

Mark Israel, M.D.: Mega-mentor

By Laura Stephenson Carter

For several months in 2001, even before pediatric oncologist Mark Israel, M.D., went on the payroll as the director of DHMC's Norris Cotton Cancer Center, he was flying across the country every week—between California and New Hampshire—to meet with Dartmouth clinicians, researchers, and administrators. He also met with the architects who were planning an expansion of the Cancer Center building. Early on, Israel delivered an impassioned 20-minute speech about how the new Cancer Center would be a place where scientists and physicians could interact, collaborate, generate ideas, and ultimately develop new therapies to conquer cancer.

By 2003, under Israel's leadership, Norris Cotton Cancer Center had grown from four stories to eight. Not only was it architecturally beautiful—with sunny labs; graceful, arched ceilings; brightly painted walls; dramatic atriums; and windows several stories high—but it was practical—with adjustable benches, shelves, and drawer units that can be reconfigured to create flexible lab layouts. And perhaps of most import, the space was socially inviting—with lounges, common areas, and meeting rooms where scientists can mingle and share ideas for collaborating on projects.

"I don't think I realized how important building the building actually was," Israel says now. "It's really become a nidus around which enthusiasm and commitment and a sense of importance for cancer medicine and cancer research has emerged. And that has far exceeded my expectations."

Dartmouth's cancer center is one of only 39 in the U.S. designated as a comprehensive cancer center by the National Cancer Institute (NCI). Its physicians provide care for all types of cancers, and its researchers explore a broad range of issues, such as immunotherapy, drug resistance, drug mechanisms, drug metabolism, psycho-oncology, imaging, gene expression, and palliative care. Yet if you met Israel on the street—or at DHMC, for that matter—you might never guess that he presides over such an impressive enterprise. He's friendly and easy-going and often casually dressed. He's more likely to be sporting a fleece vest over a shirt with its sleeves rolled up, than to be wearing a white lab coat or a suit and tie.

Knowing Israel's background, you might also never guess that he'd have ended up in medicine. His grandparents and parents ran a family business for years in Newburgh, N.Y.—a department store called Israel's. But Mark Israel wanted to be a doctor—maybe a psychiatrist—and so after college he enrolled in Albert Einstein College of Medicine in New York City.

"I really got interested in the scientific part of medicine in medical school," he recalls. "I think I was really impressed with how little we

knew about so many different things. I had always liked science. I liked the idea of applying science."

One summer, after his second year in medical school, he worked in a psychiatry lab at the Maudsley Hospital in London. "I had a wonderful experience in London, but I had a terrible experience in the research piece because it just seemed very superficial to me," recalls Israel. The research he was doing that summer focused on behavioral interventions to help people overcome phobias.

When Israel returned to the United States, he took a year off from medical school to work in a neurochemistry lab at Downstate Medical Center in Brooklyn, N.Y. "That turned out to be a very productive experience, and I really learned a lot," he says. "I got very excited about laboratory research."

After completing medical school in 1973, he did a residency in pediatric oncology at Boston Children's Hospital, then a postdoctoral fellowship in molecular genetics at the National Institutes of Health (NIH).

"I got very lucky because I landed there right after the advent of recombinant DNA technology," he says. "One of my first assignments in the lab was to clone a tumor-causing virus called polyoma virus. That work ended up being done at the Army's Fort Detrick germ warfare facility under what at the time was the most restricted, most protective kind of research environment—in negative-pressure hoods and negative-pressure buildings, shower-in/shower-out," Israel explains, "because there was fear that the cloning of a virus into a bacteria would get into the water supply and everyone would get cancer. The risks associated with molecular cloning were totally unknown, and so everyone erred on the side of safety."

Israel spent 14 years at the NIH, including as head of the NCI's Molecular Genetics Section. "That was an exciting time in science, and my lab was lucky to be a part of all that," he says. It was "a time of great and rapid discovery in the area of cancer medicine and the molecular basis of cancer biology."

In 1989, he left the NIH for the University of California at San Francisco, to head the Preuss Laboratory for Molecular Neuro-Oncology. The Preuss Lab studies the origin, diagnosis, and treatment of nervous system malignancies, including brain tumors. At UCSF, Israel "had a pretty typical molecular genetics, cell biology, cancer medicine laboratory, and I also had a small involvement in clinical practice," he explains.

In 2001, when Israel came to Dartmouth, he brought his lab and some of its researchers with him. He made the transition from lab director to cancer center director look easy. "I don't think it was a horrible jump for him," says Nathan Watson, who has managed Israel's lab since it was at UCSF. "The schedule, I think, was just a matter of

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getting used to. He has incredible amounts of energy.”

Energy enough to manage days filled with meetings, phone calls, and research. “Today is a pretty typical day,” Israel says as he consults a piece of paper that he has pulled out of his breast pocket. “I started with a phone call down to Manchester [N.H.], where we’re building a new cancer center.” He next spent 45 minutes talking with the chair of medicine about recruitments; 90 minutes at a group lab meeting; an hour conferring individually with lab staff; 30 minutes at a meeting to discuss buying a new piece of imaging equipment; and 30 minutes at a meeting about establishing a new research venture focused on quality-of-life issues such as pain control.

