

# **EF02: Bureaucracy & Exhortation**

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June 12, 2020

# Today's Meeting

- Apologies for the time shift, EFo9 decided to lengthen their meetings so we had an unavoidable conflict - all future meetings: EFo9 11 am, EFo2 1 pm.
- Energy Frontier Summer workshop: July 9-10 **NOW July 20-22**

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- Energy Frontier Summer workshop: July 9-10 **NOW July 20-22**

Thanks HEPAP...

# **There is a silver lining...**

**Agenda is being rethought for virtual setup to accommodate time zones and childcare!**

- **Please email us if you'd like to give a parallel session talk on anything Higgs and BSM related!**
- **There will be an asynchronous pre-conference parallel session with a synchronous parallel discussion section**
- **Let us know ASAP**



# Today

First in our series of Higgs friends...



Higgs,  $2\text{HDM}$ , Singlet,  $2\text{HDM}+\text{Singlet}$ , Triplet, and beyond...

# One of many topics we suggested

How to organize coverage?

Flavor

EWPT

Higgs Friends (singlet, 2HDM, more)

Naturalness

Higgs Potential

Signal based?

Exotic Decays

Higgs Portal

What else?

**Please suggest others, or email us about potential talks at future bi-weekly meetings!**

**Next Meeting June 26, 2020 1-3 pm EDT:  
BSM and triple Higgs couplings, quartic coupling,  
quintic coupling or more???**

