

# welcome to the

## **FUTURE COLLIDERS SEMINAR SERIES**

To take place on a ~monthly basis, on Tuesday at 11am

Next seminar: May 2

### **Organizers:**

- M. Aleksa (FCC PED Coordination Board)
- J. List (ILC Exec Board)
- M. Mangano (FCC Coord Board)
- D. Schulte (Study Leader, International Muon Collider Collaboration IMCC)
- S. Stapnes (ILC Exec Board and chair of IMCC steering board)
- F. Zimmermann (FCC deputy leader)

# Context: ESPP 2020 Update

- “An electron-positron Higgs factory is the highest-priority next collider”
- “Europe, together with its international partners, should investigate the technical and financial feasibility of a future hadron collider at CERN with a centre-of-mass energy of at least 100 TeV and with an electron-positron Higgs and electroweak factory as a possible first stage. “
- “[...] the accelerator R&D roadmap could contain:
  - the R&D for an effective breakthrough in plasma acceleration schemes (with laser and/or driving beams), as a fundamental step toward future linear colliders, possibly through intermediate achievements: e.g. building plasma-based free-electron lasers (FEL). Developments for compact facilities with a wide variety of applications, in medicine, photonics, etc., compatible with university capacities and small and medium-sized laboratories are promising;
  - an international design study for a muon collider, as it represents a unique opportunity to achieve a multi- TeV energy domain beyond the reach of  $e^+e^-$  colliders, and potentially within a more compact circular tunnel than for a hadron collider. The biggest challenge remains to produce an intense beam of cooled muons, but novel ideas are being explored; “