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Lior Pachter*, California Institute of Technology, Pasadena, CA. *A Mathematical Introduction to the Molecular Biology of the Cell.*

Since the beginning of molecular biology in the 1930s, there has been great interest in developing mathematical models of the workings of the cell. During the past 50 years the molecular components of the cell have increasingly come into view, and during the past decade high-throughput sequencing based technologies have provided the opportunity to measure cell states in unprecedented resolution. Together, these developments have resulted in increasingly accurate mathematical models of the molecular biology of the cell. These promise to not only enhance our understanding of gene regulation, but also to allow for the prediction of the effect of perturbations in disease states. The current challenges for mathematics are exciting, and I will review the necessary background needed to engage in the field. (Received May 31, 2018)