**EWPT, singlets, doublets, whatever relates and you want to talk about email us!**



# **Exhortation**

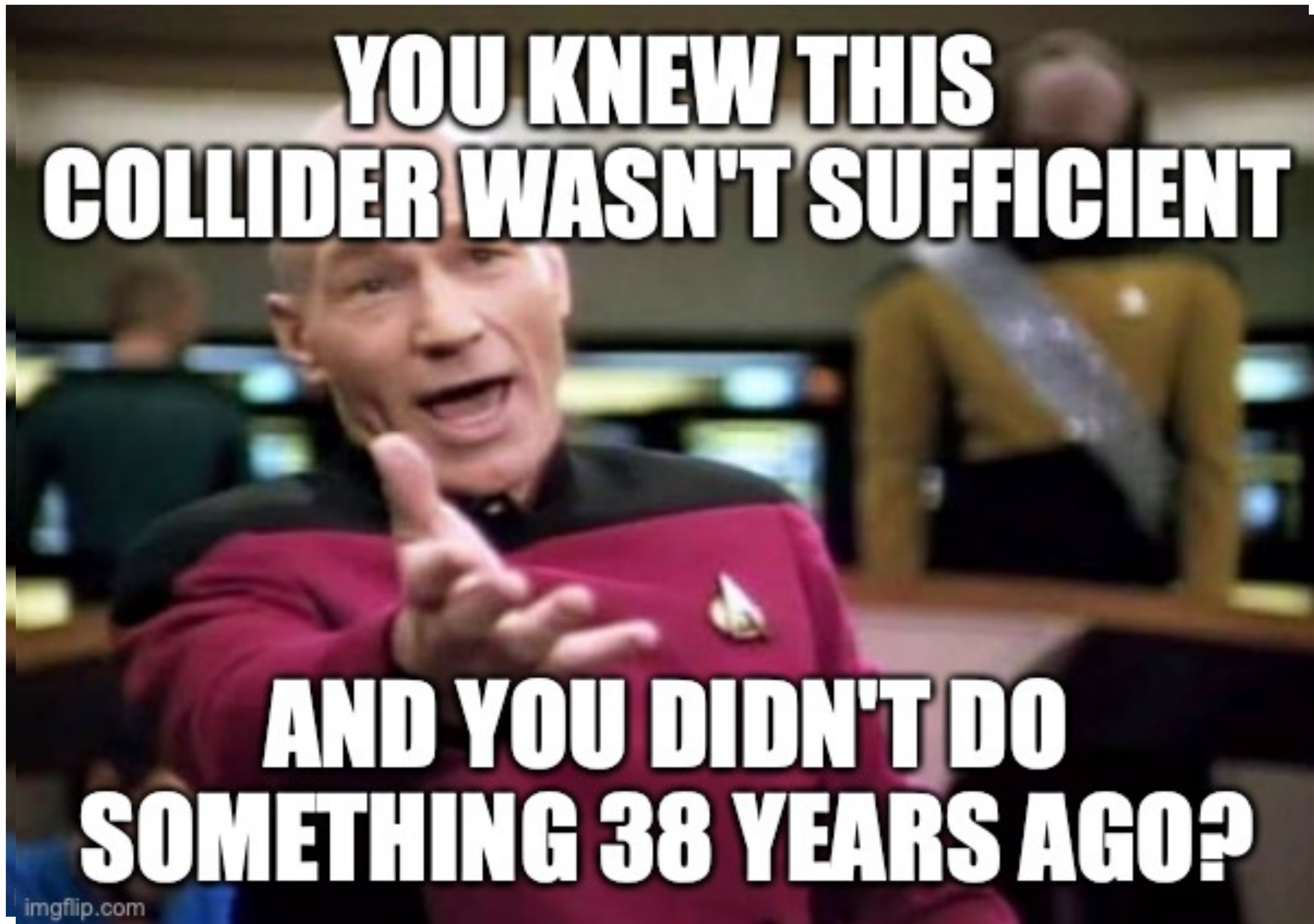


**PRETTY PLEASE...**

[makeameme.org](http://makeameme.org)

**In thinking about any of these topics...  
don't *just* think about potential holes in  
studies for ILC, CEPC, SPPC, FCC-ee/  
hh, CLIC**





**#Snowmass1982 #Snowmass2058**

# **What COULD be done?**

**Regardless of proposed experiments thus far...**



# Let Physics benchmarks also lead the way to experiments



# It's not only us... yesterday at EF08 Meeting

Composite Higgs and the 10-50 TeV mass scale

This is beyond the limit of any current accelerator technology. It takes decades to develop new accelerator technologies, so we need to start thinking about this today.

