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Understanding the composition of cells and how cells work is fundamental to all of the biological sciences. Appreciating the similarities and differences between cell types is particularly important to the fields of molecular cell biology. These fundamental similarities and differences provide a unifying theme, allowing the principles learned from studying one cell type to be extrapolated and generalized to other cell types. Research in cell biology is closely related to genetics, biochemistry, molecular biology and developmental biology.

1.1.2 Cell biology is always developing

All the concepts of cell biology continue to be derived from computational experiments and laboratory experiments. The powerful experimental tools that allow the study of living cells and organisms at higher and higher levels are being developed constantly. In this chapter, we address the current state of cell biology and look forward to what further exploration will uncover in the twenty-first century.