Record Nr. UNINA9910739484803321 Autore Wells James D Titolo Discovery Beyond the Standard Model of Elementary Particle Physics [[electronic resource] /] / by James D. Wells Pubbl/distr/stampa Cham:,: Springer International Publishing:,: Imprint: Springer,, 2020 **ISBN** 3-030-38204-4 Edizione [1st ed. 2020.] Descrizione fisica 1 online resource (78 pages) Collana SpringerBriefs in Physics, , 2191-5423 539.721 Disciplina Soggetti Elementary particles (Physics) Quantum field theory Cosmology **Physics** String theory Elementary Particles, Quantum Field Theory History and Philosophical Foundations of Physics Quantum Field Theories, String Theory Lingua di pubblicazione Inglese **Formato** Materiale a stampa Livello bibliografico Monografia Introduction -- The theory canon -- Confirmation discoveries --Nota di contenuto Exclusion discoveries -- Revolutionary discoveries -- Signalism: risks of pursuing discovery without BSM context -- Gravity waves & Higgs boson discoveries through the BSM lens -- European strategy update -- When does discovery end? -- Summary. Sommario/riassunto The goal of this essay is to discuss the future of discovery in particle physics. Its primary motivation is the 2019 European Strategy update, which aims to determine the future experimental and theoretical priorities for particle physics. A key question is to understand what the standard theory (Standard Model) of particle physics really is, which the author argues has been a foggy notion for several decades which he clarifies. It then is to decide what motivated beyond the Standard Model theories are to be targeted by experiment. This book brightly exposes these theories, and puts current particle physics research into its

historical context and points the way toward future work.