York state's mandatory retirement law required him to step down in 1990. He was 70.

Louisiana, however, had no comparable age restriction and LSU was looking to strengthen the study of biotechnology in animal and veterinary sciences. They invited Hansel to come south and, he recalls, “I jumped at the opportunity.”

Dr. Robert Godke, Boyd Professor of Reproductive Physiology at LSU and now a good friend, was among the locals who rejoiced. “Bill Hansel is one of the greatest reproductive physiologists in our field,” said Godke. “He's a rare find and we were surprised and elated he accepted our invitation.”

The new arrival served as Gordon Cain Professor of Animal Physiology in the departments of Animal Science and Veterinary Science for four years until he was lured to the Pennington Center. There, in 1997, his work transitioned into targeting cancer.

It came about almost serendipitously. His beloved wife Milbrey had been diagnosed with ovarian cancer and her doctors admitted they had no cure. “I went to a conference in Poland where a friend gave a talk about (cancer) receptors and a light went on,” Dr. Hansel remembers. He was struck with the realization that there might be potential in conjoining what he knew about hormones and reproductive control in animals with the new application for destroying cancer cells.

It was the kind of insight he was known for, says Godke. “The special skill of seeing what other people don't.”

Though his wife died later that year, Hansel's new research direction with associates Dr. Carola

Leuschner and Dr. Fred Enright ultimately led to the development of a new class of cancer drugs capable of targeting and destroying both primary tumors and metastases in reproductive system cancers—prostate, breast, testicular and ovarian.

In scientific terms, their discovery involved using lytic peptides (small proteins responsible for penetrating membranes) and conjugating them to Luteinizing-hormones, resulting in a treatment called cell membrane disruption. But Hansel, who has loved teaching almost as much as research, knows that a lay audience needs a simpler explanation. “We used specific hormones like guided missiles carrying a warhead,” he defines. “The missile is the hormone and the warhead is lytic peptides. It destroys the membrane of the cancer cells, kills the cells, then cleans them up. We target the compound by putting it on a hormone that attaches to the receptors that are on cancer cells.”

The project consumed almost eight years—from chemistry lab to computer lab to test tubes and then to tests on animals, in this case, mice. “And he has been proven right in the lab,” Dr. Claude Bouchard, director of the Pennington Center, proudly notes. The next step for achieving FDA approval for a prescription drug involves three levels of testing in human subjects.

For this, the rights to the discovery were transferred to Esperance Pharmaceuticals, a Baton Rouge start-up in which Hansel is not directly involved. Although frequently researchers join a company to help develop a new pharmaceutical, “I’m probably the world’s worst businessman,” Hansel confides. “I didn’t really want to form my own company” because he’s never appreciated administration. In fact, he turned down an invitation to be provost at the University of Maryland, influenced by his wife but especially by his own preference for research and teaching.

Especially research, about which he waxes passionate. “The desire to find out is a driving force;

there’s no substitute,” he declares. And when his research inevitably hits a dead end as it has many times? “You have to have the courage to continue. Frustration is no match for the drive to find out new things.”

“We were so lucky (Hansel) came here,” says Bouchard. “He brought not only a wealth of experience but also an extraordinary ability to see the big picture,” a trait that many research scientists lack.

After turning over cell membrane disruption to Esperance, Hansel began a new lab—targeting human pancreatic cells put in mice. And next he hopes to start a cancer prevention lab.

His work remains a driving force in his life. In fact, these days “I am kind of delinquent on pastimes,” he admits. At Cornell, located in New York’s grape-growing region, he was an avid, if avocational winemaker and an active member of the Ithaca Wine Club. In Baton Rouge, he joined Pennington’s wine club for tasting and sociability, which he thoroughly enjoyed. “But now I take medicines and can’t have wine.”

He still drives a car, however, and travels—to visit grandchildren and a great-grandchild, to attend occasional reunions of the 94th and to scientific meetings. He was recently in Pittsburgh for a gathering of the Society for Study of Reproduction, “the world’s leading society for reproductive biology... the cutting edge of science,” enthuses the man who is both a founder and former president of the organization, and in early September, he returned to Cornell to give a lecture.

Clearly, Dr. William Hansel is very much involved in the science that he loves and still making a contribution to it. And he celebrated his 91st birthday in September. •

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WHAT'S NEXT?

The Baton Rouge Area Foundation has invested in two venture capital funds that invest in emerging Louisiana technology businesses. The funds have provided capital to Esperance Pharmaceuticals.

Cancer

Carola Leuschner and Hector Alila developed a cancer drug that could wipe out tumors and provide considerable royalties to LSU. They work for Esperance Pharmaceuticals, which was created to market the drug.

Cancer killer?

NEW FIRM BEGINS CLINICAL TRIAL OF PROMISING CANCER DRUGS CREATED IN BATON ROUGE >> by **MUKUL VERMA** photo by **TIM MUELLER**

There is a man in Arizona who once was counting his life in days and months. Cancer cells were spreading inside him. But this past summer, he received a shot of hope—a novel drug born from Louisiana minds with the potential of extending millions of lives, while also spinning off huge sums for Louisiana State University.

The drug, named EP 100, emerged as an idea from William Hansel, who postulated that receptors unique to cancer cells were like an Achilles heel. A drug, he believed, could be created to seek out the receptors, latch onto them, then unload a poison to kill the killers. Working at Pennington Biomedical with researchers Fred Enright and Carola Leuschner of LSU, Hansel developed a technology platform based on his a-ha moment.

Now, Esperance Pharmaceuticals has been formed at LSU's emerging technology business incubator to create and market drugs based on the technology platform. Created by Leuschner and Hector Alila of Esperance, the first drug began human trials this summer. Other drugs in the Esperance pipeline target different receptors on cancer cells.

A veteran of the medical industry—and a former student of Dr. Hansel about three decades ago at Cornell University—Alila had so much faith in the technology that he tried to buy it for a previous employer. He has been recruited instead to move drugs from the technology to market as president of Esperance.

"It actually gets rid of tumors in animal testing," said Alila. "It really has been amazing." What's more, the drug doesn't have the debilitating side effects of chemotherapy and radiation treatments.

Because he has seen the promise of new drugs turn into vapor, Alila remains cautious about EP 100 and other Esperance drugs that are under development. Yet it's difficult for him to contain his enthusiasm, for the drug is alone in its ability to reduce and kill cancerous tumors, not just slow down their growth as other medicines do. "What we have seen so far, we are optimistic."

Alila believes the discovery, which he credits to many people working together, could be the greatest in Louisiana history. Though the drugs are years from being approved for market, they could generate untold royalties for LSU. He won't guess how much, but says an existing drug that works on only 30% of breast cancers generates \$2 billion annually. By comparison, an Esperance drug could take out more than 80% of breast, prostate, ovarian, endometrial and other cancers.

The first phase of trials will take 18 months. After those tests for safety, a second phase of two to three years will reveal whether the medicines work in humans. If they are wildly successful, the FDA could let Esperance market the drugs after the second clinical trials. But the normal course is for a third round of trials before the FDA makes a final decision. The drugs could be on the market in about five years.

The next step for Esperance is to raise hundreds of millions required for the expensive second phase of trials. Alila says large drug manufacturers have shown deep interest in the technology and he has even fielded buyout offers.

"It validates our approach. It validates Louisiana and Baton Rouge." •

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