

NOTABLE CANCER CENTER MEMBER

Martin S. Tallman, MD



Finding treatments that make patients' leukemia disappear without causing side effects is music to the ears of Martin S. Tallman, MD. And he knows music.

Tallman, a Professor of Hematology and Oncology and Chair of the Eastern Cooperative Oncology Group (ECOG)'s Leukemia Committee, is an accomplished cellist, who played with the Chicago Youth Orchestra. He began his undergraduate work as a music major, but classical music's loss was leukemia research's gain. Though his love of music continues – and occasionally crosses paths with his medical work – his research into methods to improve the treatment of patients with leukemia has yielded an appreciation of the intricacies of hematologic malignancies.

“I was at the University of Michigan as a ‘cellist for a year in the School of Music and although I love classical music I didn’t think that was what I should do professionally, and I always thought science was interesting,” Tallman says.

Role models have played a big part in Tallman's ascension from science enthusiast to medical student to professor who currently serves in two major capacities in researching hematologic malignancies – as the chair of ECOG's Leukemia Committee and as Associate Editor of *Blood*, the major journal for both clinical and fundamental basic research in hematology. His first mentor was the father of a childhood friend, a physician whom Tallman admired.

“I thought he had an interesting, very gratifying and meaningful life and he was a very early role model,” he says.

Tallman first became interested in leukemia during his internship at Evanston Hospital when his work led him to oncology and then, specifically, to hematologic malignancies. Another mentor invited him to the American Society of Hematology (ASH) meeting, a high honor for an intern. From there, his interest in blood disorders skyrocketed.

“As I began my internship, I became more and more interested in blood disorders and leukemia and then I was invited to ASH and it all fell into place,” he says. “I always wanted to study leukemia. I never wanted to do anything else. I think it’s one of the most exciting fields in medicine. It’s one of the most fascinating diseases and the fact that the malignant cells are readily visible in the blood makes it appealing to study. It’s an area in which we desperately need better therapies.”

In addition to his work at the University of Michigan, where he earned a bachelor’s degree in biology and zoology, he earned his MD from the Chicago Medical School and completed his fellowship in hematology and oncology at University of Washington and the Fred Hutchinson Cancer Research Center. He joined Northwestern University in 1988 as an assistant professor of medicine and began extensive leukemia studies, focusing on each facet of the disease

Leukemias are divided into two major categories: acute and chronic. Each category has a myeloid and a lymphoid component. Acute leukemias imply that the cells are immature and patients need emergency treatment, while chronic leukemias involve mature cells and the disease generally does not need as immediate treatment. The four basic types of leukemia include: acute lymphocytic leukemia (ALL), acute myeloid leukemia (AML), chronic myeloid leukemia (CML) and chronic lymphocytic leukemia (CLL).

Tallman’s work focuses on developing new therapies for leukemia patients that are less toxic. Most therapies have been unable to differentiate between benign and malignant cells and, therefore, kill any replicating cell in their path, including hair cells and stomach lining cells. But new treatments have been able to target specific cells and diminish patients’

potentially adverse side effects.

“For the first time, we can begin to target specific malignant cells,” Tallman says. “We’re on the verge of tremendous, unprecedented progress based on targeting specific cells. Now some patients don’t lose their hair or get sick – it’s a wonderful and exciting time in leukemia research,” Tallman says.

This progress includes unprecedented cure rates. Though some leukemias are highly curable – ALL has a cure rate in children of 75-80 percent – the field’s shining example is the cure rate achieved in adults with acute promyelocytic leukemia (APL), a subtype of AML. Through the development of a vitamin A pill, retinoic acid is used to treat the disease and 75-80 percent of patients are expected to be cured. Vitamin A is a natural component of most people’s diets and is the initial treatment for patients with APL.

“This is the first therapy that doesn’t kill the cells, but makes them mature into healthy cells,” Tallman says. “I often tell my patients, leukemia cells are like weeds in a garden and general therapy is like weed killer, but retinoic acid pills turn certain weeds into flowers.”

The treatment is known as differentiation therapy – treating malignant cells so they can resume the maturation process. The process forces cancer cells to mature by restraining their growth and treating the cancerous sections.

Tallman is on the cutting-edge of leukemia research. As Associate Editor of *Blood*, he sees new research and treatments before they are published. As Chair of ECOG’s Leukemia Committee, one of three adult cooperative oncology groups in the U.S., he is among a select group that sets the agenda about leukemia research in the United States. ECOG conducts clinical trials in all types of cancer and has committees representing each type. It is among the largest researchers of cancer in the United States and the governing body of clinical trials among its member universities and medical centers.

The positions have helped him not only to know the latest in research, but also to become a better writer and communicator about his own research. Though he often attends the Chicago Symphony Orchestra and Ravinia with his wife and four children, occasionally breaks out the cello and discusses music with former

college roommates and current friends who teach music or are professional musicians – including a cellist in the Great Paris Orchestra and Lyric Opera Orchestra he befriended when he was recommended as the leukemia physician in Chicago for the man’s mother

“It’s quite fascinating to see different leukemia cells in the blood, and it makes it exciting that you can virtually touch the cells,” Tallman says. “You often can see changes in the blood with successful treatment; you can look day-by-day at the leukemia cells disappearing.”