

(Free) Biology Is Technology: The Promise, Peril, and New Business of Engineering Life

Biology Is Technology: The Promise, Peril, and New Business of Engineering Life

Robert H. Carlson

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Robert H. Carlson : Biology Is Technology: The Promise, Peril, and New Business of Engineering Life before purchasing it in order to gauge whether or not it would be worth my time, and all praised Biology Is Technology: The Promise, Peril, and New Business of Engineering Life:

1 of 1 people found the following review helpful. Some of what you want to know about synthetic biology, but not enough. By Lee by the Seal selected this book for a small group that is dipping its toes into synthetic biology--or at

least trying to get its mind around it. It looked good enough, but as we have used it, its defects have become increasingly obvious: It is out of date (lots of economic data from 2006-2008), idiosyncratically written, and badly organized. We had to go to another couple of books and the Internet to get everyone up to speed on the fundamentals of DNA. Although Carlson does give an example of direct modification of DNA and covers the early days of iGEM, there is too much missing and too much soapbox talk. Unfortunately, he is not a lucid writer. With all of that said, the book does cover many relevant topics, such as the biosafety and patent issues that accompany this fascinating field. Carlson attempts to cover the economic aspects but his coverage is sorely dated. I hope that someone else will put it all together for general readers in the near future--hello, iGem graduates with a flair for writing! And when he or she creates the Kindle version, real page numbers and a live index would be very appreciated. 10 of 10 people found the following review helpful. The first of the small-scale biotech company books. By Benjamin J. Hunt Book was review of recent adventures in open-source and small scale biotechnology. If you haven't been reading the scholarly literature on devices and breakthroughs, I can think of no better crash course. From Keasling's entire engineered metabolic pathways to iGEM to Amyris's new fuel producing bacteria, the author has an excellent and informed perspective on the breakthroughs that are worth thinking about. The author also describes in detail the difficult morass of patent and copyright law concerning biotechnology. His description of CAMBIA's "walled garden" is better than any I have read, even in books exclusively about open-source biotechnology. (Although there is currently only one, Biobazaar). His description of garage biotechnology is sparse, mainly due to the above morass, and it would have been nice to have more details on the LavaAmp, this author's most recent work, which is a very cheap, reusable PCR device. This book goes by fast, and is a must read for anyone looking to start or invest in a small biotechnology company, or anyone who wants to do it themselves. 0 of 0 people found the following review helpful. Biotech will change our lives more than computers did - This is a first book to help understand how/why. By F. Schulz Unusually well written, in that it clearly summarizes just-enough but all-you-need of the scientific basis to support the larger discussion. The larger discussion covers a wide range of business, economic and societal impacts as well. The author understands the organizational and group dynamics of very different communities, ranging from government regulators, academics, medical, pharma, and agricultural businesses as well as the rising bio-hacking community. It's very difficult to gist a complex topic like this down to the essentials. Carlson successfully does so over an immense conceptual range ... an impressive feat of communication. At the end of each chapter I thought that the rest couldn't be as good, and was wrong each time. The logical progression was great, leading to clear questions, recommendations and suggestions for the way forward for various stakeholders. My copy is a mass of yellow highlighting and marginal notes. Very well done. Recommended for anyone who was comfortable with any basic science course, especially organizational decision-makers. The text is very accessible and self contained.

Technology is a process and a body of knowledge as much as a collection of artifacts. Biology is no different--and we are just beginning to comprehend the challenges inherent in the next stage of biology as a human technology. It is this critical moment, with its wide-ranging implications, that Robert Carlson considers in *Biology Is Technology*. He offers a uniquely informed perspective on the endeavors that contribute to current progress in this area--the science of biological systems and the technology used to manipulate them. In a number of case studies, Carlson demonstrates that the development of new mathematical, computational, and laboratory tools will facilitate the engineering of biological artifacts--up to and including organisms and ecosystems. Exploring how this will happen, with reference to past technological advances, he explains how objects are constructed virtually, tested using sophisticated mathematical models, and finally constructed in the real world. Such rapid increases in the power, availability, and application of biotechnology raise obvious questions about who gets to use it, and to what end. Carlson's thoughtful analysis offers rare insight into our choices about how to develop biological technologies and how these choices will determine the pace and effectiveness of innovation as a public good. (20100301)

Biology is Technology makes a tremendous contribution to public analysis of a very important emerging field. Although various commentators have discussed particular aspects of synthetic biology (e.g. risk regulation, intellectual property considerations), I am not aware of a book that encapsulates all of the varying strands of the debate. In addition, the book takes a set of provocative and interesting stances on the subjects that it addresses. It is obviously written by someone who has been a longstanding participant in, and commentator on, the field. Although I do not necessarily agree with all of the positions taken by the book, they are well-defended and thought through. (Arti K. Rai, Elvin R. Latty Professor of Law, Duke Law School) Carlson clearly frames a fresh future for biotechnology. Each chapter, from technology trends to property rights and biosecurity conundrums, invites close reading and vibrant discussion. (Drew Endy, Stanford Bioengineering The BioBricks Foundation) Since Rob Carlson is THE authoritative tracker of progress in biotech, this book is the most complete---and exciting---chronicle of the technological revolution that promises to dominate this century. (Stewart Brand, Author of *Whole Earth Discipline: An Ecopragmatist Manifesto*) In this new book, bioengineer Robert H. Carlson forecasts the rise of the cell and the subsequent emergence of biological techniques for making fuels, synthetic DNA that builds new organisms, and

reverse-engineered viruses for making vaccines. Biologists, Carlson says, are the new engineers, and the future is in remodeling life as we know it. (Wired 2010-03-01)[Carlson] presents an informative view of the future prospects for biotechnology and its regulation. (Michael A. Goldman Nature 2010-04-22)Biology Is Technology is essential reading for anyone who wishes to understand the current state of biotechnology and the opportunities and dangers it may create. (Alex Soojung-Kim Pang American Scientist 2010-11-01)A thoughtful attempt to put what we think we know about biotechnology into a larger context, by a physicist-turned-bioentrepreneur. (The Economist 2010-12-04)About the AuthorRobert H. Carlson is a Principal at Biodesic LLC.