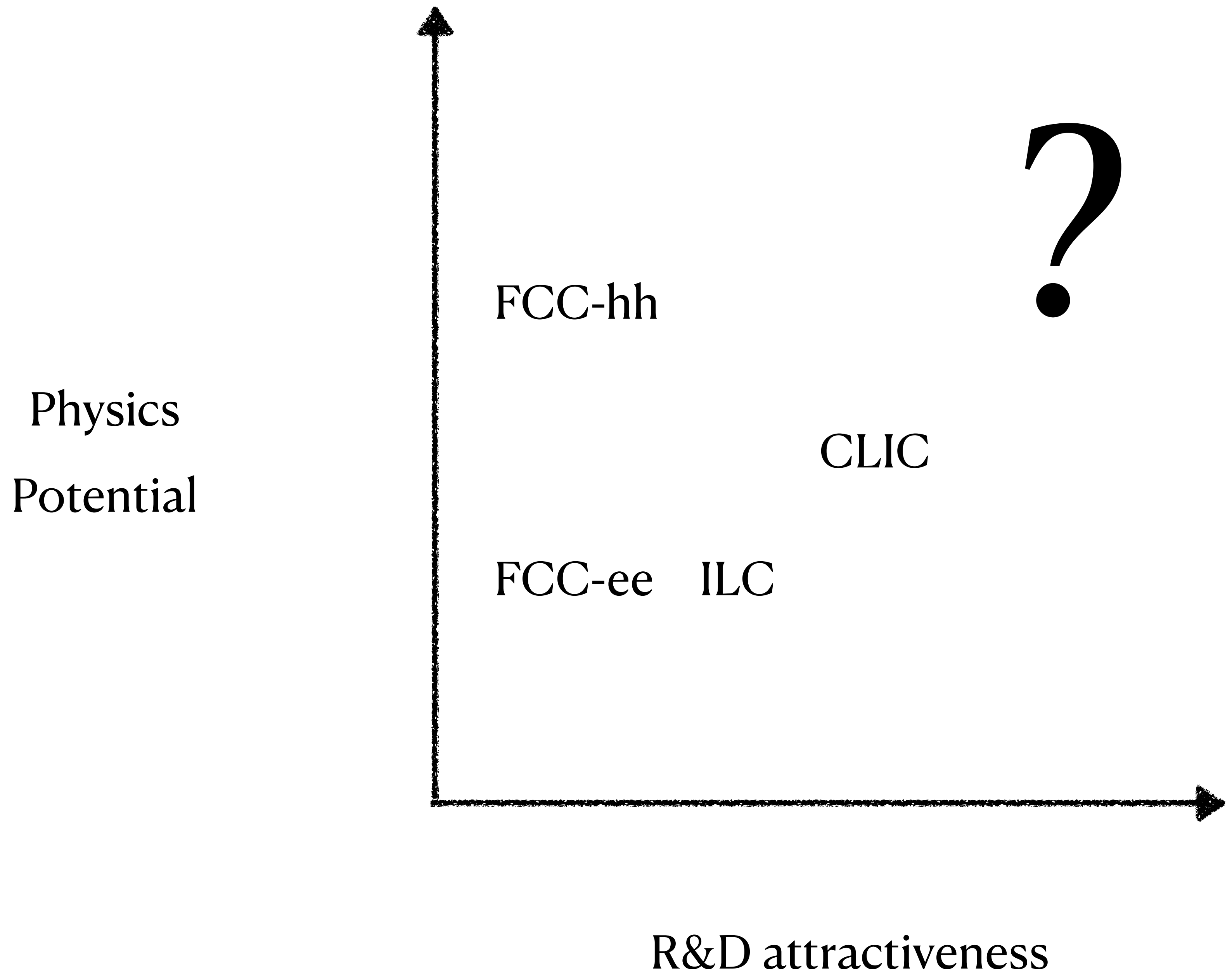
Michael Peskin



# **Snowmass is about the physics**



**We'll have plenty of time later to decide what is optimal and what dimensions to optimize on... (or P5 to tell us)**





This is totally subjective at this point,  
Like a Zoltan plot for  
Flavor physics anomalies...

