

Snowmass 2021: Update

Meeting with All Frontier Conveners
July 27, 2020

Young-Kee Kim
University of Chicago

Agenda

- (10') Report from CPM Local Organizing Comm.
 - Bo & Brendan

Name	Institution	Role
Jonathan Asaadi	U. Texas, Arlington	
Sapta Bhattacharya	Northwestern University	
Zoltan Gecse	Fermilab	
Shih-Chieh Hsu	U. Washington, Seattle	Co-chair, CSS 2021
Bo Jayatilaka	Fermilab	Co-chair, CPM 2020
Brendan Kiburg	Fermilab	Co-chair, CPM 2020
Erica Snider	Fermilab	
Tiziana Spina	Fermilab	
Gordon Watts	U. Washington, Seattle	Co-chair, CSS 2021
Yuanyuan Zhang	Fermilab	

- (20') Snowmass Update
 - Young-Kee
- (30') Frontier goals at CPM
 - Round table


Snowmass

- Goals
 - To define the most important questions for the field of particle physics
 - To identify promising opportunities to address them
- Do & Do-Not
 - Do: Address the questions the particle physics community wishes to answer over the next two decades and how we plan to answer them
 - Do-Not: Prioritize activities (this is the goal of the P5)
- The Snowmass process could include
 - Develop a framework of scientific questions that can form the basis of a future program
 - Survey experiments, facilities, and capabilities that would address these questions

Update on Topical Groups

- EF-RF: RF7 (Hadron Spectroscopy) has been added, strongly connected to EF06
- NF-TF: NF08 (Neutrino Theory) moved to TF11

Neutrino Frontier		Theory Frontier	
NF01	Neutrino Oscillations	TF01	String theory, quantum gravity, black holes
NF02	Sterile Neutrinos	TF02	Effective field theory techniques
NF03	BSM	TF03	CFT and formal QFT
NF04	Neutrino from natural sources	TF04	Scattering amplitudes
NF05	Neutrino properties	TF05	Lattice gauge theory
NF06	Neutrino Interaction Cross Sections	TF06	Theory techniques for precision physics
NF07	Applications	TF07	Collider phenomenology
NF08	Theory of Neutrino Physics	TF08	BSM model building
NF09	Artificial Neutrino Sources	TF09	Astro-particle physics & cosmology
NF10	Neutrino Detectors	TF10	Quantum Information Science
		TF11	Theory of neutrino physics



- Early Careers : Liaisons to Frontier Groups. Please include them in your meetings with topical group conveners (Update from Sara Simon)

Monthly Newsletter & Slack Channels

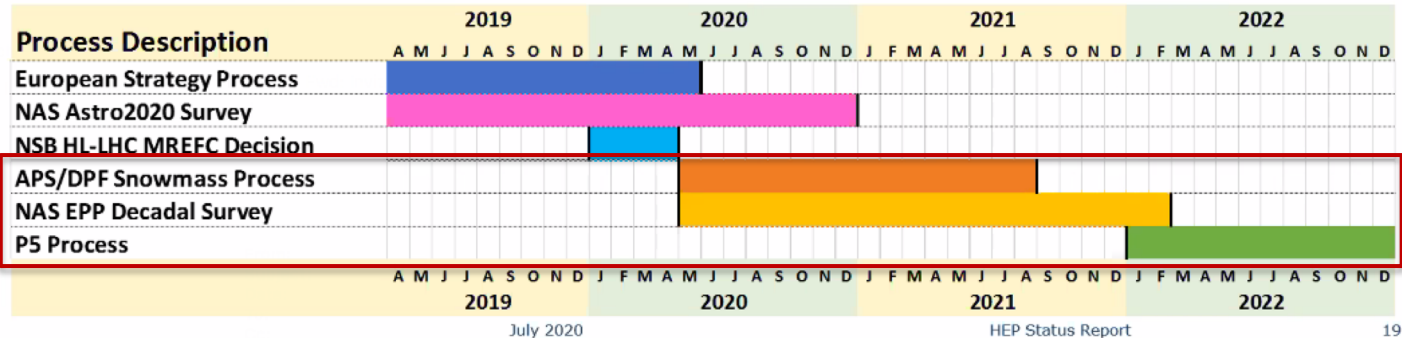
- August Newsletter
 - Please add your section by this Thursday (July 30)
 - <https://docs.google.com/document/d/16UmWY2UR6ZKNv0l-KHVyeBgZUPTUv3ZVIf65VSX4ihs/edit>
- Slack Channels
 - The free trial period is over (many thanks to Bob B.)
 - We need to start paying from today
 - 1 year fee from 7/27/2020 to 7/26/2021
 - \$14,400
 - Paid by U.Chicago

