



---

## A NEW SCRIPT FOR CANCER RESEARCH

### **JEROME GROOPMAN, M.D.**

Successful experiments are built on a vision of the future and overcome the pitfalls of the past. "Stand Up to Cancer" promises to be such an experiment - ambitious in aim, grand in scale, and smart in design. It is an experiment that will involve not only laboratory scientists and clinicians, but potentially every American.

I admit that I felt considerable skepticism when I first heard months ago about a new national effort to combat cancer. I had studied and written about the "War on Cancer" launched in 1971 by the Nixon administration. The intentions of the physicians, philanthropists and politicians at that time were undoubtedly good, but the initiative failed to fulfill expectations.

The scientists and funders of that effort believed in what was then conventional wisdom, wed to one model of the disease: that most human tumors were caused by viruses. They believed this because some cancers in animals like mice and chickens were found to follow infection with these microbes.

Vast sums of money were directed to this single line of research. The organizers believed so strongly in their idea that they declared that cancer could be conquered in five years, in time for the celebration of the nation's Bicentennial. Researchers with different views about what could cause cancer and how to combat it were given scant resources to pursue their work.

Many years passed until it was finally accepted by all that viruses were not the cause of most human malignancies. Fortunately, important knowledge was gained from this admittedly misconceived effort. That knowledge proved essential in the battle against what, in fact, is a viral disease - AIDS. And the scientists who challenged the prevailing dogma behind the War on Cancer ultimately succeeded; they showed that it is mutations in genes rather than viruses that derange normal cells which then grow and spread in an uncontrolled way - the essence of cancer.

In contrast to the misconceived efforts of the past, the organizers of SU2C have done their homework. They cast a wide net; they elicited opinions and ideas from mainstream scientists and from contrarians working outside the mainstream, from advocates of

---

current paradigms of cancer research and critics of the establishment. They learned what dictated success and what caused failure in ongoing private and governmental initiatives. With this knowledge in hand, they launched this new experiment.

Instead of being wed to one mindset, SU2C seeks creative and novel approaches that span a diversity of ideas. Individual researchers with single projects that could become new clinical treatments within three years will be supported. So will "Dream Teams" that mobilize many laboratories with scores of scientists to translate a platform of biological discoveries into clinical practice.

SU2C avoids the creation of a large and self-perpetuating bureaucracy. It demands milestones and accountability of those who are funded, so that successful work will flourish and projects that flounder will not continue. SU2C is designed to be open, flexible, and forward thinking. It tries to build a different future using the vision of many.

Why many? All researchers have ideas about what is key in the development of a certain type of cancer and how best to treat it. We imagine that our work in the laboratory and in the clinic will fulfill our projections. No one, of course, is always right. Some of our ideas are correct and others are not. Some of our ideas build directly from current knowledge. Others require a leap of thinking that deviates from prevailing concepts.

Some ideas are derived from fields that are most familiar to cancer researchers, like biology and chemistry. Other ideas reach into subjects that may seem less connected to oncology, like physics or engineering, but could enable real progress. The organizers of SU2C draw no boundaries around the origins and the types of thinking. They welcome proposals from all scientific disciplines.

Like smart investors, the organizers of SU2C recognize uncertainty and eschew arrogance, crafting a balanced portfolio rather than placing all the assets on one project or approach. There are safeguards against conflict of interest, so that scientists do not "feed themselves" or their friends. Collaboration and communication underlie each "Dream Team." The predominant culture of failing to share data among researchers will not be tolerated.

One of the most influential people in the creation of SU2C was Dr. Judah Folkman. It is fitting that grants will be given in his memory. I counted Judah as both a colleague and a friend. He was a surgeon who early in his career thought differently about how to treat cancer. Judah focused on how tumors promote the growth of new blood vessels to nourish themselves. In retrospect, like many brilliant insights, Judah's idea seems almost self-evident now. But for decades, he was shunned, hard-pressed to find funding, a voice in the scientific wilderness.

The research establishment refused to consider this novel strategy of choking a cancer by cutting off its blood supply. Rather, most scientists continued to do what they were

---

doing, at first searching for drugs to block the imagined cancer viruses, and then synthesizing more chemotherapy agents to poison the malignant cells. Judah died recently, an untimely death, but he lived long enough to see his ideas come to clinical fruition. Blocking blood vessels is now a treatment for many with cancer, and virtually every major research enterprise considers this biology as it plans its work in the field.

Judah's work proved to have personal import for my family. This past March, my mother died of breast cancer. The quality and length of her life were significantly enhanced by Judah Folkman's research. She was a fighter, and while she had no illusions about the gravity of her condition, she also knew that science could change a patient's world.

I had testified to that. In the three decades of my work as a laboratory researcher and clinician in oncology, I had witnessed what once would be called a miracle then quickly became commonplace. Men with testicular cancer filling their lungs, liver, and bones, who previously faced certain death, emerged because of new therapies to a full and healthy life. Children with neuroblastoma, acute leukemia, and sarcomas, once so lethal, could be treated, and the majority could now be cured. Even short of cures, there were targeted therapies that made malignancies controllable with minimal side effects. These therapies include Gleevec for chronic myelogenous leukemia and Rituxan for lymphomas. In my mother's case, the antibody Avastin, which was designed from Judah's insights, had a dramatic and sustained benefit.

Alas, for the majority of people with cancer, there simply isn't enough. What is needed is more Folkman-like advances, more creative ways of thinking that usher in new paradigms of treatment.

There is a certain irony that the people who launched SU2C come from Hollywood, a place that produces fantasies, diversions from reality. There is no fantasy in how this initiative is conceived. There is no diversion from reality in how it will be run. SU2C understands how American science operates, why it succeeds and why it stumbles. It offers a path that is marked by true hope - clear eyed and feasible, setting goals that are within our grasp. It is a bold experiment whose success can profoundly better our lives. We are all invited to become part of it.

\*\*\*\*\*

Dr. Jerome E. Groopman holds the Dina and Raphael Recanati Chair of Medicine at the Harvard Medical School and is Chief of Experimental Medicine at the Beth Israel Deaconess Medical Center. Dr. Groopman, [staff writer](#) at *The New Yorker* magazine and prolific editorialist at publications nationwide, writes regularly about biology and medicine for lay audiences. His books include "[The Measure of Our Days](#)" "[Second Opinions](#)" and "[The Anatomy of Hope](#)" New York Times bestseller "[How Doctors Think](#)" published in 2007, explores how physicians arrive at the correct diagnosis and treatment, and why they may not. He and his spouse, Dr. Pamela Hartzband, co-author a bimonthly column for "*ACP Internist*," publication of the American College of Physicians.

---

\*\*\*\*\* [www.standup2cancer.org/magazine](http://www.standup2cancer.org/magazine)