

Letter of Intent for Snowmass2021: CEF4 Physics Education Topical Group

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Study of Particle Physics Preparation for Physics Students

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Abstract:

Successful training of research scientists requires significant preparation in particle physics at the graduate level. To engage students early, strong undergraduate course development emphasizing particle physics would be advantageous. This study will survey and assess the current state of particle physics preparation at the undergraduate and graduate levels with the aim of strengthening the overall teaching of the subject across R1 institutions and USIs.

Content:

Among the facets of this proposed study:

1. Study and assessment of particle physics at the undergraduate level.
 - a. Are there high-quality textbooks available?
 - b. Forming a repository of lectures and accompanying course materials that could be shared across colleges and universities.
2. Survey and assessment of particle physics at the graduate level.
 - a. Are there high-quality textbooks available?
 - b. Forming a repository of lectures and accompanying course materials that could be shared across colleges and universities.
 - c. Are there new models of summer schools and training that would improve upon current instructional methodologies?