Robert Langer is one of 12 Institute Professors at the Massachusetts Institute of Technology, the highest honor that can be awarded to a faculty member. He has written nearly 1,500 articles, which have been cited over 300,000 times; Langer's h-index of 271 is the highest of any engineer in history. He has more than 1,350 issued and pending patents worldwide. His patents have been licensed or sublicensed to over 400 companies.

Langer served as chairman of the FDA's Science Board (its highest advisory board) from 1999–2002. His over 220 awards include both the United States National Medal of Science and the United States National Medal of Technology and Innovation (he is one of four living individuals to have received both); the Charles Stark Draper Prize (often called the engineering Nobel Prize); the Albany Medical Center Prize; the Breakthrough Prize in Life Sciences; the Kyoto Prize; the Millennium Technology Prize; the Priestley Medal (highest award of the American Chemical Society); the Gairdner Prize; the Dreyfus Prize in Chemical Sciences; the Maurice Marie-Janot Award and the Lemelson-MIT prize, for being "one of history's most prolific inventors in medicine." He holds 34 honorary doctorates and has been elected to the National Academy of Medicine, the National Academy of Engineering, the National Academy of Sciences and the National Academy of Inventors.

About the speaker

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Abstract

Advanced drug delivery systems are having an enormous impact on human health. The lecture will begin with discussion of early research on developing the first controlled release systems for macromolecules and how they were used to isolate the first angiogenesis inhibitors and how both of these delivery systems and these inhibitors have led to numerous new therapies. This early research then led to new drug delivery technologies, including nanoparticles, that are now being studied for use treating cancer and other diseases.

Second, will be discussion of approaches for synthesizing new biomaterials, such as biodegradable polyanhydrides, and how such materials are used in treating brain cancer and other diseases.

Finally, by combining mammalian cells, including stem cells, with synthetic polymers, new approaches for engineering tissues are being developed that may someday help in various diseases. Examples in the areas of cartilage, skin, blood vessels and diabetes are discussed.

Friday, February 7, 2020
2:15–3:15 p.m., reception to follow
College Avenue Commons (CAVC) auditorium 101
Tempe campus
Register at langer.eventbrite.com