M

ilitary, fratricide, precocious medical student, and assistant program director, a

cancer center: Craig Thompson has rocketed through a career that has

hasn’t taken him from Boston’s Peter Bent Brigham and University Hospitals,

to Seattle’s Fred Hutchinson Cancer Research Center, to the Nation-

al Naval Medical Center in Mary-

land, to the University of Michigan,

to Howard Hughes. “He was a rising

ite to the University of Chicago.

ually, he splashed down in

In 1999, as scientific

director at the University of Pen-

sylvania’s Abramson Family Cancer Research Institute. And he was just

amed director of the Abramson Cancer Center in September 2006.

One might say that he rocketed through his formative years, too.

“T was a military brat,” says Thompson. “My dad was in the Coast

ad in 1960, his father ran an

ern in long-range navigation and coordinated the deployment of

hips from Pearl Harbor, Hawaii, to retrieve the Mercury space cap-

sules from the Pacific Ocean. “Remember, they just shot those things

the Pacific and hoped they landed there,” Thompson laughs. “We

to meet all the astronauts when they came back. They recovered

capsules and tried them up in my front yard—50 feet from

school. “It was the first time I came out to my house one time, I

remembers. . . . It was really neat.”

‘ Thompson had been born in Boston, and his family made its way

back to the time he was in high school. There, his father ran a

carter that went out to sea for a month at a time, says Thompson,

ixed with his dad’s military

as a naval officer and a research fellow, he cared for bone-marrow trans-

plant patients who were given cyclosporine, an immunosuppressive

drug that prevented the rejection of the new marrow.

But Thompson was puzzled by something. The drug should also

kep the patients’ immune systems from fighting infections, but that

wasn’t the case. The patients seemed to handle infections

le. Thompson’s attempts to find out why launched him on a

journey exploring molecular pathways in the immune system and

mune-based therapies to fight cancer. His lab pioneered the study

role of glycolysis is overestimated.

Thompson and his research colleagues contend that increased gly-

colysis—the processing of glucose—is important for sustaining tumors but

ot necessary for inducing them. Others disagree and say that the

role of glucose for tumor cell survival is overestimated.

Thompson’s lab proposed that the reason “col-

celations of cells live together as a coherent unit is because they have all given up the cell’s au-

tonomous ability to take up nutrients from their environment.” Every

cell in the body is constantly bathed in more nutrients than it would

ever want or need—glucose, amino acids, other building blocks. Yet

ormal cells are unable “to take up those nutrients unless given per-

mission by other cells” in a process called signal transduction. “A cell

ithout those instructive signals will always strive to die despite the fact

there’s an embarrassment of riches outside,” says Thompson. “A cell

can’t proliferate on its own because it can’t even eat enough to

ctually survive.” But in cancer cells, mutations control their ability to

ake up nutrients and allow the cells to grow and proliferate.

Thompson and his colleagues have found a variety of drugs that can intervene in that process that have

ever before been tried as cancer therapeutics, but are actually known to be safe and effective in patients,” he

s. Thompson says, “I think it’s incredibly rewarding to contribute to research that ultimately ends up in the hands of

icians treating patients and makes patients better.”

On a more serious note, he adds, “I think it’s incredibly rewarding to contribute to research that ultimately ends up in the hands of

icians treating patients and makes patients better.”

T

hompson’s theories may have critics, but he has been widely rec-

ognized for his work. He is frequently invited to give talks, has

brilliantly his Penrose Lecture to the American Association for the

ational Academy of Sciences. Last year, he was one of only four cancer scienc-

sts elected to the National Academy of Sciences. He also holds lead-

ng positions in international committees and boards, including editor or on the editorial boards of several important journals, includ-

ng Cell, Science, Immunity, and Cancer Cell. What’s more, he holds a

umber of patents related to immunotherapy and apoptosis and is

et of the targets of two biotechnology companies.

has also mentored more than two dozen students and fellows who have gone on to successful careers in academic medicine. “In the end, success is not measured by how many publications they have, or how many of their discoveries have made it into the clinic. What counts is whether they have had a lasting impact on the field,” says Thompson. “And I think it’s clear that they have.”