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SCIENCE

# Breakthrough Prize Looks to Stars to Shine on Science

By **JOHN MARKOFF** NOV. 9, 2015

MOUNTAIN VIEW, Calif. — Movie stars. Red carpet. Awards.

It's a familiar script. Except that the event here on Sunday night was far from New York and Hollywood, and the boldfaced names were gathered not to celebrate movies or music, but life sciences, physics and mathematics.

The idea behind the Breakthrough Prize is that if scientists are viewed as celebrities — as cool as movie and rock stars — then more young students will aspire to be scientists (and if the cool factor isn't enough, there are \$22 million in prizes handed out each year).

Yuri Milner, a Russian investor, Silicon Valley mogul and theoretical physics dropout, established the prize with Silicon Valley's so-called digerati, including Sergey Brin of Google; Anne Wojcicki of 23andMe; Jack Ma of Alibaba and his wife, Cathy Zhang; and Mark Zuckerberg of Facebook and his wife, Priscilla Chan.

Now in its third year, the awards ceremony has so far only taken baby

steps toward Mr. Milner's dream of a global audience of between 50 and 100 million people. Though it was broadcast live for the first time last night, on the National Geographic cable channel, Mr. Milner acknowledged there was still a ways to go before the Breakthrough Prize has a breakout moment of its own.

"We are at the very beginning of this journey," he said, noting that if you were to look at a list of the top 100 celebrities in American society, there would not be a single scientist on the list.

"The question is why?" he added.

The entire world, including both the United States and Russia, has moved in the wrong direction in the last 50 years in terms of how scientists are perceived, Mr. Milner said. He pointed to scientists like Albert Einstein and Richard Feynman, who once had celebrity status. "We peaked 50 years ago and it has been a downward slope since then," he said.

And so the organizers brought in some star power and glamour to help reverse the slide. Thomas Keller, the American chef who created the French Laundry restaurant in Yountville, Calif., catered the event at NASA's Ames Research Center, in a transparent tent in the shadow of the vast skeleton of the Hanger One airship base.

The award presenters included the actors Russell Crowe and Hilary Swank. Pharrell Williams, the singer, songwriter and producer, performed. The evening was hosted by Seth MacFarlane, the comedian and producer, who played to the tech-centric crowd with riffs about anti-science Republican presidential candidates.

"It is thrilling to be here in the same room as some of the smartest people in the world," Mr. MacFarlane began. "Or as Donald Trump calls you, 'egghead idiots.'"

The event gamely tried to capture the spirit of the Academy Awards, even

if the competitive tension was missing. A glossy video celebrates each prize winner, and the trophies are awarded in each category by Hollywood celebrities paired with Silicon Valley chief executives.

In a sign of the unity the night promoted, the former Silicon Valley power couple of Mr. Brin and Ms. Wojcicki, who are divorced, appeared on stage together to present a Life Sciences award to the British Alzheimer's researcher John Hardy.

During the awards ceremony, a number of the presenters extolled their favorite high school science teacher for inspiring them. To underscore the importance of earlier science education, the Breakthrough Prize this year added a Junior Challenge, as a fourth category. It was won by Ryan Chester, 18, a high school senior from North Royalton, Ohio, for producing a video explaining Einstein's special theory of relativity.

Mr. Chester, however, said in an interview that he was not planning to study science in college, but instead will probably study film, hopefully at a school like the University of Southern California or New York University.

The prize does have a scientific impact, said Jennifer Doudna, a professor of chemistry and molecular cell biology at the University of California, Berkeley, and a prizewinner last year.

"I would say it has an impact on students," she said. "I get regular email from students who are inspired not just by the prize but by the attention it places on science, and that's a wonderful thing."

For his part, Mr. Milner underscored the organic relationship between science and Silicon Valley. Noting that science is always at the root of new technologies, he pointed out that quantum mechanics underlies not just the microelectronics industry, but a large fraction of the entire gross domestic product of the United States.

“It’s all based on pure fundamental discoveries made 100 years ago by people who were not thinking about smartphones,” he said. “They were thinking about fundamental science.”

Other winners this year included two neuroscientists, Karl Deisseroth of Stanford and Edward S. Boyden, of M.I.T. who collaborated on the development of a technique known as optogenetics which permits detailed observations of the activity of neurons in the brain. Helen Hobbs, a cardiology researcher at the University of Texas Southwestern Medical Center, who advanced the understanding of the role of a particular gene in high cholesterol and heart disease, also won a life sciences award. In physics, the prize was given to a community of 1,300 physicists led by seven researchers who have shed new light on the basic structure of subatomic particles known as neutrinos. Ian Agol won a math prize and Svante Paabo, an evolutionary geneticist, won a life sciences award.

“The main element is getting young people interested,” said Arthur B. McDonald, a physicist who leads a team of researchers at the Sudbury Neutrino Observatory in Ontario, Canada. “The idea is that there are still major things to be done.”

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