Contribution ID: **101** Type: **not specified**

Towards Future Discoveries at the Energy Frontier

Collider physics is rich, diverse and versatile, and offers amazing opportunities for advancing our understanding of fundamental physics and for discoveries at the Energy Frontier. Over the last several decades, colliders have played a central role in experimental establishment of the Standard Model. Since the discovery of the Higgs boson, the science drivers at the energy frontier have been study the Higgs boson in great detail and precision, and use it as a new tool for discovery, search and identify the new physics of dark matter, and explore the unknown: new particles, interactions and physical principles.In particular probing new physics particles in the mass range of ~10 TeV remains one of the highest priorities for the field.

The US should continue strong participation in global Energy Frontier efforts.A collider with energy reach significantly higher than LHC is of great interest, but e+e- Higgs factory is also very critical for deeper understanding of the SM. Several current proposals (ILC, CEPC, CLIC, FCC, MCC,etc) present the idea of hosting the next facilities in Europe or Asia. Strong physics motivation coupled with unique expertise, make it natural for US scientists to play a leading role in the next major Energy Frontier facilities, regardless of where in the world they are hosted.

Primary frontier topic

Energy Frontier

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Session Classification: Community Town Hall