Why support theory

This is a point of view of an experimentalist of searches / exotica persuasion (working vacation to help discover the higgs notwithstanding)

(dark sectors, hidden valleys, quirks, stealth SUSY, extra dimensions, “regular” SUSY...)

Working closely with theorists changes the way an experimentalist thinks

not all the places where we look for signal get published – there’s a lot of overhead, especially if the motivation seems crazy

But it’s important that people look in unlikely places

Having theory postdocs across the corridor from your office can make all the difference in the world
Why support theory

- LHC has been a tremendous investment and is an awesome tool for investigating EWK scale
  - Now that we have discovered a fundamental scalar field the necessity for the full exploration of it and explanation of the low mass of the Higgs is paramount
- The “convenient” SUSY that solves fine-tuning, DM, and grand unification did not show up yet
  - A lot of NP that solves naturalness problem looks very different
- It takes a lot of resources and grunt work to understand where the blind spots in searches are
  - And if the NP events make it on tape at all!
  - LHC rejects most of the collisions – if the events are not triggered, they are gone
  - Development of dedicated triggers has long lead time
- There’s been a lot of progress in making the theory-experiment ties closer since Run I of the Tevatron, but more effort is needed here
  - and reducing the number of students / postdocs is moving in the wrong direction