

*Welcome to Pitt PACC!*



*Pittsburgh Particle Physics, Astrophysics,  
and Cosmology Center (Pitt PACC)*



- Mission: Enhance research activities for these fields, facilitate and strengthen theory/experiment collaborations, promote local and national research to the community;
- Host topical workshops (e.g. Good  $\nu$ 's), larger conferences and schools (Pheno Symposia), visitor program (e.g., sabbatical), public lectures;
- You can join Pitt PACC - consider becoming an associate member!
- Receive announcements for our activities (workshops, seminars, etc.), organize a workshop, free Pheno registration, ...

# Good $\nu$ 's: Neutrino Physics at a Muon Collider

We have gathered neutrino, collider and machine experts:

- To explore unique opportunities that the muon collider offers in answering key neutrino-related questions;
- To identify questions that cannot be addressed by current or near-future experiments;
- To assess the need for a dedicated neutrino detector.
- The discussions and outcomes of the workshop will be concluded in a white paper;
- The white paper will summarize the key findings, possible neutrino-related measurements, and design considerations for the collider, including the potential for incorporating a neutrino factory;



# Good $\nu$ 's: Neutrino Physics at a Muon Collider

Gathering ideas in google doc during the workshop. You're all welcome to join!

<https://indico.global/event/15552/>



## Workshop Goals & Scope:

The workshop will bring together experts in neutrino physics and high-energy colliders to explore the unique opportunities that a high-energy muon collider offers in answering key neutrino-related questions. The primary focus will be identifying questions that cannot be addressed by current or near-future experiments, with an emphasis on exploring new physics through neutrino interactions at such a collider.

The workshop will involve contributions from both neutrino and collider physicists as well as machine experts, who will collaborate to assess the need for a dedicated neutrino detector and investigate how high-energy neutrinos from muon decay could help address broader questions in the main detector. The discussions and outcomes of the workshop will be concluded in a white paper. The white paper will summarize the key findings, possible neutrino-related measurements, and design considerations for the collider, including the potential for incorporating a neutrino factory. This workshop, which will be first in this topic, will serve as a hub for the community, fostering collaborations that could shape the future of neutrino studies at high-energy muon colliders.

***Google Doc: [Here](#)***

**Dates:** Oct 27th -29th, 2025 (Mon. - Wed.)



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## *Logistics:*

- Wi-Fi: network: MarriottBonvoy
- Zoom connection:  
<https://pitt.zoom.us/j/92790117507> (passcode: 105658)
- Breakfast everyday, at 8:30 am
- Lunch everyday on your own in Oakland neighborhood — see information in folder and link on indico page for dining options
- Workshop banquet on Tuesday evening at Allegheny Observatory.
  - A shuttle to the Observatory will depart at 6:00pm from the hotel.
  - If you have dietary restrictions, please email Joni George (jog126@pitt.edu)

# Good $\nu$ 's: Neutrino Physics at a Muon Collider

Starting Noon ET!

## Seminar Series for the National Lab Muon Accelerator Study Group

Monday Oct 27, 2025, 11:00 AM → 1:00 PM US/Central

- |          |            |   |       |
|----------|------------|---|-------|
| 11:00 AM | → 11:15 AM | <b>Welcome and Introduction</b>                               | 🕒 15m |
|          |            | Speakers: Sergo Jindariani (FNAL), Stephen Gourlay (Fermilab) |       |
| 11:15 AM | → 11:45 AM | <b>Overview of the Machine design and challenges</b>          | 🕒 30m |
|          |            | Speaker: Mark Palmer (BNL)                                    |       |
| 11:45 AM | → 12:15 PM | <b>Q&amp;A</b>  | 🕒 30m |

# Good $\nu$ 's: Neutrino Physics at a Muon Collider

*Thanks to my co-organizers!*

- Kun Cheng, Tao Han, Tova Holmes, Samuel Homiller, Patrick Huber, Donna Naples;
- And special thanks to Joni George for handling all of the logistical organization!



*We hope you enjoy the workshop and your visit to Pittsburgh!*