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(RNAi) technology developed at CSHL by Gregory Hannon and his team. The 2011 discovery, which Vakoc has carried forward, revealed a drug target—a protein called BRD4—of unusual potential in the treatment of aggressive forms of leukemia called acute myeloid leukemia (AML). Vakoc discovered that a drug—developed for another purpose by collaborating scientists at the Dana Farber Institute—hit the target, virtually eliminating AML in mouse models. These studies induced a number of pharmaceutical and biotech companies to initiate clinical trials that target AML, some of which are now in Phase II, with positive results already reported from Phase I studies. This is precisely the kind of rapid translation of an important basic scientific result that our new alliance with Northwell Health and its vast clinical system is designed to facilitate. It will enable us to pursue translational science with a vigor we otherwise could not while keeping our basic discovery engine primed.

Two of our faculty are now reaping the rewards of decades of meticulous basic research. Adrian Krainer's research on RNA splicing—which began in the 1990s and grows out of earlier Nobel Prize-winning work by Louise Chow and Richard Roberts at CSHL and by Sue Berget and Phillip Sharp at MIT—has made possible the development of a drug, now in Phase III trials, for the serious

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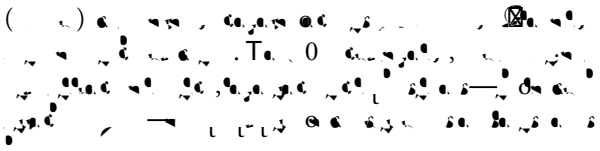

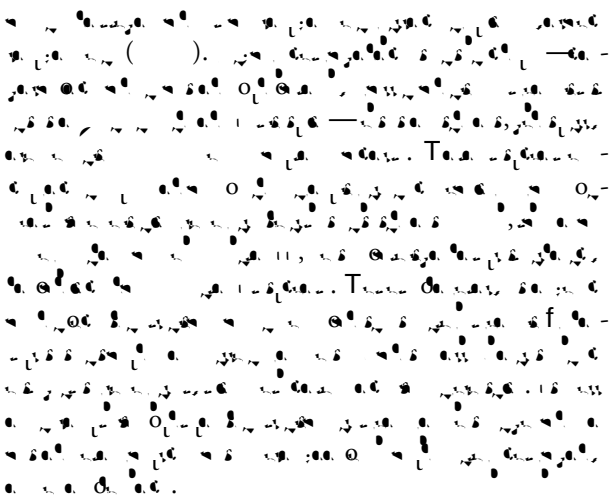

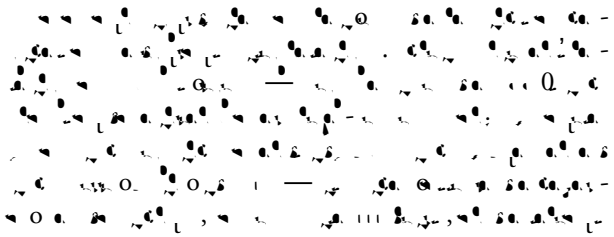

children's disease, spinal muscular atrophy (SMA), Nicholas Tonks' fundamental discovery 25 years ago of the first of what proved a large family of enzymes called protein tyrosine phosphatases (PTPs) was the beginning of a scientific odyssey in which Nick has persisted in the face of doubters in the pharmaceutical industry. Tonks' team has recently demonstrated their ability to target PTP1B—with a drug Nick developed years ago—in cellular signaling pathways that play a key role in HER2-positive breast cancer. Phase 1 trials will begin at Northwell in the spring of 2016. Other PTP1B-targeting compounds in Tonks' lab are being evaluated by a major pharmaceutical firm for treatment of diabetes and obesity. It's another illustration of how basic science can pay off in ways that are not contemplated at the outset. We see similar promise in other fields: for instance, in Zachary Lippman's basic research on the process of branching morphogenesis in plants, which now points to a way of significantly increasing fruit yields; and in