

- What are the potential, major discoveries on a 20 year timeframe?

Responses:

- Be ambitious on 20 year timescale - need to plan a long way ahead for the largest facilities. What are next steps beyond current targets? Near term discoveries might lead to new horizons. E.g. DBD for NH and/or Majorana phases for IH.
  - Quantum sensors have a lot of interest and potential for completely new ideas. Lots of opportunities for developments and funding over the next 20 years.
  - What tech advances might lead to serendipitous discoveries. Roadmap should consider this.
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- Astro connections with compact object observations. E.g. GW EHT tie in with more conventional astro.
  - 20 years includes major new GW facilities (e.g. LISA). Learning about the neutron star equation of state - connection with e.g. NP.
  - Can new technologies help with GW, e.g. at high frequencies for GW? Quantum technologies? Squeezed light, atom interferometry
  - GW has huge potential for serendipitous discovery, e.g. GW from SN, axion clouds
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- DM - within the next 20 years will get to neutrino floor for WIMPs. Do we want to go beyond that? If so how (e.g. directional detectors)?
  - Previously synergy between collider, direct DM, indirect DM. Future - field is fragmenting in absence of e.g. collider evidence. Need to have a good steer from theory to focus next steps targeting different candidates.

- What must we do now to ensure the UK has a leading role in them?

Responses:

- Roadmapping exercise is really important. Needs to be science driven, and then fund early-stage R&D to ensure we are well positioned. We should back winners. Can't fund everything so need to focus.
- Skills need to be a key focus to ensure have trained people and skillsets to deliver and lead long-term programme.
- Mustn't get locked into long term tracks that do not allow us to change direction on 5-10 year timescale. Breadth of field important.
- Establishing a DM experiment at Boulby would be a fantastic opportunity for UK leadership.