Timeline

Jim Siegrist's presentation (2020-07-09)

Strategic Planning Timeline

- ▶ To provide timely input to the FY25 budget formulation, the next P5 report will be required by March 2023
- ▶ U.S. Community Snowmass process is underway with major meeting occurring in summer 2021
- ▶ Potential timeline for the next NAS EPP Decadal Survey could be mid-2020 through early-2022
 - ▶ Overlap with Snowmass could enable synergy with Snowmass processes and delivery of report as P5 process begins

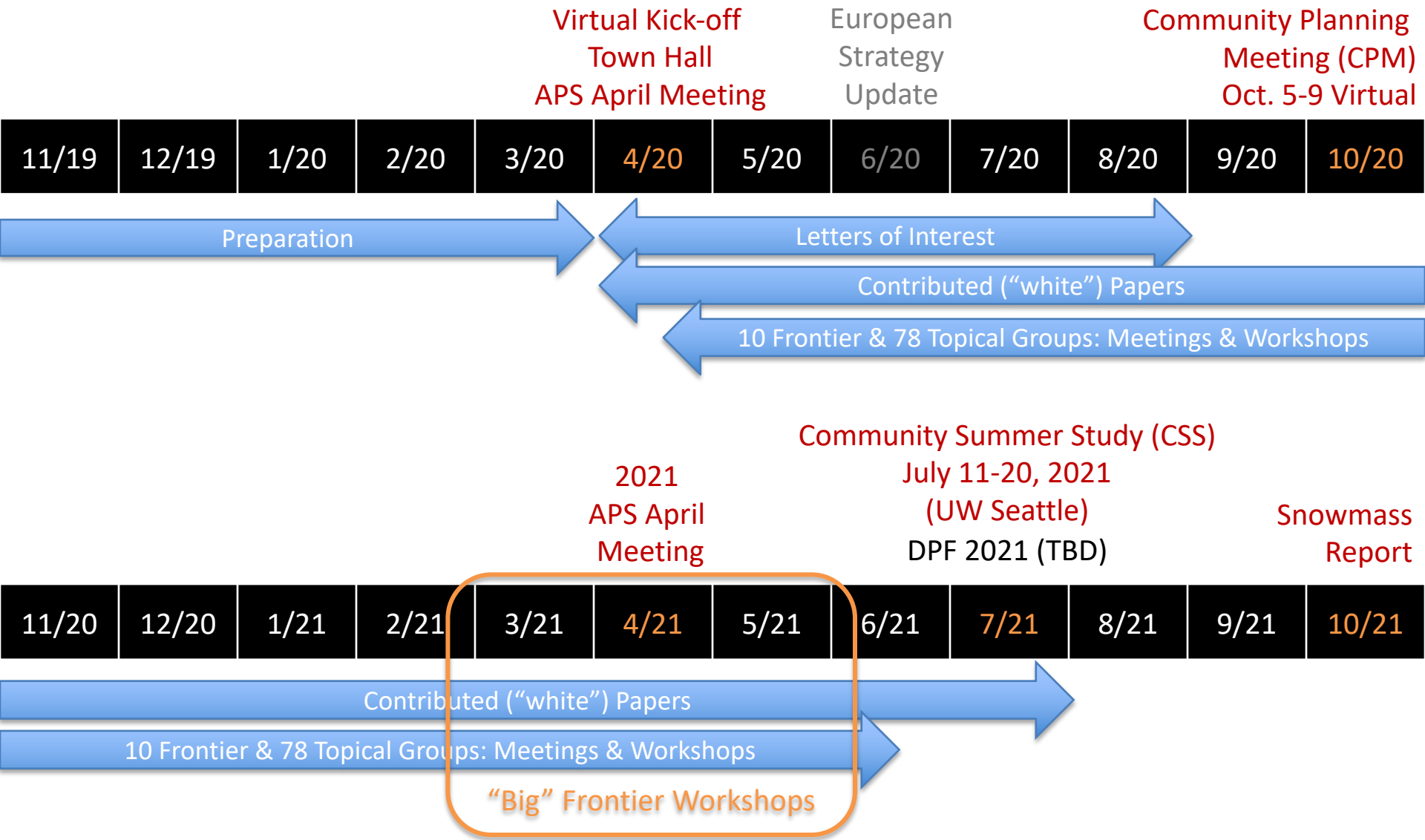


- Snowmass 2021
- NAS EPP 2022
- P5 2022-2023

Coordination with the NAS EPP Decadal Survey

- Discussions with Andy Lankford (co-chair of NAS EPP Decadal Survey)

