$0\nu\beta\beta$ Beyond Next Generation

- Boundary Conditions:
  - Next-generation "ton-scale" program
    - ☞ One major US-led experiment in North America
    - ☞ Partnership in one (or more) international projects
    - ☞ $200-300M, under NP leadership
    - ☞ Sensitivity to Inverted Hierarchy: ~10 meV in $m_{\beta\beta}$ and 10^{27}-10^{28} years half-life
  - Snowmass-21 should explore next-next generation program
    - ☞ Aim for least x10 increase in sensitivity to either determine the LNV mechanism or push into Normal Hierarchy region
- Postulate: proposals for >$1B single-purpose DBD experiments are DOA
  - E.g. 10t of ^{76}Ge >~ $1B, 100t of ^{136}Xe >~ $2B

Need to think outside the standard box

- Multi-purpose detectors: broaden science reach, form multi-agency, international partnerships
  - Bolometers: DBD+DM+CEvNS/$\mu\nu$ (sources, beams). QIS angle in R&D
    - ☞ Look for international and domestic partnerships
  - LXe: DBD+DM+solar ν ?
    - ☞ Talk with DARWIN. Partner with NEXT in case of discovery ?
  - Very large (Wb)LS detector with natural isotope deployment (Theia, KLZ@SuperK ?)
    - ☞ Rich ν physics, non-proliferation angle. May justify O($1B) investment
- CPM should focus on exploring synergies, e.g. Cosmic, Instrumentation frontiers