Physics  
Potential

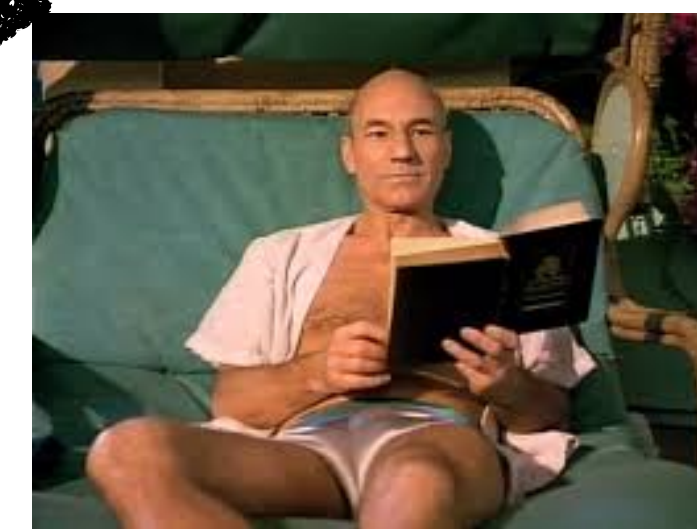
FCC-hh

CLIC

FCC-ee ILC



R&D attractiveness







**But what else is out there?**

**And why should we think about it?**

Physics  
Potential

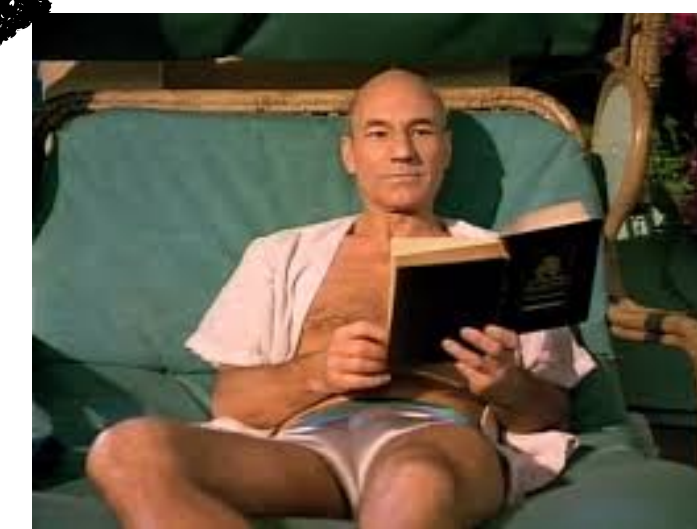
FCC-hh

CLIC

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R&D attractiveness





Physics  
Potential

FCC-hh

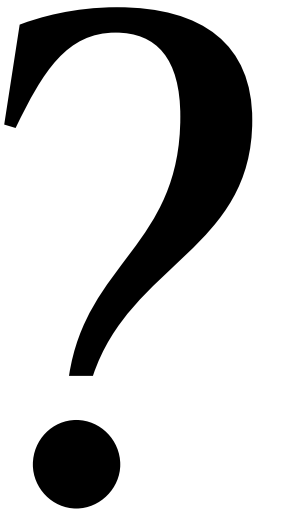
e-collider 25 TeV  
 $\mu$ -collider 30 TeV