Snowmass Timeline



2021 Winter/Spring Workshops

SnowMass2021

WELCOME PAGE

ANNOUNCEMENTS

SNOWMASS CALENDAR

ETHICS GUIDELINES

Organization

SNOWMASS ADVISORY GROUP

SNOWMASS STEERING GROUP

FRONTIER CONVENERS

APS DPF SNOWMASS PAGE

SNOWMASS EARLY CAREER

Snowmass Frontiers

ENERGY FRONTIER

NEUTRINO PHYSICS FRONTIER

RARE PROCESSES AND PRECISION

COSMIC FRONTIER

THEORY FRONTIER

ACCELERATOR FRONTIER

INSTRUMENTATION FRONTIER

COMPUTATIONAL FRONTIER

Snowmass Meetings and Workshops

News: **Virtual Snowmass Community Planning Meeting**: ~4 days during **the week of October 5th (Oct. 5-9), 2020**, each day schedule with 9am-2pm PDT, 12pm-5pm EDT.

All the agendas and presentations are available at

[Snowmass Indico Site](#)

For individual frontiers, go to the following frontier calendars:

[Energy Frontier](#)

[Neutrino Frontier](#)

[Rare Processes and Precision](#)

[Cosmic Frontier](#)

[Theory Frontier](#)

[Accelerator Frontier](#)

[Instrumentation Frontier](#)

[Computational Frontier](#)

[Community Engagement Frontier](#)

For all frontier-conveners meeting, cross-frontier meetings and advisory group meetings, go to the following calendar:

[General Calendar](#)

Snowmass Community-wide, Frontier-level workshops and Particle Physics Collaboration Meetings, Workshops and Conferences

[Workshop Calendar](#)

2021 Winter/Spring Workshops

	April 2020	May 2020	June 2020	July 2020	August 2020	Sept. 2020	October 2020	November 2020	December 2020	January 2021	February 2021	March 2021	April 2021	May 2021	June 2021	July 2021	August 2021
Community-Wide Workshop	Apr 18 (TownHall)						Oct 5-9 (CPM)						Apr 17-20 (APS)			July 11-20 (CSS)	
Energy		May 21 (Kick-Off)		July 20-22 (WS)													
Neutrino				July 17 (TownHall)								Tentatively Mar 15-19					
Rare & Precision				July 28 (Kick-Off)													
Cosmic																	
Theory				End (TownHall)									Mar 17-19 (WS)				
Accelerator			June 29 (Kick-Off)														
Instrumentation			June 19 (Kick-Off)										Mar 15-19 (WS)				
Computational					Aug. 10-11 (Kick-Off)												
Underground																	
Community Engagement				July 15 (TownHall)													
Others	April 2020	May 2020	June 2020	July 2020	August 2020	Sept. 2020	October 2020	November 2020	December 2020	January 2021	February 2021	March 2021	April 2021	May 2021	June 2021	July 2021	August 2021
LHCP 2020		May 25-30															
Neutrino 2020			June 22-27														
BOOST 2020				July 19-24													
ICHEP 2020				July 30 - Aug 5													
Fermilab Users Meeting					Aug 10-13												
OSG All Hands Meeting						Aug. 31 - Sept 3											
TOP 2020						Sept. 13											
CMS Collaboration Meeting						Sept 14-18											
BEAUTY 2020						Sept. 21-24											
TAU 2020						Sept. 27-Oct 2											
ATLAS Software & Computing Week							Oct. 5-9										
ATLAS Collaboration Meeting							Oct. 12-16										
T2K Collaboration Meeting							Oct. 12-16										
CMS Software & Computing Week							Oct. 12-16										
French national org. in particle, astroparticle, nuclear							Oct. 19-23										
CEPC Workshop / IAC Meeting							Oct. 25-30										
LHC Higgs Workshop								Nov. 9-11									
CMS Tracker Week								Nov. 9-13									
LHCC								Nov. 18-19									
Thanksgiving Week								Nov. 23-27									
CMS Collaboration Meeting									Nov. 30-Dec. 4								
ATLAS Software & Computing Week									Dec. 7-12								
PIXEL 2020 (Detector)									Dec. 14-18								
Christmas Week									Dec. 21-25								
New Year									Dec. 28 - Jan. 1								
Aspen 2021										January?							
La Thuille 2021												March?					
Moriond 2021												March?					
Quarkonium 2021												March 22-26					
APS April Meeting 2021													April 17-20				
Pheno 2021														May 10-12			
CHEP 2021 (Computing)														May 17-21			
CALOR 2021 (Detector)														May 17-21			
CIPANP 2021																	
LHCP 2021															June 1-6		
FPCP 2021															June 7-12		
CHARM 2021															June 7-11		
EPS 2021														TBD	TBD		
Lattice 2021																July 21	
Higgs 2020																July 26-31	
Lepton Photon 2021																End July	
																	August 9-14

