Druker speaks on Gleevec, combating leukemia

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Published: Tuesday, November 13, 2012
Updated: Tuesday, November 13, 2012 02:11

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Brian Duker spoke yesterday in the Milam Auditorium for the Tsoo E. King Memorial Endowment lecture.

Last night in the Milam auditorium, graduate students in the department of biochemistry and biophysics hosted Brian Druker, director of the Oregon Health Science University Knight Cancer Institute and creator of the cancer drug Gleevec, as the speaker for this year's Tsoo E. King Memorial Endowment lecture.

"I think it's a fairly unique opportunity for graduate students to get involved and interact with such a high-quality scientist," said Jeffrey Greenwood over the phone, an associate professor in the department of biochemistry and biophysics.

According to Greenwood in a phone interview, graduate students use the Tsoo E. King Memorial Endowment to invite a speaker and are responsible for coordinating the lecture.

Jared Williams, one of the graduate students involved in hosting the lecture, said that Druker was invited because he is "a fantastic cancer expert in our backyard."

The endowment itself, as explained by a pamphlet provided at the lecture, is the legacy of Tsoo E. King, a former professor in the department of chemistry at the University of Oregon. King's wife Shu King founded the Tsoo King Memorial Lectureship in 1991.

Druker began the lecture by discussing the optimism of the 1900s, an era stricken by infectious diseases with few cures, but also held an abundance of hopefulness for the future. The addition of fluoride to the water supply and the advent of refrigerators were among "public health measures that made our food and water safe."

Druker's message was one of optimism, using past examples of triumph over deadly infections to support the idea that cancer will also be conquered, like the discovery of penicillin in the 1940s and the 1955 polio vaccine that nearly eradicated the virus.

“We think about the incurable illness, the devastation of the therapy,” Druker said to the audience, “but the reality is when you listen to people like me and even some politicians, we’re optimistic.”

Druker experienced difficulties getting pharmaceutical companies to pick up the anti-cancer drug Gleevec, designed to target chronic myeloid leukemia, because the high costs and poor success rates of developing a drug that only had a small projected market size, but in 1993, he began working with Novartis Pharmaceuticals.

During clinical trials, patients taking Gleevec responded: “These are the magic bullets that cancer researchers have dreamed about,” Druker said.

Using the analogy of a thermostat to help the audience understand Gleevec’s functions, Druker explained normal conditions have cellular regulation going on quietly in the background, like a thermostat. Cells “grow, divide, shut down,” Druker said. “Imagine now the thermostat gets stuck on.”

The cellar analogy to a stuck thermostat causes something to go wrong and “cells are told to grow, and grow, and grow and grow.”

Druker compares options to control the unrestrained cell growth like chemotherapy to hitting the thermostat with a hammer, and bone marrow transplant as an expensive thermostat replacement.

“Imagine if we could take apart the thermostat piece by piece,” Druker said.

According to Druker, finding the non-functioning part of the thermostat and replacing it, or in the case of a cell, figuring out what precisely is causing the cell to malfunction and fix it, is what Gleevec does.

Gleevec was approved by the Food and Drug Administration in 2001.

“Our task for this century is to finish the job we started here in Oregon with Gleevec,” Druker said.

Druker stressed that “we can’t be patient” when waiting for cancer cures, and said the opportunity was there to make a major impact on cancer treatment within the decade for the sake of patients who need the life-saving medical advances.

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