Later, he’ll meet for an hour with a DHMC vice president to talk about clinical matters. After that he’ll attend two meetings regarding fund-raising, followed by a meeting related to the Medical School’s upcoming site review by the Liaison Committee on Medical Education. “Then I’ll be in the lab for an hour, then I do my day’s [paper]work,” he says. He usually gets to work before 7:00 a.m. and goes home after 7:00 p.m. “Clinicians like to have early-morning meetings [that are] not disruptive to their day. And scientists like to have evening meetings. I end up meeting with clinicians early in the morning and scientists late at night. It can be a long day. But I enjoy it.”

And as busy as he is with administrative duties, he is still engaged as a principal investigator (PI) in his own research. His lab works on the genetics of brain tumors, determining which cell types are likeliest to give rise to tumors and studying the regulation of tumorigenesis. Israel often stops by the lab, between meetings, to see how things are going. “He’s involved in the planning, with regular meetings to detail out what the research is going to be,” Watson explains. “He has a very good balance between telling you what to do and allowing you to be your own researcher. In return, he likes to be involved to the extent that somebody comes and says, ‘Hey, Mark, would you come and look at this plate of cells?’ He’s still technical enough that you don’t have to change the way you talk about experiments for him to be right on top of it. And that’s very rare. A lot of PI’s who are that removed, you have to lighten the talk up for them.”

As devoted as Israel is to his research, he is even more interested in the well-being of the people who work for him—scientists, clinicians, and administrators. At his lab’s weekly meetings, where researchers take turns presenting their work, Israel offers advice and ap-



JON GILBERT FOX

Mark Israel heads Dartmouth’s Norris Cotton Cancer Center—one of only 39 National Cancer Institute-designated comprehensive cancer centers in the United States.

proval and gently nudges people to ask and answer questions. At one meeting, he encourages people to visit one of their colleagues whose wife has just had a baby. He even asks Watson about it later. “He pulled me to the side this morning and said, ‘How many people from our lab have gone to see them? Send them out,’” says Watson. “He’s as nice as people—quote, unquote—see him as.”

Yet Israel realizes that today’s competitive scientific environment calls for more than mentoring. He worries that as the government cuts funding for medical

research, young scientists may be at particular risk. “I think the real problem is not to lose a generation of young scientists who want to become cancer researchers but don’t have the opportunity to,” he says. “I see how difficult it is to establish yourself as a scientist and how high the expectations [are] for creativity, innovation, successful productivity. It’s not easy to become a professional scientist, especially in an academic environment. It’s competitive your entire life. And it’s competitive in an international world.”

So in addition to mentoring young scientists, doing research, publishing papers, and running a cancer center, Israel is engaged in regional, national, and international efforts to expand cancer research and care. He is overseeing initiatives to bring care closer to patients by opening Norris Cotton branches in Manchester, N.H., and St. Johnsbury, Vt. He serves on a number of national committees. And his international work includes helping the University of Heidelberg establish a cancer center. “There are no comprehensive cancer centers in Germany, even though Germany is one of the real hotbeds for cancer research,” he says. “Because of the historical development of their research institutes and universities, they have not had as easy an integration of the clinical medicine and disease-oriented research as has happened in the U.S.”

That integration has advanced at Norris Cotton even in the four years since Israel arrived. “One thing that clearly has . . . matured significantly during the time I’ve been here—has been the expansion of the translational research efforts,” he says. “With my coming, wet labs were built in the clinical cancer center, and new scientists—really outstanding new scientists—have been hired to populate those labs. I’d say everything the cancer center leadership does, not just me, is focused on trying to integrate these activities as a means of doing a bet-

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ter job of taking care of people at risk for cancer or people who have cancer.”

The next step in that process, Israel says, will be an exploration, in collaboration with other researchers at Dartmouth, into nanotechnology. “How nanotechnology will actually fit into cancer is still an area of active investigation,” he says. “The idea . . . is that you utilize manufactured things that are very small in order to go places and do things that larger things couldn’t do. These particles can be anything from simply a homogenous particle of, let’s say, iron to something very complex like an entire machine.” Nanoparticles might one day, for example, circulate in the bloodstream and deliver chemotherapy directly to tumors.

In the meantime, Israel continues to deal with the day-to-day excitement and challenge of running an enterprise that is “mega” rather than “nano” in scale. Norris Cotton now has 282 physicians and scientists, 365 other staff, 276 funded research projects, 148 clinical trials, and more. Its leader feels, he says, like he’s gotten “on a fast-moving wave . . . it’s been a great ride.” ■

Virginia Delaney-Black

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broker in the Chicago area, and she considers him her “number-one source of pride.”

Delaney-Black shows no signs of slowing down, even though she and her husband are planning to build a retirement home in Boothbay Harbor, Maine. As she looks toward the future, she hopes to renew her association with DMS, which honored her as a notable alumna in a 1997-98 exhibit, “200 Years of Alumni Achievements.” In fact, she and Little have discussed ideas for a joint research project. “I’d like to keep my finger in the pot somewhere, and Dartmouth’s a good place to do that,” she says.

Given her tireless work ethic, Delaney-Black doesn’t expect she’ll ever stop working; she hopes even at age 80 to still be doing research or participating on committees. She’s thinking about patients like Sean and Diana when she considers her legacy as a doctor. When asked how she’d like to be remembered, Delaney-Black has a simple answer: “As somebody who cared.” ■

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