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New England Science Symposium — Keynote 2011

Lee M. Nadler, MD

AT THE 10TH ANNUAL NEW ENGLAND Science Symposium in April, Lee M. Nadler, MD, director of Harvard Catalyst and dean for clinical and translational research at Harvard Medical School (HMS), spoke in his keynote about the impediments to translating knowledge gained through research to clinical application and the tremendous opportunities for those who choose to pursue this field.

Knowledge about biology has increased exponentially since the 1970s, he explained, from cell structure to how cells speak to each other. “Nearly every molecule on the cell surface and most genes are known,” he said. “Unfortunately, only small percentages of this knowledge have helped to unravel the mechanism of any human disease and impacted diagnosis, treatment or prevention of that illness. The question is why has translation been so slow?”

The answer is complex, involving workforce, incentives, blockades and, of course, funding. But Nadler maintained that the two greatest impediments to translation are the paucity of investigators who focus their careers on studying the biologic mechanisms that underlie human illness and of those who are trained to conduct proof-of-concept human clinical experiments.

Nadler said he was inspired to get into medicine by a book he read when he was 16 years old. *Arrowsmith*, written by Sinclair Lewis in 1926, is about a young physician (Martin Arrowsmith) who wants

to do research. Lewis won the Pulitzer Prize for that book, and he was the first American to win the Nobel Prize in Literature. “When I finished that book, I wanted to grow up to be Martin Arrowsmith,” Nadler said. “I grew up as a poor blue collar kid in New York City and never had



LEE M. NADLER, MD

the opportunity to get to know any physician. When I started Harvard Medical School, the only physician I knew was Martin Arrowsmith, and I have spent nearly 50 years trying to live up to his lofty goals.”

Nadler received his medical degree from HMS in 1973. He did residency training at Columbia-Presbyterian Medical Center



New England Science Symposium

THE 10TH ANNUAL NEW ENGLAND Science Symposium (NESS) took place on April 1 at The Joseph B. Martin Conference Center at Harvard Medical School with students from 118 institutions in 31 states and Puerto Rico. Lee M. Nadler, MD, dean for clinical and translational research at Harvard Medical School and director of Harvard Catalyst, delivered the keynote address.

Sponsors and supporters of this year's symposium, which promotes careers in biomedical sciences, included the Harvard Medical School Minority Faculty Development Program; the Biomedical Science Careers Program; Harvard Catalyst; The Harvard Clinical and Translational Science Center; Genzyme Research; Novartis; the Office of Minority Health, through Cooperative Agreement No. MPCMPO51007; the Harvard FAS

Center for Systems Biology and the NIGMS Center for Modular Biology, Grant No. GM68763; and the Harvard Medical School Department of Systems Biology and Cell Decision Process Center, Grant No. GM68762.

The NESS planning committee included current and former BSCP students, Hope Scholarship recipients, BSCP student advisors, and one BSCP board member who is a current student and Hope Scholarship recipient. In the afternoon, Eydith Comenencia Ortiz, PhD candidate at the Sackler School of Biomedical Sciences at Tufts University School of Medicine, a BSCP student and 2009 Hope Scholarship recipient, led a panel discussion entitled, "Road to Science: Navigating Your Career." Panelists included Andrew Campbell, PhD, associate professor of medical

science, Brown University Graduate School; Silvia Corvera, MD, professor, Program in Molecular Medicine, Department of Cell Biology, University of Massachusetts Medical School; Melodie Knowlton, PhD, presidential postdoctoral fellow, Novartis Institutes for Biomedical Research, Inc.; and Rebecca Ward, PhD, executive director, Department of Systems Biology, Harvard Medical School.

Twelve oral and 210 poster presentations were selected from 241 abstracts. Prestigious Ruth and William Silen, MD, Dana-Farber/Harvard Cancer Center, Beth Israel Deaconess Medical Center Department of Neonatology Award for Neonatal and Perinatal Research, and the Parcell Laboratories Stem Cell and Regenerative Medicine Research Awards were given for the best presentations in several categories. ■

NEW ENGLAND SCIENCE SYMPOSIUM — KEYNOTE 2011

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and training at the National Cancer Institute in tumor immunology.

"In the late 1970s, I returned to Boston to become an oncologist and give research one last try before becoming a private doctor on Park Avenue," he said. "I wanted to develop new treatments for patients with a disease called B cell non-Hodgkin's lymphoma, the commonest cancer of young people between the ages of 20 and 40. A new technique had just been developed that allowed one to make very specific antibodies. It was called monoclonal antibodies. Looking backwards, I had no idea that the monoclonal antibodies that I would develop between 1979 and 1985 would become the tools to diagnose every lymphoma in the world."

Nadler and his colleagues at Dana-Farber Cancer Institute developed and administered the first monoclonal antibody to a human in 1979. An antibody that they developed that year called B1 became the anticancer drug Rituxan, which has improved the cure rate of lymphoma by about 30%. Everyone in the world with a B cell lymphoma now receives treatment with Rituxan. "As I get older, every year I better understand both Arrowsmith's vision and trials and tribulations," Nadler said.

For the past three years, Nadler has been leading a team across Harvard called Harvard Catalyst, also known as the Harvard Clinical and Translational Science Center, which fosters collaborative work among thousands of laboratory and clinical researchers. "Our commitment," Nadler said, "is to grow a new generation

of investigators who are committed to taking science to the bedside and then taking bedside observations back to the laboratory. Our accomplishments are early, but I increasingly believe that Harvard Catalyst has the potential to grow a community of Martin Arrowsmiths who will make sure that science improves the lives of our patients."

