



# Snowmass All-Conveners Meeting Status Report Mar. 18, 2022

Joel Butler



# New tasks for Conveners



- We will resume Snowmass Newsletter next week
- We will ask you to identify any key issues for your frontier
  - you might want to discuss some of them with the DPF chair line (other channels?)
- Make sure that you stay engaged in the CSS Program Committee through your frontier representative
  - If your PC rep cannot make a meeting, which will become more frequent soon, please consider sending one of the other conveners
- Provide input to CSS Local Organizing Committee though channels to be provided by UW (SLACK ...)

# Rapid Progress towards the CSS



- March 14 Contributed Paper submission (Michael's talk!)
- All-Frontier meetings happening
- Many workshops and meetings underway
- CSS Preparations picking up
  - Will start to need detailed programmatic advice on the community parts of the program

For better and worse, in sickness and in health, in war and in peace, July 17-26 at University of Washington in Seattle approaches!

# Specific Dates from now until CSS



## ▪ All Conveners

- Feb 18
- Mar 18
- April 22
- May 20
- June 17
- July 8

## ▪ Advisory Group

- Feb 28\*
  - Mar 21
  - April 25
  - May 23
  - June 20
  - July 11
- Moved from Feb.21, which is US Presidents Day

These are entered into the Snowmass Calendar on the Twiki and will be entered in Snowmass Indico (will link to calendar)

# Snowmass Preparatory Meeting Schedule



Week	Start Date	Sun	Mon	Tues	Weds	Thurs	Fri	SAT	Host
6	1/30/22								
7	2/6/22								
8	2/13/22				IF	IF	IF		
9	2/20/22				TH	TH	TH		KITP
10	2/27/22								
11	3/6/22								
12	3/13/22				NF	NF	NF		ORNL
13	3/20/22								
14	3/27/22		EF	EF	EF	EF	EF		Brown
15	4/3/22								
16	4/10/22								
17	4/17/22								
18	4/24/22								
19	5/1/22								
20	5/8/22								
21	5/15/22		RPF	RPF	RPF				Cincinnati
22	5/22/22			CEF	CEF	CEF			BNL
23	5/29/22								
24	6/5/22								
25	6/12/22				EF/EC				Virtual
26	6/19/22								

No conflicts among "All-Frontier" meetings . We should maintain this.

# Snowmass CSS

## Presentation of Plans

---



- The broad plan has to be pinned down now that data collection is complete
  - Some important decisions affecting costs at UW have to be made in next two weeks
- Presentation of the plan, especially funding request
  - Feb 17: Discuss with Steering Group Feb 17
  - Discuss with All-conveners Feb 18
  - Feb 28: Discuss with Advisory Group
  - Feb 24: Discussion of options at Steering Group with UW
    - →Decisions MORE TO DO!

# Backup Slides

# CSS Local Organizing Committee



- CSS Program Committee
  - As needed, typically 1pm on Wednesday
    - Last held on Jan 19
- CSS Local Organizing Committee
  - Gordon Watts
  - Shih-Chieh Hsu
  - Alvaro E. Chavarria
  - Jason Detwiler
  - Joey Shapiro Key
  - Alejandro Garcia
  - Anna Goussiou
  - Laura Jeanty
  - Henry Lubatti
  - Elise Novitski
  - Gary Rybka
  - Jan Strube
  - Lauren Tompkins
  - Tien-Tien Yu



# Organization in Ten "Frontiers" - I



## Accelerator



Steve Gourlay  
(LBNL)



Tor Raubenheimer  
(SLAC)



Vladimir Shiltsev  
(FNAL)

## Cosmic



Aaron Chou  
(Fermilab)



Marcelle Soares-Santos  
(U.Michigan)



Tim Tait  
(UC Irvine)

## Community Engagement



Kétévi Assamagan  
(BNL)



Breese Quinn  
(Mississippi)

## Computing



Steven Gottlieb  
(Indiana U.)



