How Dr. Rabson's superior leadership resulted in outstanding organizational achievement

Over his half-century of service at the National Cancer Institute (NCI), Dr. Al Rabson, who still prefers to be called "Al," has been a beneficent force responsible for catalyzing the world-class research that has come from our laboratories on the campus of the National Institutes of Health (NIH). During that time, the overarching achievement of the NCI has been the phenomenal rate at which its research has yielded major discoveries. One factor, above all others, has been responsible for this success: the presence of Al.

Al joined the NCI in 1955, when it was only 17 years old, and quickly established a highly productive research laboratory, where he studied the role of viruses in cancer. He published an average of 7 papers per year in highly-respected, peer-reviewed journals, an extraordinary pace. In 1975, he was named Director of the NCI's Division of Cancer Biology, and Diagnosis (DCBD), later to become the Division of Cancer Biology, Diagnosis, and Centers (DCBDC). He served there for 20 years, and then was appointed Deputy Director of the NCI, where he still serves.

Although an M.D. himself, one of his greatest attributes in his leadership roles has been his respect for fundamental biological research, that is, research directed at the deepest, most basic biological questions, but not necessarily possessing any immediate clinical value. This outlook, together with his honesty, intelligence, and fairness, soon attracted the interest of many promising young scientists. Some had research ideas with time-lines so long-range, or with such a small likelihood of success, that they stood a poor chance of getting funded by the usual grant application system that underwrote most of the nation's research. Yet Al could see that, if these projects were successful, they would yield great benefits. So he promised his full support to those he sought to join him at the NCI, specifically that they would be funded, and that they would have the freedom to pursue their work wherever it led.

The words of one of these scientists, Carl Wu, Ph.D., are echoed by all: "Al was the NCI division director who supported my recruitment. It was very important for me to know as a young tenure track recruit that Al truly supported basic research in cancer biology, because at the time the link between my work and cancer was quite distant. Yet he supported my recruitment and provided total freedom to investigate a very tough problem in basic biology [the role of chromatin in gene expression] with no clear and obvious route to a solution. This support was maintained and re-emphasized over successive site visits [quadrennial evaluations by an independent, outside panel] where he publicly espoused to the panel his philosophy of bringing the best available scientists into the department and then getting out of their way. We consistently published important papers under his watch, but it did take 12 years to finally achieve the breakthrough discovery of chromatin-remodeling enzymes - work for which I am most recognized, including my recent election to the National Academy of Sciences. That kind of long term support on a high-risk project is very hard to find elsewhere and is what kept me here. Later on, as NCI Deputy Director at a time of significant cuts at NCI, Al was the one who kept me from leaving by ensuring continuous support for our research program so we would not lose research momentum. You could say he was my administrative godfather."

Al's guiding philosophy toward science is twofold. First, he has never interfered with the research being carried out. And second, he has always nurtured the scientists to the fullest extent possible. Sometimes this has meant providing funding for an unusually expensive piece of equipment, or for additional personnel, or for conducting workshops overseas. Other times, he has created the laboratory space needed for research projects. At all times, he has been pleasant and helpful and enthusiastic toward everyone, whether scientist, patient, employee, or visitor. He is very much a man of the people. Though he maintains a quite-busy schedule, if anyone calls him, they can have a face-to-face meeting within 2 hours, without exception. Al is known as the person who, rather than saying no, does everything he can to "make it happen." He is totally dedicated to the NCI's intramural research program, to the point that he gave up his own very successful lab to better focus on the needs of his researchers. Many would fear losing touch with their science if they gave up their laboratories for an administrative position. But Al has kept abreast of the latest research by attending national and international scientific conferences, as well as local NIH and NCI research festivals. He remains exceptionally well-informed.

The success of Al's approach can be seen in the discoveries that emerged from those he brought to NCI. In the non-clinical arena, his recruits helped to lead the molecular genetics revolution of the mid-late 1970s. In addition, they made myriad discoveries about cellular and viral biology, such as the mechanisms by which: hormones enter cells and elicit responses; DNA replication is triggered; various genes evolved and operate; molecules are transported within the cell; identical cells become specialized into different tissues during embryonic development; defective proteins are identified and degraded within a cell; chromosomal architecture affects gene function; viruses infect, replicate, and spread; immune cells function and are regulated; and many more.

Moreover, as Al anticipated, many clinical benefits have resulted from these fundamental discoveries. From his recruits came insights into how cells become cancerous, as well as how cancer cells become resistant to chemotherapy, a major limitation of all forms of chemotherapy. They also developed novel anti-cancer immunotoxins, composed of potent toxins linked to antibodies that bind to cancer cells. In small clinical trials, these immunotoxins have cleared the cancer cells from advanced-stage patients, allowing the return to a normal life. These therapies are now being tested in larger trials, and some have received FDA approval. Al's scientists have also found ways to disrupt the growth signals that spur cancer cells to multiply wildly.

Laser capture microdissection (LCM) is another new technology to emerge from this group of laboratories. LCM enables the isolation and molecular characterization of individual cells from heterogeneous populations normally found in tumor samples. This capability has proven to be of great worth in studying cancer cells without the interference of normal cells.

In the headlines of late is a vaccine that they have developed that has proven highly effective against human papilloma virus (HPV), the cause of virtually all cervical cancer. It has received FDA approval and is currently available to the public as Gardasil or Cervarix. Because of its ability to prevent HPV infection, this vaccine promises to wipe out cervical cancer.

In addition to aiding the fight against cancer, these innovations have at times been so fundamental that their use is not restricted to anti-cancer therapy. The immunotoxins have demonstrated effectiveness against graft rejection and against autoimmune diseases such as multiple sclerosis and uveitis, and are currently in trials against many others. LCM is useful in isolating pure cells from any heterogeneous cell population, such as those naturally occurring in various non-diseased tissues.

The above accomplishments are those that have emerged directly from the laboratories of the scientists recruited and nurtured by Al. As is always the case with science, there have been countless further discoveries made by other researchers that have been based upon these.

Thus, Al's leadership contributions have created a highly productive research program at the NCI that is advancing the state of cancer treatment in the U.S. and around the world. As is mentioned in both of the narratives being submitted, he is that rare individual who has progressed from outstanding scientist to outstanding administrator, and the NCI has benefited greatly from amplifying Al's influence in this way.