For those who choose to join it, Catalyst can provide "a great opportunity, a difficult career pathway and potential for extraordinary fulfillment," he said. ■

Where Are They Now?

Judah Weathers

“I FEEL LUCKY. I KNOW I LOVE WHAT I’m doing,” says Judah Weathers, an MD/PhD candidate at Yale University School of Medicine and Oxford University in England. Weathers’ PhD will be in psychiatry, and he hopes to complete both degrees by the middle of 2013.

“I knew I wanted to do research before I started medical school, but I didn’t know what I’d be capable of doing time-wise,” he says. During his third year of medical school, Weathers learned about a National Institutes of Health (NIH) program through which medical students can earn an MD/PhD, conducting their research at the NIH and either Oxford or Cambridge. He applied immediately and was accepted.

Weathers wrote his PhD research proposal at the NIH in Washington, D.C., during the summer of 2007. That fall, he left for Oxford, where he spent three years conducting neuro-imaging studies of bipolar-disordered children and adults. Weathers is back at the NIH now, analyzing data from his studies and conducting another on reward learning in people without any diagnosis of mental illness.

In September 2012, Weathers will begin his final year of medical school. Once he completes his combined program, he hopes to begin a residency in child psychiatry. With an interest in developmental abnormalities, Weathers has not yet decided whether he wants to practice straight psychiatry or neuro-psychiatry. His interest in bipolar disorder came about “because it’s touched people close to me,” he says. “We’re close to being able to help people function at a very high level.”

A native of New Hampshire, Weathers graduated from Northeastern University in 2004. A premed student, he majored in behavioral neuroscience. Until his senior year of high school, he explains, it was

not at all clear that he would even attend college. “I was raised as a Jehovah’s Witness, and they don’t encourage going off to university.” But when he was a junior, a friend said she was going to an open house at Tufts University for students interested in applying. Weathers went with her. He enjoyed it so much that it inspired him to take his SATs. Then he forgot about college for a while.



JUDAH WEATHERS

The next fall, the same girl said she was applying to Northeastern. Weathers decided to apply, too, and thought, “If I get in, it was meant to be.” A few weeks later, his acceptance letter arrived in the mail. He says he still “didn’t quite believe it was going to happen.”

Initially, Weathers lived with his sister in Boston and took business classes at Northeastern. He realized pretty quickly that that wasn’t for him. He signed up for a biology class and “remembered how much I loved it.” From then on, he was on the premed path. “I couldn’t imagine doing anything different,” he says.

During his sophomore year, Weathers happened on the BSCP website through a random search for “research training” and “minority students.” He e-mailed Joan Y. Reede, MD, MPH, MBA, president and chair, and she responded very quickly, inviting him to attend the upcoming New England Science Symposium (NESS). He met several students at the event. The next year, Reede invited Weathers to become a member of the NESS Planning Committee. He helped review abstracts for the symposium, “which was very cool,” he recalls.

The two kept in touch fairly regularly throughout his undergraduate days. Reede introduced Weathers to a neurosurgeon at Harvard Medical School because she knew he was interested in neurosurgery, “which was a really big deal to me,” he says. “I would have never thought of going to a school like Harvard.”

In 2004, she invited him to speak at the Biomedical Science Careers Student Conference about the process of applying to medical school. He also received the first-place Ruth and William Silen, MD, Award for his poster presentation at the NESS that year. He was a panelist at the conference and a speaker at the Evening of Hope fundraiser in 2006, as well. “It blew my mind sometimes how helpful it was to be connected to Dr. Reede,” he says.

Living in England, Weathers was not able to maintain the same level of contact with BSCP that he was used to. That changed after he returned to the U.S. in October 2010. “It’s nice to be back in touch with the organization,” he says. And it’s good to have him back. ■

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SAVE THE DATES

Career Development Series Federal Funding Opportunities Fall 2011

Harvard Medical School

For physicians in postdoctoral training,
junior faculty and fellows (clinical and
research)

Biomedical Science Careers Student Conference

March 30 and 31, 2012

The Westin Hotel Copley Place

For fellows, medical/dental/graduate/
college/community college students,
and high school seniors and juniors

New England Science Symposium

April 1, 2012

Harvard Medical School

For fellows and medical/dental/
graduate/college/community college
students

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2011 Evening of Hope: 20th Anniversary Edition

THE 14TH ANNUAL EVENING OF HOPE FUNDRAISER, CELEBRATING THE 20th anniversary of the Biomedical Science Careers Program (BSCP), will take place on April 28 at The Boston Park Plaza Hotel. This year the event, which raises money for BSCP programs, will also recognize the organization's 20-year history and give guests the opportunity to help pay tribute to its success. The evening's co-chairs will be Mark Fishman, MD, president, Novartis Institutes for BioMedical Research, and Peter Slavin, MD, president, Massachusetts General Hospital.

BSCP will honor its founding organizations, which believed in and supported its mission from the beginning. These include Abt Associates Inc.; Brigham and Women's Hospital; Children's Hospital Boston; Genzyme Corporation; Harvard Medical School; Massachusetts General Hospital; the Massachusetts Medical Society; Mintz, Levin, Cohn, Ferris, Glovsky and Popeo, P.C.; and the New England Board of Higher Education.

The Honorable Governor Deval Patrick, Governor of the Commonwealth of Massachusetts, will be the distinguished 20th Anniversary Evening of Hope honoree. ■