Ben Nachman  
(LBNL)



Daniel Elvira  
(FNAL)

## Energy



Meenakshi Narain  
(Brown U)

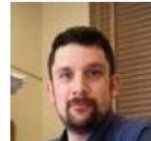


Laura Reina  
(FSU)



Alessandro Tricoli  
(BNL)

## Instrumentation



Phil Barbeau  
(Duke)



Petra Merkel  
(FNAL)



Jinlong Zhang  
(ANL)

# Organization in Ten "Frontiers" - II



## Neutrino



Patrick Huber  
Virginia Tech



Kate Scholberg  
Duke University



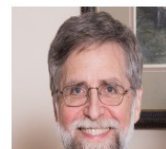
Elizabeth Worcester  
BNL



Marina Artuso  
(Syracuse U.)



Alexey Petrov  
(Wayne State U.)



Bob Bernstein  
(FNAL)

## Rare Processes & Precision Measurements

## Theory



Nathaniel Craig  
(UCSB)



Csaba Csaki  
(Cornell)



Aida El-Khadra  
(UIUC)

## Underground Facilities and Infrastructure



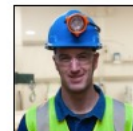
Laura Baudis (U. Zurich)



Jeter Hall (SNOLAB)



Kevin Lesko (LBNL)



John Orrell (PNNL)

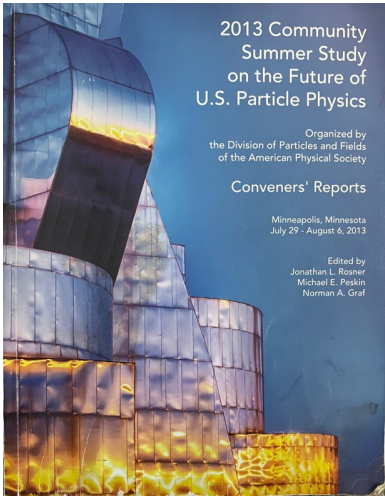
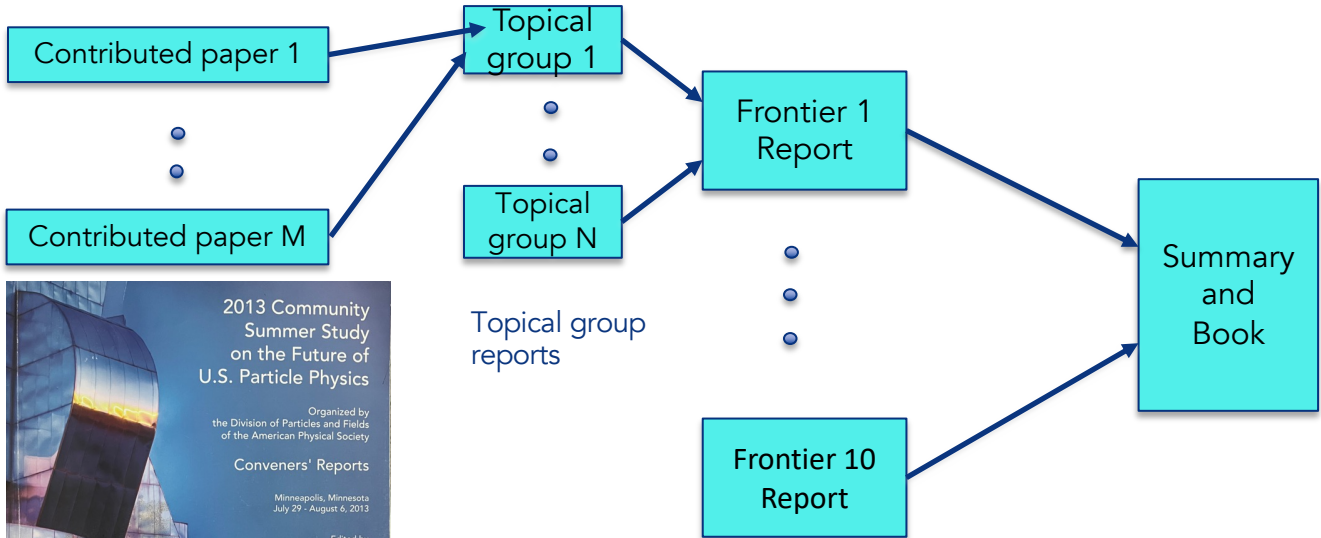
All frontiers have topical subgroups (details on Twiki)