Community Planning Meeting, CPM (Oct. 5-9)

- Webpage, Registration start date, ...: LOC
- Program without speakers: Mid August
- Program with plenary speakers: Early September

★ Weekly Program Committee Meetings

August						
S	M	T	W	T	F	S
			★			1
2	3	4	★	6	7	8
9	10	11	★	13	14	15
16	17	18	★	20	21	22
23	24	25	★	27	28	29
30	31					

September						
S	M	T	W	T	F	S
		1	★	3	4	5
6	7	8	★	10	11	12
13	14	15	★	17	18	19
20	21	22	★	24	25	26
27	28	29	★			

October						
S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

CPM Program Committee

- Frontier Representatives

Energy	Laura Reina	Florida State U.
Neutrinos	Patrick Huber	Virginia Tech.
Rare Processes and Precision Measurements	Marina Artuso	Syracuse U.
Cosmic	Aaron Chou	Fermilab
Theory	Aida El-Khadra	UIUC
Accelerator	Tor Raubenheimer	SLAC
Instrumentation	Jinlong Zhang	Argonne
Computational	Oliver Gutsche	Fermilab
Underground Facilities and Infrastructure	John Orrell	PNNL
Community Engagement	Breese Quinn	U. Mississippi

- Steering Group

- 2 Early Careers

- Vishvas Pandey (postdoc), Joshua Barrow (graduate student)

- Co-chairs of LOC (ex-officio members)

- Bo Jayatilaka, Brendan Kiburg

- Adding ~4 additional people with global views

- CPM?
- CSS

Role of the Program Committee

- Establish the CPM Agenda
 - Set the goals of the CPM
 - Understand what has been done so far and what will be done by Sept
 - Identify input needed to achieve Snowmass goals
 - Establish cross working-group connections and new areas to focus
 - Plan the meeting structure
 - Plenary, breakout sessions (inter-frontier meetings, ...), town hall meetings, ...
- Speakers
 - Identify speakers
 - Invite speakers
- Chair sessions (with LOC)

Frontier-Level Activities Prior to CPM

	April 2020	May 2020	June 2020	July 2020	August 2020	Sept. 2020	October 2020
SNOWMASS							
Community-Wide Workshop	Apr 18 (TownHall)						Oct 5-9 (CPM)
Energy Frontier		May 21 (Kick-Off)		July 20-22 (WS)			
Neutrino Physics Frontier				July 17 (TownHall)			
Rare Processes and Precision				July 28 (Kick-Off)			
Cosmic Frontier							
Theory Frontier				End (TownHall)			
Accelerator Frontier			June 29 (Kick-Off)				
Instrumentation Frontier			June 19 (Kick-Off)				
Computational Frontier					Aug. 10-11 (Kick-Off)		
Underground Facilities							
Community Engagement Frontier				July 15 (TownHall)			

- Compared to CPM 2012, we are a few months ahead
 - CPM 2020 Frontier focus – joint meetings
- Next slide:
 - CPM 2012 program
 - Assuming a similar CPM 2020 program (will be decided by the Program Committee, consulting with all Frontier Conveners and Advisory Group), how CPM 2020 looks

