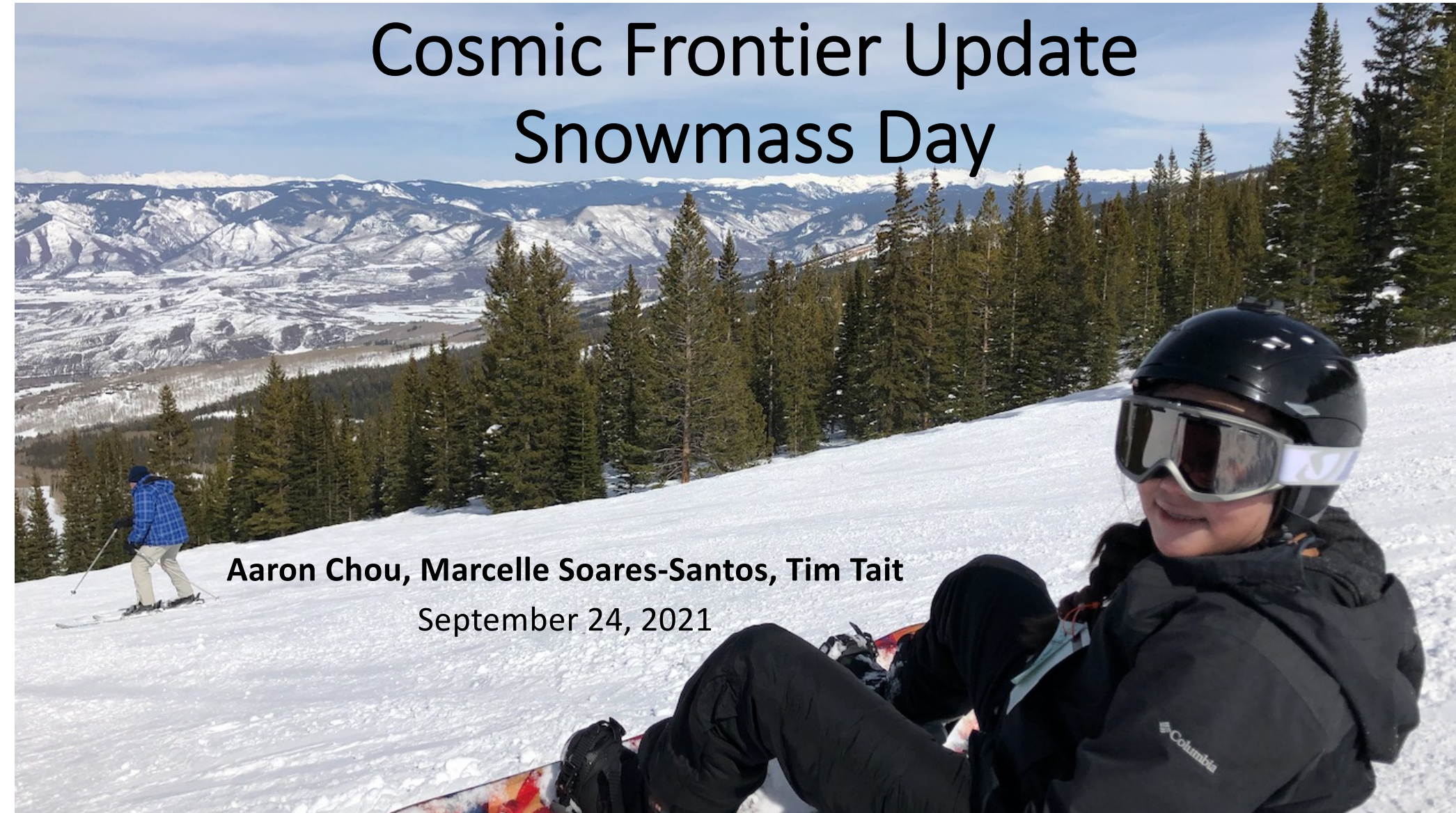


Cosmic Frontier Update Snowmass Day

Aaron Chou, Marcelle Soares-Santos, Tim Tait

September 24, 2021



Cosmic Frontier topical groups and conveners

- **CF1. Dark Matter: Particle-like**
 - Jodi Cooley (SMU), Hugh Lippincott (UCSB), Tracy Slatyer (MIT), **Tien-Tien Yu (U.Oregon)**
 - #cf01-dark_matter_particle
- **CF2. Dark Matter: Wave-like**
 - Joerg Jaeckel (Heidelberg), Gray Rybka (UW), Lindley Winslow (MIT)
 - #cf02-dark_matter_wave
- **CF3. Dark Matter: Cosmic Probes**
 - Alex Drlica-Wagner (Fermilab), Chanda Prescod-Weinstein (UNH), Haibo Yu (UCR)
 - #cf03-dark_matter_cosmic
- **CF4. Dark Energy and Cosmic Acceleration: The Modern Universe**
 - **Jim Annis (Fermilab)**, Jeffrey Newman (Pittsburgh), Anže Slosar (BNL)
 - #cf04-dark_energy_modern
- **CF5. Dark Energy and Cosmic Acceleration: Cosmic Dawn and Before**
 - Clarence Chang (ANL), Laura Newburgh (Yale), Deirdre Shoemaker (Georgia Tech)
 - #cf05-dark_energy_dawn
- **CF6. Dark Energy and Cosmic Acceleration: Complementarity of Probes and New Facilities**
 - Chihway Chang (Chicago), Brenna Flaugher (Fermilab), David Schlegel (LBNL)
 - #cf06-dark_energy_comp
- **CF7. Cosmic Probes of Fundamental Physics**
 - Rana Adhikari (Caltech), Luis Anchordoqui (CUNY), Ke Fang (UW-Madison), B.S. Sathyaprakash (Penn State), Kirsten Tollefson (MSU)
 - #cf07-cosmic_probes



Blue = new conveners

<https://snowmass21.org/cosmic/start>

Slack signup instructions at bottom of
<https://snowmass21.org>

Goal of Snowmass: Produce a well-articulated report telling a compelling science story

- Related LOI's have been consolidated into solicited "community white papers"
 - List can be found on CF wiki page along with names of coordinators/captains
 - Multiple slack channels to facilitate communications
- Independent, "contributed white papers" also encouraged.
 - Please make topical conveners aware of your plans.
 - Engage early and provide executive summaries. Conveners will not necessarily have time to study all white papers in detail.
 - Suggested template can be found on CF wiki page
- These white papers will serve as **references** for the Snowmass report. The key ideas contained within will feed into the topical group and frontier summary reports.



