Recent developments and future prospects in low-energy nuclear theory[1]

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Fueled by a rapidly growing landscape of accessible nuclei at existing and upcoming radioactive ion beam facilities, by advances in the modeling and observation of astrophysical processes, and by precision tests of fundamental symmetries, a comprehensive theory that describes quantitatively and predictively nuclei and their interactions is on the horizon. Much of this progress is being achieved through the development of new approaches in low-energy nuclear theory, enhanced by continuous innovations in high-performance computing, machine-learning techniques and, more recently, quantum computing. In this talk, I will provide an overview of recent developments and future directions in theoretical aspects of nuclear structure and astrophysics.