CPM 2012				CPM 2020						
Day 1	Plenary (8 hrs & 15')	Introduction (30')	30'	About this Snowmass (Science, Schedule)	Day 1	Plenary (~4 hrs)	Introduction (30')	30'	About this Snowmass (Science, Schedule)	
		Funding agencies (30')	15'	Questions for the community from DOE			Funding agencies (30')	15'	Questions for the community from DOE	
			15'	Questions for the community from NSF				15'	Questions for the community from NSF	
		HEP in other regions (110')	20'	HEP in Japan			HEP in other regions (105')	30'	Europe	
			20'	HEP in China				30'	Asia/Pacific	
			20'	HEP in India				15'	Canada	
			20'	HEP in Canada				15'	Latin America	
			30'	HEP in Europe				15'	Africa/Middle East	
		Related fields (15')	15'	Astro2010 Decadal Survey			Related Fields (30')	15'	Astro2020 Decadal Survey	
			15'	Long Range Plan for Nuclear Science				15'	Long Range Plan for Nuclear Science	
		Laboratory corner (100')	20'	Fermilab			Laboratory Corner (80'). This could be a panel discussion with initial remarks on their labs	80'	FNAL (20'), BNL (10'), LBNL (10'), SLAC (10'), ANL (10'), Jlab (10'), PNNL (10') ORNL (10')	
			20'	SLAC						
			20'	BNL					15'	Energy
			20'	LBNL					15'	Neutrino
20'	Argonne		15'	Rare Processes & Precision Measurements						
Frontiers (210')	30'	Energy Frontier status and charge	Frontiers (150')	15'	Cosmic Frontier					
	30'	Intensity Frontier status and charge			15'	Theory				
	30'	Cosmic Frontier status and charge			15'	Accelerator				
	30'	Capabilities status and charge			15'	Instrumentation				
	30'	Computing status and charge			15'	Computing				
	30'	Instrumentation status and charge			15'	Underground Facilities and Infrastructure				
	30'	Education and outreach status and charge			15'	Community Engagement				
Day 2	Breakout Sessions (4 - 9 hours depending on frontiers): EF ~ 9 hrs, others 4-5 hrs			Day 3	Breakout Sessions (~2 hours, focusing on inter-frontier meetings and discussions)					
	Town Hall (1 hr & 45')	60'	Short Presentations (ILC, Neutrino Facility, Muon Collider, VHLC, Polarized Drell-Yan, DPF Panel on Theory, ...)		Town Hall + Early Career Corner (2.5 hours)	90'	Town Hall meeting (90')			
		45'	Open Mic			60'	Early Career Corner (60')			
Day 3	Plenary (2 hrs & 35')	Summaries of Breakout Sessions and Next Steps (140')	20'	Energy	Day 4	Plenary (~2 hrs)	Breakout Sessions (~2 hours, focusing on inter-frontier meetings and discussions)			
			20'	Intensity			Frontiers: Summaries of Breakout Sessions and Next Steps (100' = 10' / Frontier x 10 Frontiers)			
			20'	Cosmic						
			20'	Instrumentation						
			20'	Computing						
			20'	Capabilities						
	20'	Education & Outreach								
Closing Remarks (15')	15'		Closing Remarks (15')	15'						
Young Particle	90'	Young Particle Physics								

CPM 2020

CPM 2020 (update)

- Program Sketch (tentative) based on Input from frontier conveners
 - Meeting with all frontier conveners (Mon, July 27)
 - Email messages
- Early Career session (TBD)

CPM 2020				
Day 1	Plenary (1.5 hrs)	Introduction	30'	About Snowmass, About CPM
		Community Engagement	60'	
Breakout Sessions (~2.5 hours, focusing on inter-frontier meetings and discussions)				
Day 2	Breakout Sessions (~4 hours, focusing on inter-frontier meetings and discussions)			
Day 3	Plenary (~4 hrs)	Funding agencies (30')	15'	Questions for the community from DOE
			15'	Questions for the community from NSF
		HEP in other regions (80')	25'	Europe
			25'	Asia/Pacific
			10'	Canada
			10'	Latin America
			10'	Africa/Middle East
		Related Fields (30')	15'	Astro2020 Decadal Survey
			15'	Long Range Plan for Nuclear Science
		Laboratory Corner (45')	45'	Panel Discussion with lab leaders
Town Hall (60')	60'			
Day 4	Plenary (~4 hrs)	Frontiers: Summaries and Next Steps (250')	25'	Energy
			25'	Neutrino
			25'	Rare Processes & Precision Measurements
			25'	Cosmic Frontier
			25'	Theory
			25'	Accelerator
			25'	Instrumentation
			25'	Computing
			25'	Underground Facilities and Infrastructure
			25'	Community Engagement
Closing Remarks (5')	5'			