Accelerator:	7	Instrumentation:	10
Cosmic:	7	Neutrino:	10
Community Engagement:	7	Rare Processes:	7
Computing:	7	Theory:	11
Energy:	10	Underground:	6

More than 1500 people have signed up to participate in Snowmass!

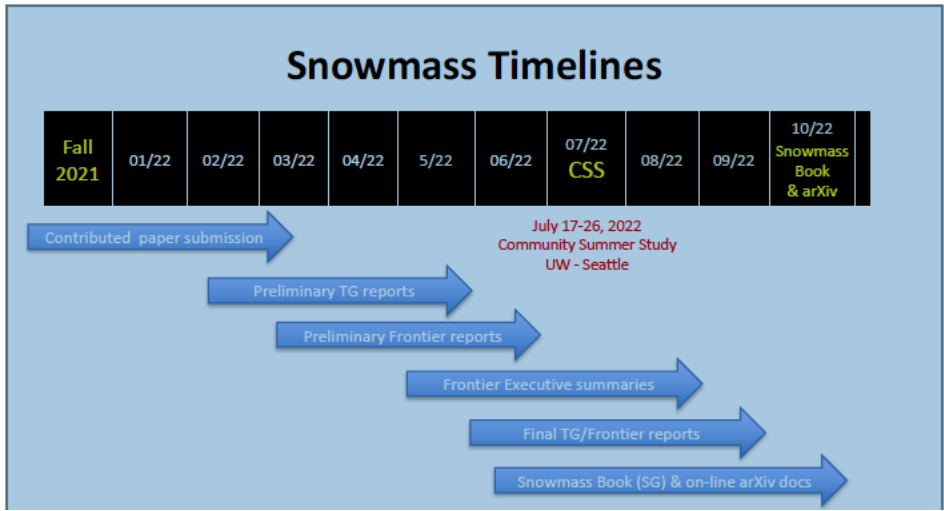
10 Frontiers	80 Topical Groups
Energy	Higgs Boson properties and couplings, Higgs Boson as a portal to new physics, Heavy flavor and top quark physics, EW Precision Phys. & constraining new phys., Precision QCD, Hadronic structure and forward QCD, Heavy Ions, Model specific explorations, More general explorations, Dark Matter at colliders
Neutrino Physics	Neutrino Oscillations, Sterile Neutrinos, Beyond the SM, Neutrinos from Natural Sources, Neutrino Properties, Neutrino Cross Sections, Nuclear Safeguards and Other Applications, Theory of Neutrino Physics, Artificial Neutrino Sources, Neutrino Detectors
Rare Processes	Weak Decays of b and c, Strange and Light Quarks, Fundamental Physics and Small Experiments. Baryon and Lepton Number Violation, Charged Lepton Flavor Violation, Dark Sector at Low Energies, Hadron spectroscopy
Cosmic	Dark Matter: Particle-like, Dark Matter: Wave-like, Dark Matter: Cosmic Probes, Dark Energy & Cosmic Acceleration: The Modern Universe, Dark Energy & Cosmic Acceleration: Cosmic Dawn & Before, Dark Energy & Cosmic Acceleration: Complementarity of Probes and New Facilities
Theory	String theory, quantum gravity, black holes, Effective field theory techniques, CFT and formal QFT, Scattering amplitudes, Lattice gauge theory, Theory techniques for precision physics, Collider phenomenology, BSM model building, Astro-particle physics and cosmology, Quantum information science, Theory of Neutrino Physics
Accelerator	Beam Physics and Accelerator Education, Accelerators for Neutrinos, Accelerators for Electroweak and Higgs Physics, Multi-TeV Colliders, Accelerators for Physics Beyond Colliders & Rare Processes, Advanced Accelerator Concepts, Accelerator Technology R&D: RF, Magnets, Targets/Sources
Instrumentation	Quantum Sensors, Photon Detectors, Solid State Detectors & Tracking, Trigger and DAQ, Micro Pattern Gas Detectors, Calorimetry, Electronics/ASICS, Noble Elements, Cross Cutting and System Integration, Radio Detection
Computational	Experimental Algorithm Parallelization, Theoretical Calculations and Simulation, Machine Learning, Storage and processing resource access (Facility and Infrastructure R&D), End user analysis
Underground Facilities	Underground Facilities for Neutrinos, Underground Facilities for Cosmic Frontier, Underground Detectors
Community Engagement	Applications & Industry, Career Pipeline & Development, Diversity & Inclusion, Physics Education, Public Education & Outreach, Public Policy & Government Engagement
Snowmass Early Career	Snowmass Early Career to represent early career members and promote

