

Sowing Seeds

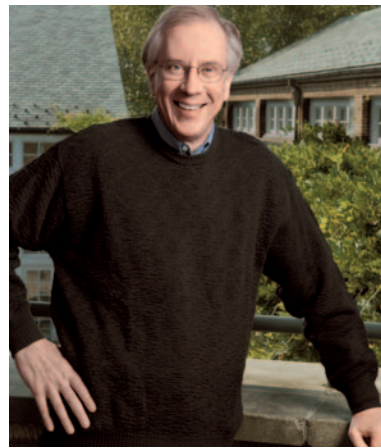
MANY OF US GREW UP HEARING THE STORY OF JOHNNY Appleseed, the mythic New Englander who strode the American wilderness and sowed apple seed as he went. No one really knows what drove Jonathan Chapman into the Ohio territories in the early days of the 19th century, but he traveled ahead of the advancing settlers, clearing land as he went and planting orchards. When the settlers caught up, Chapman sold them the trees on generous terms and the apples they produced sustained many a family.

Johnny Appleseed's life of restless cultivation—one that combined idealism with a certain business practicality—provides an apt metaphor for the way we at the Howard Hughes Medical Institute think about our grant-making activities. Of course, we cultivate a different kind of ground and our orchards produce a different crop. Our hope is to inspire in students a curiosity that prompts them to explore a new world and instill in them the intellectual and technical tools to be successful. Our expectations for repayment also differ from Jonathan Chapman's—he received coins, cast-off clothes, and food; our goal is to sustain students' interests for a lifetime.

This issue of the *HHMI Bulletin* profiles several particularly fruitful initiatives at universities and liberal arts colleges that began with seed funding from HHMI. As Peter Bruns, the vice president for grants and special programs, observes, "We want to plant seeds that will grow into a new and more effective science education." At West Virginia University, for example, Ann L. Chester used modest funding from HHMI to create a winning program. The Health Sciences and Technology Academy began more than a decade ago in a handful of communities. Thanks to Chester's drive and her ability to engage students, parents, other philanthropies, and state legislators, the Academy now extends to 26 counties. Graduates of the program not only make it to college—one of Chester's main goals—but also go on to graduate and medical school.

Other examples abound. Earlier this year, HHMI announced \$86.4 million in new grants for innovative science education programs at 50 research universities in 28 states and the District of Columbia. This is the first funding from HHMI for six institutions, including the University of Florida, which will create a core laboratory for undergraduate research and then collaborate with Atlanta's Morehouse College to establish a teaching postdoctoral fellowship program. Others, like Princeton University, will build on previous HHMI grants to undertake new initiatives. In the next grant period, Princeton will develop a curriculum that better integrates physics and engineering into undergraduate biology, giving students the opportunity to build the microscopes they will use to study genetics and neurobiology.

As with the investments we make in undergraduate education and outreach, HHMI's new program that provides seed funding to a group of physician-scientists is expected to generate outsized



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THOMAS CECH

results. Focus groups of young physician alumni of research training programs run by HHMI revealed that the first few years as a junior faculty member are the most critical. Two challenges that new faculty physicians often cite as reasons for abandoning the research career path are lack of flexible funding to accommodate the needs of a new lab and lack of time to actually do research.

So, we decided to apply some resources to facilitate the transition of these young hopefuls into full-fledged researchers. This year, HHMI inaugurates a new program to jump-start the careers of some of the alumni of the two Institute-funded research fellowship programs. Thirteen physician-scientists who have just begun their tenure-track appointments will receive the first early career awards, which will include a grant of \$150,000 over 3 years for research. One stipulation of the awards is that their institutions will give these individuals the freedom to spend most of their time on research, identifying mechanisms that cause disease and potential new therapies for conditions that include diabetes and cancer.

The discovery of knowledge defines a frontier no less real than the physical frontier that fed the imagination of 19th-century America. Through almost 20 years of grant making, HHMI has had the opportunity to support scientists and educators committed to nurturing the seeds of discovery. It makes for a beautiful orchard, indeed.