$\mu$ -collider 14 TeV

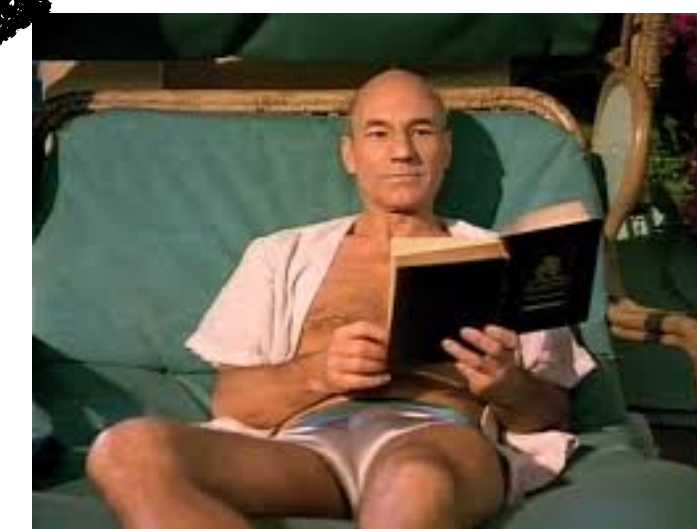
CLIC

FCC-ee ILC

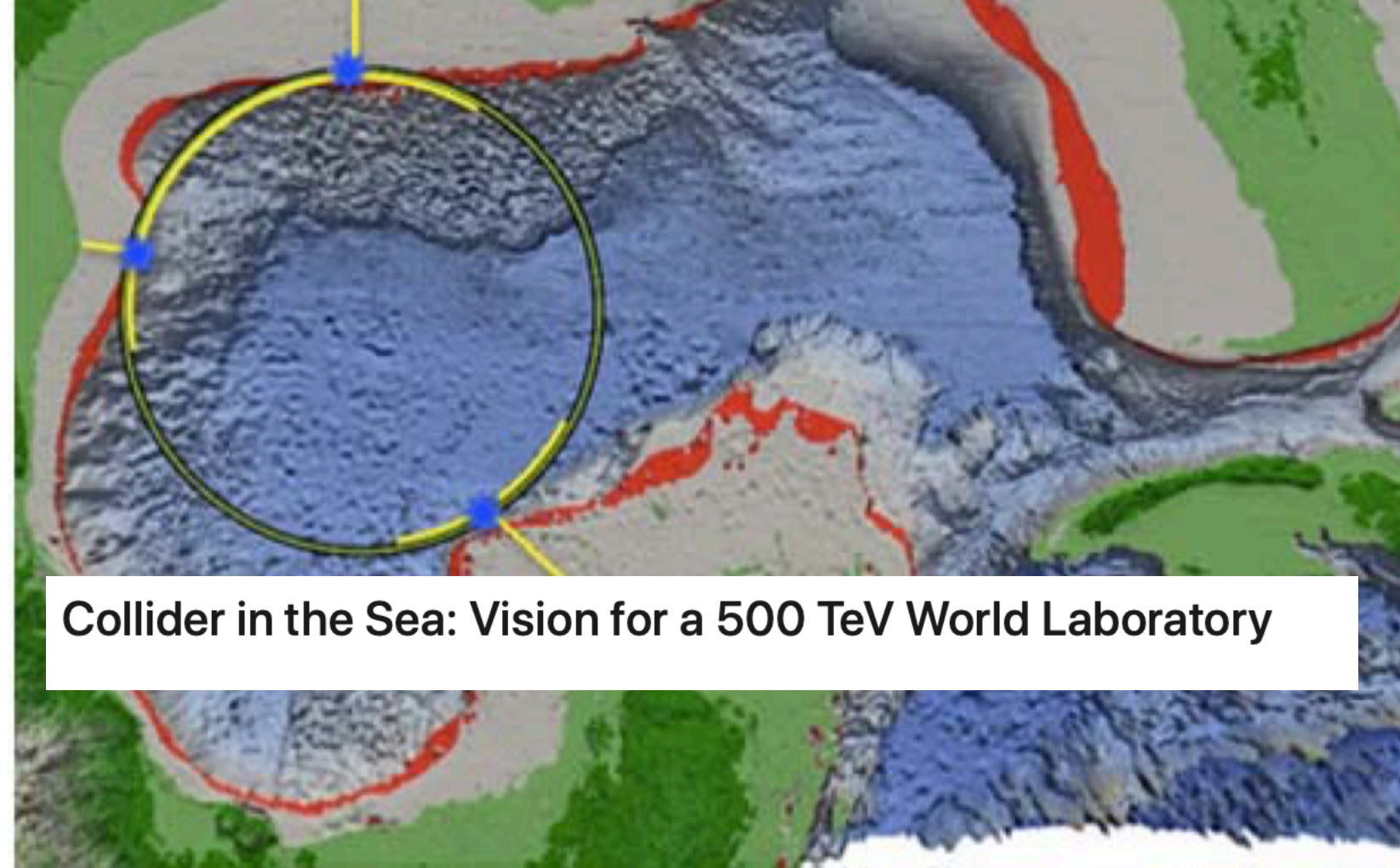
$\mu$ -collider 125



R&D attractiveness







25 TeV  
TeV



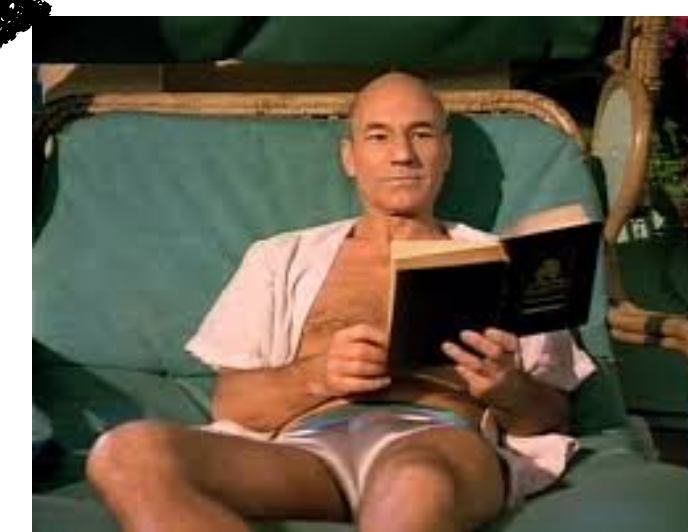
FC Figure 2: Bathymetry of the Gulf of Mexico, showing potential alignment of a 1,900 km circumference hadron collider. **Red** = 100 → 200 m isobaths; gray = 0-100 m isobaths; **blue** = detectors; **green** = surface topography.

Physics  
Potential

FCC-ee    ILC     $\mu$ -collider 125



R&D attractiveness



# **We'll talk about this more in the coming weeks**

- Please give it some thought - ee,mumu,pp at other energies!
- Need benchmark ideas to see how things fit with other ideas and topical groups e.g Dark Matter, Naturalness as well as Accelerator Frontier interactions!
- Last but not least what do we need for MC?????
- MC for crazy ideas and Snowmass ideas you were already kicking around (so give feedback ASAP, Isobel is the EF liaison to MC task force)