

# Physics WG Structure

Ryan Patterson and Elizabeth Worcester

DUNE Collaboration Call

November 8, 2019

# TDR and 2019 WG Updates

- **TDR Physics Volume: A major achievement**
  - Represents an enormous amount of work over the past few years.
  - Everyone involved should feel proud of the product!
  - Individual physics chapters are being packaged up as journal articles.
  
- **With the TDR heading out the door, it's a suitable time for annual updates to the WG organization**
  - Have historically targeted Autumn each year for this.
  - This year there are some slight structural changes in addition to the typical number of personnel rotations.

# Physics WGs (Old)

## Physics Coordination

Ryan Patterson  
Elizabeth Worcester

## FD Sim/Reco

Chris Backhouse  
Lorena Escudero  
Alex Himmel

## Long Baseline

Dan Cherdack  
Chris Marshall  
Mayly Sanchez

## ProtoDUNE Analysis

George Christodoulou  
Tingjun Yang

## SNB / Low Energy

Alex Friedland  
Inés Gil-Botella  
Kate Scholberg

## NDK / High Energy

Lisa Koerner  
Vitaly Kudryavstev  
Greg Pawloski

Plus:

## ***Calibration Task Force***

Sowjanya Gollapinni  
Kendall Mahn

## ND Physics

Mike Kordosky  
Steve Manly

## BSM/Pheno

Alex Sousa  
Jae Yu

# Changelog

- Creation of **LBL/NDDG Liaison** position
  - Charged with coordinating the LBL-related analysis work happening within the extensive NDDG structure
- “**ND Physics**” becomes “ **$\nu$  Interactions & SM**”
  - Refer to the science mission rather than a detector in the group’s name. (The ND is highly relevant for *several* Physics WGs.)
- “**SNB/Low-E**” becomes “**Low Energy**”  
“**NDK/High-E**” becomes “**High Energy**”
  - The physics scopes of these two groups are broad. Reflect that in their names.
  - The scopes in practice are roughly:
    - **Low energy WG**: physics with neutrino sources in the <50 MeV range
    - **High energy WG**: a much broader set of sources and signatures, typically >50 MeV. Includes ongoing BNV and atmospheric neutrino analyses plus astrophysics and BSM searches that involve full sim/reco and can naturally share tools with other analyses in the group

# Changelog

- Creation of **Calibration WG**; Ending of **Calibration Task Force**
  - Paves the way for longer-term analysis work within Physics on calibration topics.
  - The Task Force has long completed its intended scope of work.
- “**BSM**” becomes “**BSM/Pheno**”
  - A name that better reflects the work in the group
- Addition of **dual-phase-oriented** convener(s) to **ProtoDUNE Analysis WG**
  - Reflects the current stage of operations and data analysis with ProtoDUNE-DP.
  - The SP and DP analysis work will initially continue in parallel tracks, but increased sharing of tools and personnel resources is critical moving forward.

# Physics WGs (New)

## Physics Coordination

Ryan Patterson  
Elizabeth Worcester

## FD Sim/Reco

Chris Backhouse  
Alex Himmel  
Leigh Whitehead

## Long Baseline

Chris Marshall  
Mayly Sanchez  
Callum Wilkinson

## LBL/NDDG Liaison

Dan Cherdack

## Low Energy

Alex Friedland  
Inés Gil-Botella  
Kate Scholberg

## High Energy

Lisa Koerner  
Vitaly Kudryavstev  
Yun-Tse Tsai

## BSM/Pheno

Alex Sousa  
Jae Yu

## $\nu$ Interactions & SM

Mike Kordosky  
Steve Manly  
Cheryl Patrick

## Calibration

David Caratelli  
Mike Mooney

## ProtoDUNE Analysis

George Christodoulou  
Tingjun Yang  
*TBD*

# Physics WGs (New)

## Physics Coordination

Ryan Patterson  
Elizabeth Worcester

## FD Sim/Reco

Chris Backhouse  
Alex Himmel  
Leigh Whitehead

## Long Baseline

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Callum Wilkinson

## LBL/NDDG Liaison

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Kate Scholberg

## High Energy

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Yun-Tse Tsai

## BSM/Pheno

Alex Sousa  
Jae Yu

## $\nu$ Interactions & SM

Mike Kordosky  
Steve Manly  
Cheryl Patrick

## Calibration

David Caratelli  
Mike Mooney

## ProtoDUNE Analysis

George Christodoulou  
Tingjun Yang  
TBD

# Physics WGs (New)

## Physics Coordination

Ryan Patterson  
Elizabeth Worcester

## FD S

Chris  
Alex  
Leigh



## Long E

Chris  
Mayly  
Callum



## LBL/NDDG Liaison

Dan Cherdack

## Low Energy

Alex Friedland  
Inés Gil-Botella  
Kate Scholberg

## High En

Lisa Koe  
Vitaly Kudry  
Yun-Tse



## BSM/Pheno

Alex Sousa  
Jae Yu

## $\nu$ Interacti

Mike K  
Steve  
Cheryl



## Calibration



## ProtoDUNE Analysis

George Christodoulou  
Tingjun Yang  
*TBD*



# A hearty thanks...

- ...to all the Physics conveners departing, continuing, or joining
  - **Roughly 1/3<sup>rd</sup> changeover:** a balance of continuity vs. new perspectives and opportunities
  - And an extra thanks to Lorena Escudero, Sowjanya Gollapinni, Kendall Mahn, Greg Pawloski for leading their respective groups so effectively during this very busy and productive time.