



# SBN-Theory Mini-Workshop



**SBN can be a multi-purpose physics program, and now seems the time to push it**

## **What is our focus?**

On possible explanations of the MiniBooNE anomaly: excellent opportunity, goal to aim for  
How can we probe these models? Which kinematics and topologies should we look for?  
What can we improve in the EXP side to better probe them? Are we missing any  
backgrounds?

**SBN can be a multi-purpose physics program, and now seems the time to push it**

## Keys to success

Promote a nice, friendly, light atmosphere —this is why we are going informal  
Connect the **EXP** and **TH** communities to get the most out of our neutrino program  
This workshop should be useful for us: *there are no right or wrong questions!*

It would be great if we can identify tasks that will help our program  
and people who would be willing to work on them

# Welcome everyone!

Comments, questions and suggestions: email Andrzej, Mark, Minerba, myself, or all of us  
We also have a [Slack channel](#) and the agenda is in [indico](#)

## Monday

- 08:55** → 09:00 **Introduction**  
Speaker: Pedro Machado (Fermilab)
- 09:00** → 09:30 **MiniBooNE anomaly**  
Speaker: Kevin Kelly (CERN)
- 09:30** → 10:30 **Alternative models for the MiniBooNE LEE**  
Speakers: Asli Abdullahi (Durham U.), Carlos Argueta
- 10:30** → 11:00 **Break** ☯
- 11:00** → 12:00 **Discussion**  
Speakers: Animesh Chatterjee (Pittsburgh U.), Mark

## Tuesday

- 09:00** → 10:00 **EM showers**  
Speakers: Andrzej Szelc (Univ)
- 10:00** → 10:30 **Proton reconstruction**  
Speakers: Andy Furmanski (F)
- 10:30** → 11:00 **Break**
- 11:00** → 12:00 **Discussion**  
Speakers: Matheus Hostert (F)

## Wednesday

- 09:00** → 09:30 **Lessons learned from BSM searches in LArTPCs**  
Speakers: Patrick Green (The University of Manchester), Pawel
- 09:30** → 10:30 **Tools for BSM searches**  
Speakers: Joshua Berger (Colorado State U.), Joshua Isaac
- 10:30** → 11:00 **Break**
- 11:00** → 12:00 **Discussion**  
Speakers: Noemi Rocco (Fermilab), Pawel Guzowski (The)

\*Time = Chicago time

# Welcome everyone!

If this mini-workshop works well, we could do it more regularly

I am planning to organize a conference on these topics when Fermilab re-opens\*, so

(1) we will have a venue to get PhDs/postdocs/ to present their work to the community

(2) if you are here, it means you are interested and engaged: your participation is key and your feedback is appreciated

*\*hopefully before the end of the universe*