# The LPC and the Rutgers CMS group: a University group's perspective

LPC Turns Ten
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# The University Perspective

- University groups have greatly benefited from the LPC
  - **I will give several examples from the Rutgers group**

- We are:
  - Six experimental faculty
  - One theorist faculty
  - Several post-docs, graduate students and undergraduate students

- Generally, we have at least one student or postdoc based at LPC, depending on activities. Others (primarily faculty) generally coming and going.

# The LPC and University Groups

- The LPC is a regional physics center for CMS that is easy to get to from anywhere in the US
- It has a core of expertise in many areas (physics, hardware, computing/software) that allows university group members who are mostly working remotely to contribute and to collaborate.
- It also is at a major US laboratory, so it allows for multitasking.
- For example, in the early days of the LPC (e.g. 2004-2008) one could combine Tevatron and CMS work
  - something that several of us in Rutgers group took tremendous advantage of, as did many university groups
- Now one combines CMS hardware and analysis work
  - Example: Tote Hughes (student of JP Chou) was based at LPC for past year to work on HCAL
  - In the future, we expect more of this as we get more involved in phase 2 upgrades

# Learning

- The LPC is continuously organizing and planning ways to reach out to and educate the community on a variety of topics (physics, tools, hardware) in many different ways:
  - **Physics Forum, Topic of the Week, workshops, tutorials, etc.**

- One of the most successful examples is the CMSDAS, which first started at the LPC
  - Several of us in Rutgers group have participated in this since the beginning (e.g. jet and photon exercises)
  - Excellent opportunities as well for students and postdocs to not only learn, but to also teach
    - e.g. student Rishi Patel and postdoc Dan Duggan have not only helped develop and but also taught these exercises

# Leadership

- The LPC provides and facilitates leadership opportunities
- Most successful example is the **LPC Distinguished Researcher / Fellowship Program**
  - e.g. JP Chou, Yuri Gershtein and Eva Halkiadakis
- Personal experience (*similar for JP/EXO):
  - Allowed me to spend time at CERN and at LPC while SUSY convener during a critical period for CMS
  - Large SUSY community based at LPC and fellowship facilitated interactions
  - Several junior fellows/DRs in SUSY group as well, and CMS is benefiting overall. Also organized productive SUSY workshops/discussions at LPC crucial for analysis and publication planning.

# Collaborations

- The LPC inherently results in an environment for collaborations.
- Our group has greatly benefited from the expertise based at the LPC.
  - e.g. most recently we have been interacting and collaborating with boosted jet substructure experts (Fermilab, Buffalo) and trigger experts (Boston).
  - Many other examples (e.g. jets, photons, HCAL, computing/ software)
- Also, naturally results in collaborations for analyses and publications:
  - e.g. a personal example: 7TeV paired di-jet analysis with Fermilab and Iowa colleagues PRL 110, 141802 (2013)
  - Again, many other examples, and expect this to continue.

# Connections and Recruitment

- The LPC provides many opportunities for connections, such as:
  - Faculty can recruit future students or postdocs
  - Students may meet their future advisors
    - Example: PhD student Alejandro Gomez Espinosa is now working with me as a result of meeting at the CMSDAS
  - Postdocs may connect with future faculty colleagues
    - Example: JP Chou encouraged to apply for faculty position while working together in a CMSDAS session.

# Summary

- The LPC has had and to continues to have a great impact on university groups, and visa-versa.

- I can summarize this in these key areas:
  - Learning
  - Leadership
  - Collaborations
  - Connections

- Happy 10th Birthday LPC!  And many more!