

# Back to Big Questions



- Snowmass is a chance to gauge the physics interests of the community and identify the most promising research opportunities.
  - A '10 year plan with a 20 year vision'.
- Ultimately driven by big questions ('science drivers')
  - Flows down to experiments, facilities, programs, etc...
  - Historically lead to establishment of "frontiers"
- Naturally, intra-frontier communication is most efficient and scientists become most fluent within adjacent fields
  - Anecdotally, this seems especially true for EC scientists

# Back to Big Questions



- While Snowmass must focus on a 10-20 year plan, I advocate that SEC embrace an even longer view
- Motivating prompt to the EC particle physics community:
  - What fundamental questions would you most like to answer over the course of your physics career?
  - Implies a  $\sim 40$ -year time scale
- Snowmass 2020 EC scientists will be the main drivers of this research program; are we equipped to answer this?
  - Big questions cross boundaries — being an expert in "your field" will not be enough!

# Education talks as an answer



- Propose a series of colloquia to share perspectives
  - Implies that the top priority would be to identify a list of motivating questions/topics.
- Example outline:
  - **Topic:** Higgs / Understand nature of EWSB
  - **Introduce the Big Q.** (Consistent w/ SM? Lone higgs?)
  - **What we know now; want to know?** (Width, BSM portal)
  - **Ideal experiments to probe.** (Energy, lumi, beams?)
  - **Necessary technology** (Magnets, silicon, electronics,...)
  - **What is the roadmap to realize this program?**
    - Stepping-stone measurements? Tech demonstrators?

# Main items for discussion



- **How many seminars?** (A list of topics will help us here)
- **Audience?** EC-focus but open to all. Colloquium-level.
- **Venue?**
  - **Standalone zoom series?**
    - Minimal org. Difficulty attracting attendees, speakers?
  - **Co-organize w/ other like-minded series?**
    - 'Automatic' attendance. Still reach a broad audience?
  - **Connect to SN events?** (CPM, April APS, Summer mtg)
    - Sensible time-scale? Enough time for all talks?
  - **A completely standalone workshop?** (e.g. 2 half-days)
    - Could combine w/ full-SEC workshop if interest.



# Other assorted considerations

- Some natural connections to survey effort:
  - What physics are SEC scientists interested in?
  - Could benefit from coordinating timescales.
- If we don't go for a workshop-style event, what is the right duration and frequency?
- In general, how can we take advantage of the existing SN structure while still "allowing ourselves to forget" frontiers, facilities, past and ongoing experiments for the purpose of the seminars?
  - Is there a list of big questions already identified?