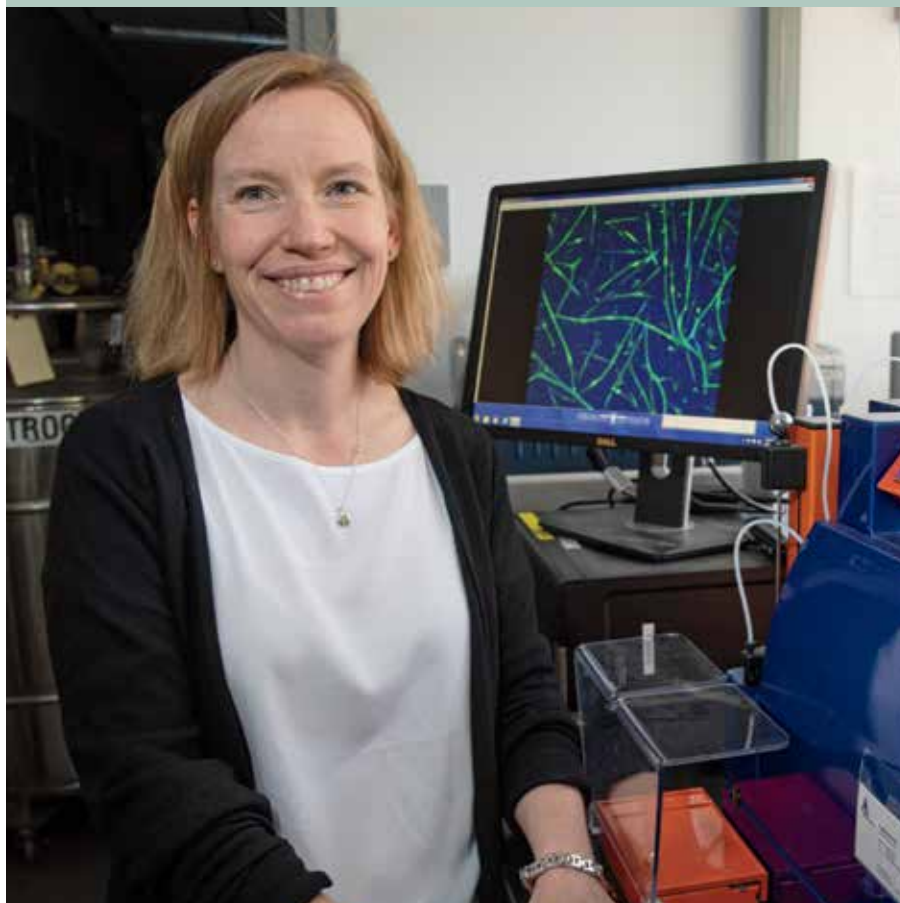


binations—delivered at just the right time, and in the correct concentrations—took 10 years, and was hailed in 2014 as a major scientific breakthrough in the quest for a diabetes treatment.

During the decade of work to advance his science, Harvard's capacity to commercialize scientific discoveries also advanced significantly. In 2005, the University hired Isaac Kohlberg, an M.B.A. with prior experience managing technology commercialization at institutions in the United States and Israel, to lead its Office for Technology Development (OTD). Since his arrival, innovations reported annually to his office by Harvard researchers have risen 60 percent, and licensing revenue has more than doubled, to \$54 million. Last year, the University entered into 51 new licensing agreements, including 21 licenses that went to startups it helped launch. Harvard is now ranked third, behind only Stanford and MIT, on Reuters' list of the world's most innovative universities, a metric that tracks inventions and citations.

Wallace professor of applied physics Federico Capasso, a prolific inventor who was a member of the committee that recommended that Kohlberg be hired, recalls that prior to that decision, "In order to file a patent, you needed to know who to talk to. It was like pulling teeth." Since that time, Kohlberg, as senior associate provost and chief technology development officer, has assembled a team of more than 50 full-time staff that includes experts in business development, corporate alliances, and intellectual property—headquartered in the Smith Campus Center in Cambridge, with an effectively equal presence in the Longwood Medical Area. There is even an OTD team embedded in the Wyss Institute, a biomedical research organization that, over time, hopes to become self-sustaining by commercializing its inventions.

Melton, whose efforts to transform a scientific discovery into a therapy illustrate the challenges of commercialization (and why the expertise of OTD staff is valuable), says that a shift in Harvard's *attitude* toward the private sector has been another critical ingredient in the University's growing success in effecting this kind of "translation." In the 1990s, there was "an unstated view that the commercial world should be separated from scholarly and intellectual activity," he says, but now, "many people, myself included, believe that's not just a false distinction, but the *wrong* distinction—that instead, one of the positions of the University should be



Amy Wagers

As a 10-year-old, Amy Wagers knew she wanted to be a scientist, but it wasn't until she registered as a bone-marrow donor during her senior year at Northwestern University that she decided to focus on stem cells. After receiving her Ph.D. in immunology and microbial pathogenesis from Northwestern, and completing a postdoctoral fellowship at Stanford with Irving Weissmann, one of the earliest pioneers of stem-cell research, she became an associate professor of pathology and investigator at the Harvard-affiliated Joslin Diabetes Center. "I got into aging through the lens of stem-cell regulation," she says. "There's a linkage between the pathophysiology of aging and the pathophysiology of diabetes, particularly type 2 diabetes." In 2008, Wagers moved to the new department of stem cell and regenerative biology, which she now co-chairs. "When I was a postdoc and I was applying for jobs in academia, my dad said, 'When are you going to get out of school?' and I said, 'Well, hopefully never!'" If she isn't working with students in her lab, the Forst Family professor of stem cell and regenerative biology is often found spending time with her six-year-old son, teaching or meeting with undergraduates enrolled in her course on aging—or sky-diving above Newport, Rhode Island. That practice unexpectedly became tradition when Wagers promised a colleague that if the very first paper out of her lab was published by the prestigious journal *Nature*, she would go skydiving to celebrate. "I was so exhilarated! Afterwards, I went to a little clam shack and had a beer and some fried clam strips and I was like, 'I'm alive!'" Now Wagers invites graduate students whose work is accepted by high-impact publications to join her on a skydiving trip. So far, just one has accepted.

—OSET BABÜR