Examples of planned community white papers

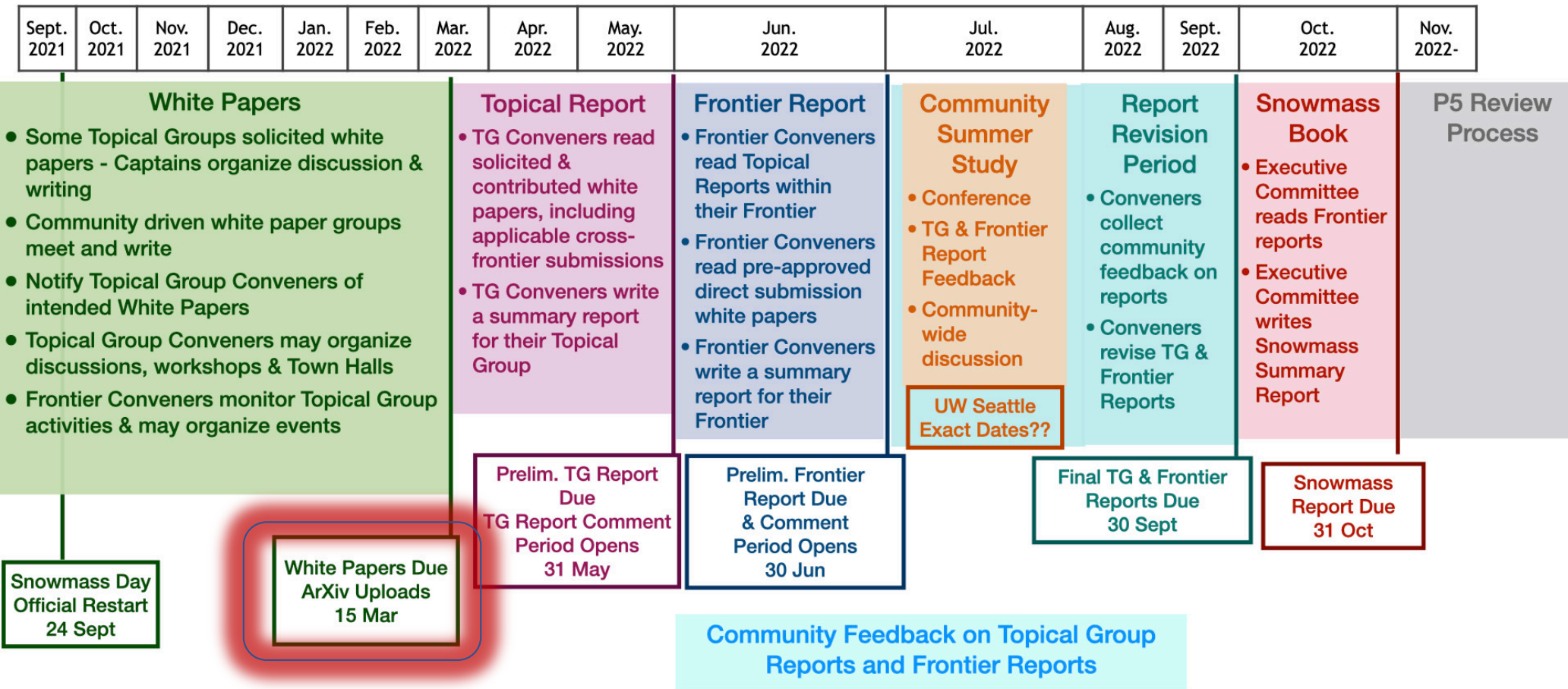
(Random selection)

- **CF01— The landscape of low-threshold detection in the next decade**
- **CF02— Quantum Technologies and Novel Materials for Wave-Like Dark Matter**
- **CF03—Dark matter physics from halo measurements**
- **CF04,5—(Cosmology with) Large number of linear modes**
- **CF04,5—Enabling flagship experiments to reach their potential**
- **CF06— Importance/power of joint analysis for “transient” science**
- **CF07— Multimessenger facilities and experiments**
-



- Check the CF wiki to make sure we did not miss anything.
 - Community white paper topics will likely be highlighted in the report.
- Contact the white paper coordinators in order to participate in the study.
- **If you have had new ideas, try to figure out where they fit in, and engage!**

Post-Break Snowmass Timeline



CF afternoon breakout session (single zoom room)

13:00 Each TG: 10 minute status report + 10 minutes comment/feedback.
Will stay on schedule so that people from other groups/frontiers may join discussion.

| | | | |
|-------|---|----------------------------------|---------------|
| | CF2. Dark Matter: Wave-like | <i>Gray Rybka et al.</i> | 13:30 - 13:50 |
| 14:00 | CF3. Dark Matter: Cosmic Probes | <i>Alex Drlica-Wagner et al.</i> | 13:50 - 14:10 |
| | CF4. Dark Energy and Cosmic Acceleration: the Modern Universe | <i>Anze Slosar et al.</i> | 14:10 - 14:30 |
| | CF7. Cosmic Probes of Fundamental Physics | <i>Sathya Bangalore</i> | 14:30 - 14:50 |
| 15:00 | CF1. Dark Matter: Particle-like | <i>Hugh Lippincott et al.</i> | 14:50 - 15:10 |
| | CF5. Dark Energy and Cosmic Acceleration: Cosmic Dawn and Before | <i>Clarence Chang et al.</i> | 15:10 - 15:30 |
| | CF6. Dark Energy and Cosmic Acceleration: Complementarity of Probes and New Facilities | <i>David Schlegel</i> | 15:30 - 15:50 |
| 16:00 | Cosmic - Computing frontier discussion | <i>Steven Gottlieb</i> | 15:50 - 16:10 |