Record Nr. UNINA9910298348003321 Autore Porcar Manuel **Titolo** Synthetic Biology: From iGEM to the Artificial Cell // by Manuel Porcar, Juli Peretó Dordrecht:,: Springer Netherlands:,: Imprint: Springer,, 2014 Pubbl/distr/stampa **ISBN** 94-017-9382-4 Edizione [1st ed. 2014.] Descrizione fisica 1 online resource (86 p.) Collana SpringerBriefs in Biochemistry and Molecular Biology, , 2211-9353;; 12 174.957 Disciplina Soggetti Medicine Microbial genetics Microbial genomics Genetic engineering Entomology Computer simulation Biomedicine, general Microbial Genetics and Genomics Genetic Engineering Simulation and Modeling Lingua di pubblicazione Inglese **Formato** Materiale a stampa Livello bibliografico Monografia Note generali Description based upon print version of record. Nota di bibliografia Includes bibliographical references and indexes. Foreword by Michel Morange -- Preface -- 1 What is synthetic biology? Nota di contenuto -- 2 What was synthetic biology? -- 3 What is life? -- 4 Strategies for making life -- 5 Synthetic biology in action -- 6 The iGEM competition -- 7 Are we doing synthetic biology? Postface by Ricard Solé --Onomastic index -- Subject index. Sommario/riassunto Synthetic Biology (SB) is a revolutionary discipline with a vast range of practical applications, but is SB research really based on engineering principles? Does it contributing to the artificial synthesis of life or does it utilise approaches sufficiently advanced to fall outside the scope of biotechnology or metabolic engineering? This volume reviews the development of SB and includes the major milestones of the discipline.

the 'top-down' and 'bottom-up' approaches towards the construction of an artificial cell and the development of the "iGEM" competition. We

conclude that SB is an emerging field with extraordinary technological potential, but that most research projects actually are an extension of metabolic engineering since the complexity of living organisms, their tight dependence on evolution and our limited knowledge of the interactions between the molecules, actually make life difficult to engineer.