

# Dr. Robert Langer – world-renowned engineer, medical inventor, and entrepreneur

*Recipient of BioMed SA's 2013 Julio Palmaz Award for Innovation in Healthcare and the Biosciences*



Robert S. Langer, Sc.D.

## **Selection Committee rationale:**

Dr. Langer's stature as a world-famous engineer, medical inventor, and entrepreneur makes him a standout choice for this year's award. He is recognized as the world's most cited engineer and one of history's most prolific medical inventors. He has played a pioneering role in advancing multiple technologies, working at the intersection of academic research and the commercial market with transformational results. Our selection committee was also impressed with his active mentorship of numerous students and aspiring engineers in his lab at the Massachusetts Institute of Technology. – *Dr. Bruce Leslie, 2013 Palmaz Committee Chair*

**Robert S. Langer** is the David H. Koch Institute Professor at the Massachusetts Institute of Technology, where he is one of 11 Institute Professors (highest honor that can be awarded to a faculty member) and runs one of the largest research labs. Dr. Langer has written more than 1,200 articles and is the most cited engineer in history. He also has more than 815 issued and pending patents worldwide. His patents have been licensed or sublicensed to more than 250 pharmaceutical, chemical, biotechnology and medical device companies. He also has founded or co-founded numerous health-related companies, which have commercialized products to treat cancer, heart disease, and many other conditions. He served as a member of the U.S. Food and Drug Administration's SCIENCE Board, the FDA's highest advisory board, from 1995-2002 and as its Chairman from 1999-2002.

Dr. Langer has received over 220 major awards including both the 2006 U.S. National Medal of Science and the 2011 U.S. National Medal of Technology and Innovation, the 2002 Charles Stark Draper Prize (considered the equivalent of the Nobel Prize for engineers), the 2008 Millennium Prize (the world's largest technology prize), the 2012 Priestley Medal (highest award of the American Chemical Society), and the 2013 Wolf Prize in Chemistry. He is the only engineer to receive the Gairdner Foundation International Award; 80 recipients of this award have subsequently received a Nobel Prize. Among his numerous other honors are the Dickson Prize for Science (2002), Heinz Award for Technology, Economy and Employment (2003), the Harvey Prize (2003), the John Fritz Award (2003) (given previously to inventors such as Thomas Edison and Orville Wright), the General Motors Kettering Prize for Cancer Research (2004), the Dan David Prize in Materials Science (2005), the Albany Medical Center Prize in Medicine and Biomedical Research (2005), the largest prize in the U.S. for medical research, induction into the National Inventors Hall of Fame (2006), the Max Planck Research Award (2008), the Prince of Asturias Award for Technical and Scientific Research (2008), the Warren Alpert Foundation Prize (2011) and the Terumo International Prize (2012). In 1998, he received the Lemelson-MIT prize, the world's largest prize for invention for being "one of history's most prolific inventors in medicine."

In 1989, Dr. Langer was elected to the Institute of Medicine, and in 1992 he was elected to both the National Academy of Engineering and the National Academy of Sciences. He is one of the very few people elected to all three U.S. National Academies and the youngest in history (at age 43) to ever receive this distinction. Both *Forbes Magazine* (1999) and *Bio World* (1990) named Dr. Langer one of the 25 most important individuals in biotechnology in the world. *Discover Magazine* (2002) named him one of the 20 most important people in this area. *Forbes Magazine* (2002) selected him as one of 15 innovators worldwide who will reinvent our future. *Time Magazine* and CNN (2001) named Dr. Langer one of the 100 most important people in America and one of the nation's 18 top people in science or medicine (America's Best). *Parade Magazine* (2004) selected him as one of six "heroes whose research may save your life." Dr. Langer received his Bachelor's Degree from Cornell University in 1970 and his Sc.D. from the Massachusetts Institute of Technology in 1974, both in Chemical Engineering. In addition, he has received honorary doctorates from numerous universities throughout the United States and the world.