# The Snowmass Book - 2021



- Report cover from Snowmass 2013, report is~ 350 pages
- The new report is expected to be ~500 pages
- Contributed papers will remain part of the permanent record of Snowmass

# Timeline for Snowmass Book



- March 15: Contributed papers (a.k.a. White Papers)
- May 31: Preliminary Topical Group Reports
- June 30: Preliminary Frontier Reports
- July 17 – 26: Converge on reports for all the frontiers and produce executive summaries representing the views of their communities and providing the basic input needed for P5
- September: draft Executive Summary and Report Summary
- October- November: Snowmass Book finalized and ready for submission

# Impact of COVID



- This edition of Snowmass was planned to run from the summer of 2020 to a final get-together in July of 2021 at the University of Washington
- By early 2021, it became clear that COVID would have a major impact on our ability to carry out the necessary work because of
  - Lack of face-to-face meetings reduced efficiency
  - Heavy burdens fell on our young physicists, who do many of the studies
    - **Especially young physicists with children, who now had care for them all day and school them at home**
- In consultation with DOE, which agreed to delay P5 by one year, to 2022/23, we decided to take a ~7month pause/slowdown with the expectation that conditions would improve because of vaccines and other mitigation measures
  - **The meeting at University of Washington was delayed until July of 2022**
- The pause/slowdown began in January of 2021
- The startup dates varied among the frontiers, but by September everything was restarted and there was a **"Snowmass Day" on September 24, 2021**, to review the status and plans for completing the work in for the July 2022 meeting
- We hope that vaccination and mitigation will enable us to function well even in the face of the Omicron variant, which has surfaced since the restart

Our study will be sufficiently complete to provide the necessary inputs to P5 and we hope to avoid further postponements

