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Feynman's Footprints: Quantum Field Theory in Nuclear and Particle Physics[1]

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Feynman is well known for his path integral approach, his diagrams, and his "deviations from the beaten path." These are just three of his many gifts to us that continue to inspire new generations of scientists.

Feynman was motivated to discover methods that both illuminate underlying truths as well as pragmatically yield correct predictions. Today such methods are called effective field theories (EFTs). In nuclear and particle physics alone these are now understood to encompass Feynman's work in QED and the V-A theory, for example; the standard model of QED, QCD, and electroweak theories; to physics beyond the standard model. Feynman's legacy is seen in current efforts to unite EFTs and numerical calculations, and in the collection of dedicated EFTs created to understand focused phenemona from low energy parity violation in weak interactions to high energy collisions in QCD, to pushing the boundaries of the standard model (SM) in "SMEFT."

Any scientist can contribute to our understanding of the physical world by emulating some of what Feynman brought to his projects: high enthusiasm, hard work, strict integrity, constant curiosity, deep focus, constructive skepticism, scrupulous attention to detail, and joy in the process of discovery.

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