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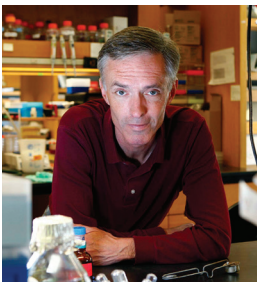
RICHARD SKALAK BIOENGINEERING LECTURE

SYNTHETIC BIOLOGY: LIFE REDESIGNED

Synthetic biology is leading to the development of synthetic gene circuits that can be used to reprogram living cells, endowing them with novel functions.

PRESENTED BY

FRIDAY, MARCH 26, 2021 | 11AM-12PM EDT



James J. Collins, PhD

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Synthetic biology is bringing together engineers, physicists and biologists to model, design and construct biological circuits out of proteins, genes and other bits of DNA, and to use these circuits to rewire and reprogram organisms. These re-engineered organisms are going to change our lives in the coming years, leading to cheaper drugs, rapid diagnostic tests, and synthetic probiotics to treat infections and a range of complex diseases. In this talk, we highlight recent efforts to create synthetic gene networks and programmable cells, and discuss a variety of synthetic biology applications in biotechnology and biomedicine.

Jim Collins is the Termeer Professor of Medical Engineering & Science and Professor of Biological Engineering at MIT, as well as a Member of the Harvard-MIT Health Sciences & Technology Faculty. He is also a Core Founding Faculty member of the Wyss Institute for Biologically Inspired Engineering at Harvard University, and an Institute Member of the Broad Institute of MIT and Harvard. He is one of the founders of the field of synthetic biology, and his research group is currently focused on using synthetic biology to create next-generation diagnostics and therapeutics. Professor Collins' patented technologies have been licensed by over 25 biotech, pharma and medical devices companies, and he has helped to launch a number of companies, including Synlogic (NASDAQ: SYBX). He has received numerous awards and honors, including a Rhodes Scholarship and a MacArthur "Genius" Award, and he is an elected member of all three national academies - the National Academy of Sciences, the National Academy of Engineering, and the National Academy of Medicine.

Skalak Lectures: Richard Skalak (1996); Wilson Greatbatch (1997); Robert Nerem (1997); Steven Goldstein (1997); Larry McIntire (1998); Charles Peskin (1999); Rik Huiskes (1999); Cheng Zhu (2002); Sheldon Weinbaum (2003); Savio Lau-Yuen Woo (2003); Louis J. Soslowsky (2007); Thomas P. Andriacchi (2008); Michael S. Sacks (2008); David L. Butler (2010); Jeffrey A. Hubbell (2011); Subra Suresh (2012); Patrick Prendergast (2014); Cato Laurencin (2017); Susan Margulies (2018); James Collins (2021)