

# The Cambridge Biotechnology Ecosystem: Academic Entrepreneurs, New Technologies, and Building Companies to Treat Rare Diseases

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**Time:** 11:00 -12:30

**Location:** Conference Hall 01/02, G/F, Core Building 1, 1 Science Park East Avenue,  
Hong Kong Science Park

## Abstract

Kendall Square, adjacent to MIT in Cambridge, is the world's epicenter of biotechnology. There are hundreds of biotechnology companies including many start-ups, a dozen of the world's largest pharmaceutical companies, and multiple venture capital firms.

Forty years ago it was an industrial wasteland.

I'll describe the development of this enormous ecosystem based in part on my own experiences in helping start eight local biotechnology companies, including Genzyme and Millennium and more recently Rubius, a Flagship Pioneering company. I will discuss Genzyme's development of enzyme replacement therapies for Gaucher Disease and other lysosome storage diseases. A focus will be on Rubius' first product, a therapy for phenylketonuria (PKU), as well as research on the use of modified red cells to treat autoimmune disorders.

New technologies including gene and nucleic acid therapy and gene editing continue to drive the establishment of new companies. I will review significant fundamentals for developing successful biotech companies, including the importance of geographical proximity of research universities and hospitals with a cluster of laboratory incubators and venture capital firms. I will stress the importance of an entrepreneurial faculty and a top scientific advisory board and board of directors. Having experienced biopharmaceutical leaders is essential, as is proprietary and protected intellectual property and a solid business plan. Additionally, one needs solid financial backing, usually by venture capital but often by patient support groups, as well

## About the Speaker

Dr. Lodish is a Founding Member of the Whitehead Institute for Biomedical Research and Professor of Biology and Professor of Biological Engineering at the Massachusetts Institute of Technology.

He is a Member of the National Academy of Sciences and a Fellow of the American Academy of Arts and Sciences. Dr. Lodish is a member of the Board of Trustees of Boston Children's Hospital, where he is Chair of the Board of Trustees Research Committee. From 2008 to 2016 he was the Founding Chair of the Scientific Advisory Board of the Massachusetts Life Sciences Center, the group charged with oversight of the state's 10- year \$1 billion investment in the life sciences. He was a founder and scientific advisory board member of several companies including Genzyme, Inc., and Millennium Pharmaceuticals, Inc., and has served on the scientific advisory boards of numerous biopharmaceutical companies.

Dr. Lodish is the lead author of the textbook *Molecular Cell Biology*. The eighth edition was published in April 2016; the book has been translated into 12 languages. During 2004 he served as President of the American Society for Cell Biology.