

**Mayo Clinic News Network**

**Title: Spark of Discovery Ignites New Era of Cancer Therapies / Date** May 2016

**Introduction:** Former President Jimmy Carter made news around the world a few months ago when, after a battle with potentially deadly melanoma, he revealed he was cancer-free. Hearing that a so-called “miracle drug” was responsible, Dr. Haidong Dong could not help but smile. Discoveries in a Mayo Clinic lab years earlier had helped to make this therapy, and a new generation of similar cancer therapies, possible. “Lots of people work in these [research] fields for years, for decades,” says Dr. Dong. “They never give up and their persistence eventually makes a big difference.”

The co-director of the Cancer Immunology and Immunotherapy Program in the Mayo Clinic Cancer Center, Dr. Larry Pease, agrees. “Basically at Mayo Clinic what we’re interested in is meeting the unmet needs of the patients,” says Dr. Pease. “But, you know, from a biological perspective, one of the goals is to try to figure out how the immune system works.” “This is our responsibility – to find answers,” adds Dr. Dong. From the Mayo Clinic News Network, Dennis Doua has more on the story.

**Video**

**Audio**

<b>Total running time [3:03]</b>	<b>/// VIDEO</b>
Debra Wagner speaking	<b>“I noticed a lump under the skin.”</b>
Dennis Doua speaking	Debra Wagner is in a fight for her life, a fight shared by more than a million Americans who are currently battling one of the deadliest of all cancers.
Debra Wagner speaking	<b>“And, I burst into tears. The melanoma was in my brain, and it was also in my liver and my lungs.”</b>
Dennis Doua speaking	Yet, in spite of a dismal initial prognosis, Debra says hope is literally flowing through her veins, delivered drop by drop, in the form of the drug Keytruda. For about one-fourth of melanoma patients, this immunologic agent seems to work wonders. The most famous patient may be former President Jimmy Carter. Like Debra, his melanoma had also spread to his liver and brain. Like Mr. Carter, Debra says, after seven months of treatments with Keytruda, her cancer went into remission.
<b>TITLE: Debra Wagner Melanoma Patient</b>	<b>“I am so grateful to whomever had a hand in developing a drug.”</b>
Dennis Doua speaking	Just a few blocks from where Debra is being treated, is the immunology lab of researcher Dr. Haidong Dong.
Dr. Haidong Dong speaking	<b>“So, it’s very, very exciting and rewarding.”</b>

Dennis Douda speaking	As a young physician in China in the 1990s, Dr. Dong wanted to know why the immune system seemed blind to cancerous tumors in his patients. His quest for answers continued at Mayo Clinic, under the direction of Dr. Lieping Chen. After years of trial and error, what did the laboratory find?
<b>TITLE: Larry Pease, Ph.D. Immunology Mayo Clinic</b>	<b>“That there exist molecules, that were previously unknown, that are involved in lymphocyte communication, that regulate how the immune system turns on and turns off.”</b>
Dennis Douda speaking	The Director of the Center for Immunology and Immune Therapies, Dr. Larry Pease, recalls the days of Mayo Clinic’s breakthrough discoveries. The B7-H1 or PD-L1 molecules, seen as the brown film covering cancer cells in this magnified image - turned out to be the enemy of potent, disease-fighting white blood cells called T-cells. Dr. Dong and his Mayo colleagues developed an antibody to block the molecule’s function.
<b>TITLE: Haidong Dong, M.D., Ph.D. Immunology &amp; Urology Mayo Clinic</b>	<b>“Then, we rescue the T-cells. Now, the T-cells can fight the tumors again.”</b>
Dennis Douda speaking	After the findings were published, multiple pharmaceutical companies began leveraging Mayo Clinic’s discoveries to develop and win FDA approval for a new generation of cancer-fighting drugs.
Dr. Haidong Dong speaking	<b>“So, start from the science – to medicine.”</b>
Dennis Douda speaking	Dr. Pease says Mayo Clinic’s contributions are a perfect example of the priceless value of basic science research.
Dr. Larry Pease speaking	<b>“But, the more we know about how the immune system works, the more opportunities there will be to connect these individual pathways to disease systems that matter to our patients.”</b>
Debra Wagner speaking	<b>“I cannot say enough about how grateful I am.”</b>
<b>Closing slide/Music Stinger</b>	<b>/// Copyright Slide</b>

**Anchor tag:** Dr. Dong says he and fellow physicians and research colleagues are now striving to find ways to make Keytruda and other immunologic therapies work for a broader range of patients. He also says Mayo Clinic teams are close to developing new biomarkers to detect and to monitor how patients are responding to the drugs.

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