

Snowmass 2021

Rare and Precision Frontier

R. Bernstein (FNAL) for co-conveners,
Marina Artuso (Syracuse) and Alexey Petrov (Wayne State)

What is the Rare and Precision Frontier About?



- Everyone is interested in rare processes and precise measurements
- This frontier is (speaking as an experimenter) all about focus:
 - experiments designed around specific goals
 - of course this is fuzzy: DM at general purpose experiments, LHCb CKM to antigravity, but we share that quality of targeted studies

Cast Of Characters



Marina Artuso (Syracuse U.)



Alexey Petrov (Wayne State U.)



Bob Bernstein (FNAL)

Topical Group		Topical Group co-Conveners	
RF01	Weak Decays of b and c	Angelo di Canto/BNL	Stefan /Arizona
RF02	Strange and Light Quarks	Emilie Passemar/Indiana	Evgueni Goudovski/Manchester
RF03	Fundamental Physics and Small Experiments	Tom Blum/UConn	Peter Winter/ANL
RF04	Baryon and Lepton Number Violation	Pavel Fileviez Perez/CWRU	Andrea Pocar/Amherst
RF05	Charged Lepton Flavor Violation	Sacha Davidson/Lyon	Bertrand Echenard/Caltech
RF06	Dark Sector at High Intensities	Stefania Gori/UCSB	Mike Williams/MIT
RF07	Hadron Spectroscopy	Richard Lebed/Arizona	Tomasz Skwarnicki/Syracuse

+ slack channels, mailing lists, ...

Frontier Calendar: <https://snowmass21.org/rare/start>

Liaison System

- We talk with other Frontiers and to you
 - EF: Angelo di Canto
 - Neutrino, Accelerator: RHB
 - Theory: Alexey Petrov
 - Community Engagement: Sophie Middleton
 - Cosmic: Susan Gardner
 - Computational: Stefan Meinel



A few Big Issues in RPF

- PIP-II at FNAL: CLFV in Muons? EDMs? CP?
 - Accelerator-based High Intensity DM experiments?
 - BLV experiments outside of proton decay? e.g. $n\bar{n}$
 - Lepton Universality in B decays? LHCb anomalies
-
- Bring ideas!! this is about ***you*** making ***your*** future happen

What Can You Do To Get Involved?

- *Learn:*
 - Skim/attend some topical group meetings
 - Check out (SUBMIT!) LOIs:
 - contact authors, add your name, and we'll reload the LOI
- *Communicate:*
 - Emails, Slack, etc.: snowmass21.org, Slack workspace
 - Contact one of us and we'll help
- *Participate:*
 - [get involved now at the beginning, and you'll have more influence](#)

Links, etc

- Indico for meetings:
 - <https://indico.fnal.gov/category/1102/>
- LOI's:
 - <https://snowmass21.org/rare/start>
- Contact:
 - rhbob@fnal.gov or use information at snowmass21.org