

Frank W. Fitch (1929–2021)

It brings great sadness to convey the news of the death of our friend, colleague and mentor Frank W. Fitch. Frank was one of the founding leaders of the immunology community at the University of Chicago, where he worked for his entire career. He made major contributions to our understanding of T cell biology, functional and phenotypic T cell subsets, and the process of organ transplant rejection.

Frank began as a medical student at the University of Chicago in 1949, and, after receiving both his MD and PhD degrees, he remained on the faculty in the Department of Pathology. He was an active teacher, truly fitting the role of professor not only for graduate and medical students but also for undergraduates. He had a rare and special teaching style that encouraged independent thought and experience-based learning, which helped to drive an excitement for research. In 1983, when I was an undergrad in his BioSci class called “Defense Mechanisms,” he placed a tetanus toxoid intradermal injection in his left forearm right in front of us so that each day we could follow the development of a delayed-type hypersensitivity reaction and the cardinal signs of inflammation. In that same class, he would navigate the discussion toward a paradox, then ask students to propose ideas that could explain it—that is, to generate hypotheses. He would sit in silence—sometimes for multiple minutes—until someone primed the pump with some initial thoughts. What patience! He ran his lab, where I did my PhD work in the late 80s, more or less like an artist colony, his philosophy being that if you assemble a group of smart and motivated people in the same room and provide them with resources, something interesting and novel would eventually emerge. His job was to secure funding and then tweak your thinking and direction on the basis of his experience and wisdom, while ensuring rigorous data interpretation. And when he presented your work as part of a big talk at a major conference, he fully acknowledged you as the driver of the project. All of these practices converged to inspire students to become scientists.

Frank was too humble about his major accomplishments and leadership roles.



Most are not even listed on his CV. He was a servant to the greater immunology community in multiple ways—president of the American Association of Immunologists (AAI), member of the AAI council, chair of the Publication Committee and editor-in-chief of the *Journal of Immunology*. While at the helm of *Ji*, he pushed the transition of the traditional paper journal to the digital format. He served as president of FASEB, where one of his most important roles was to testify before congress to advocate for increased funding for biomedical research. While at the University of Chicago, he was promoted to professor in 1967 and held the Albert D. Lasker professorship. He served as associate dean for Education Affairs, associate dean for Academic Affairs and dean for Academic Affairs and was leader of the Immunology program within the Cancer Center. He was also director of the Ben May Labs, which became the Ben May Institute for Cancer Research under his leadership.

Frank's primary research accomplishments, I believe, are relatively under-recognized. He and his collaborators worked out the techniques for long-term culturing of T cells. This enabled the derivation of T cell clones, which could then be studied for various functional properties. Some T cell clones were

found to be cytolytic, and some were proliferative in an autocrine fashion. Antigen specificity and MHC restriction became better defined, and “T cell growth factor” (also known as interleukin-2) was characterized. He then learned the new monoclonal antibody technology and had a bold idea that would seem high risk by NIH funding standards today: he proposed to immunize rats with cytolytic T cell clones versus proliferative T cell clones to generate mAbs that defined these functional subsets. The output from this project was enormous—the key Abs were specific for what eventually became known as CD4 and CD8, the surface markers that defined these functional cell subsets. Screening for other Abs that blocked T cell activation or that labeled surface molecules led to reagents against MHC molecules, LFA-1, Thy1, CD45 and, ultimately, the holy grail—the T cell antigen receptor (TCR). Using his expertise in mAb technology, he collaborated with multiple individuals, including Geoffrey Greene, who generated the first mAb against the estrogen receptor, which helped define its expression and biology. During this time, Frank trained 35 graduate students and ultimately received a Mentoring Award as well as a Lifetime Achievement Award from the AAI.

Indicative of the gratitude and admiration for Frank, an endowed lectureship at the University of Chicago was established in his name as well as that of his late wife, Shirley Dobbins Fitch, through a grass roots philanthropic fundraising effort. This annual seminar will maintain key memories of Frank and his impact on the field as the audience ponders new information about the immune system and cancer. Those of us who were close to him will miss his intellect, his dry sense of humor, his humility, his career support and his character. □

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