# Selected Upcoming Activities

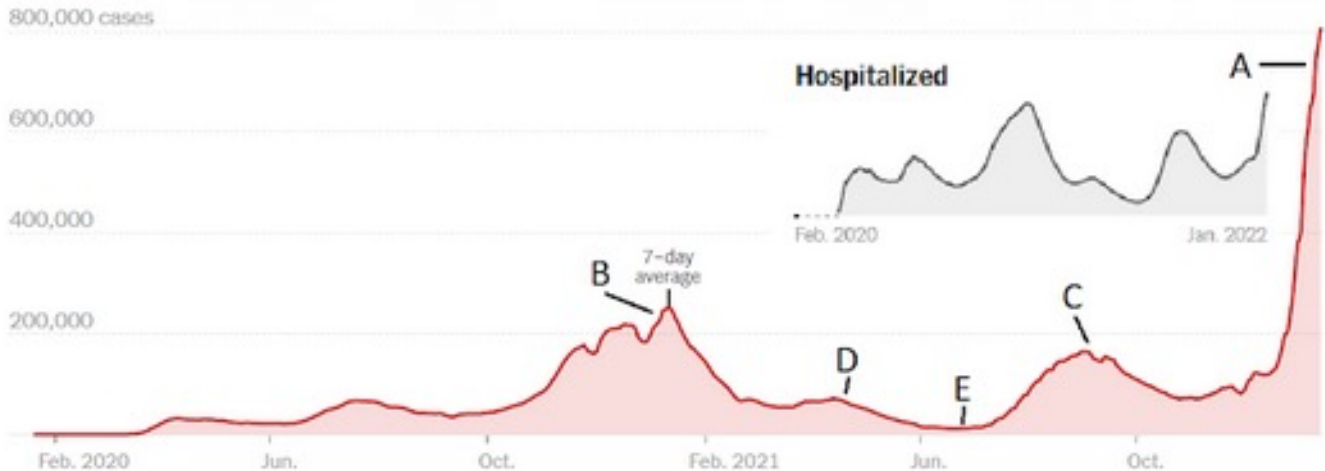


- Preparatory “All-frontier” meetings (which we hope will be HYBRID, i.e. will have both an in-person component and remote access) to complete and begin to synthesize the white papers:
  - Instrumentation Frontier, Feb. 14-18, Stony Brook (delayed, remote?)
  - Theory Frontier, Feb. 23 – 25, KITP-UCSB: hybrid meeting
  - Neutrino Frontier, March 16 – 18, Oak Ridge National Lab, hybrid
  - Energy Frontier, week of March 27, Brown University, hybrid
  - Rare Decays and Precision Measurements: May 16 – 19, University of Cincinnati, hybrid
  - Community Engagement: May 24 - 26, Brookhaven National Lab, hybrid
- Special Seminar series (all virtual) on topics that will shape US accelerator activities including construction projects and R&D
  - Colliders (EF and AF)
  - Muon properties and decays (RPF and AF)
  - Neutrinos (NF and AF)
  - Accelerator Dark matter searches and other fixed target needs (RPF and AF)
- Ongoing Initiative of Snowmass Early Career
  - Colloquium series: “Big Questions in Particle Physics”

# From CSS Survey



New cases in the USA, with an inset of the hospitalization rate. These were pulled from the NYTimes COVID stats page (Jan 14, 2022).





# From CSS Survey



The points below are labeled on the case/day plot above. Please indicate the largest USA new case-load/day rate for which you'd be willing to attend Snowmass in person. \*

- Point A, on the new cases plot. Peak of the Omicron wave. Many universities are holding remote classes
- Point B, this was last winter, around January, prior to the vaccine being widely available. Most work and schools were remote in the USA.
- Point C, the delta surge, occurred late summer 2021 into the fall of 2021. Many schools resumed in-person classes as the rates declined.
- Point D, spring 2021, as the country started coming out of lockdown and vaccines were being broadly distributed.
- Point E, summer 2021, summer lull before the Delta variant took off.
- Not comfortable regardless of case load
- My institution's or country's travel restrictions related to COVID are the concern more than the case load

# Captioning



- Request for support of one physicist to work on a white paper in CEF/COMMF3 on accessibility
  - Insists that high quality captioning necessary
  - White Coat captioning is \$306/h at 8 meetings
- Brief Notes and Action Items from meeting with
  - Discussion of need – the target is major white paper – options, quality issues
  - DPF budget constraints, issue of opportunity costs and Constant sum game
  - Opportunity costs are related to increased pressure to provide a variety support, especially for Early Career Scientists
  - Giordan Stark: Provide a definite proposal for the rest of 2022
  - Tulika to follow up with CERN on an AI-based automated captioning system that may be tested at the LHCP
  - Joel will ask APS what their plans to address this problem
  - We (DPF) will check with other APS units to learn if they face similar challenges and what solutions they have utilized or are considering
  - We should be sure to consider all alternatives to captioning since it is unclear that the resources will be available for all future needs.
  - We, collectively, should explore other sources of funding, including a specific addition to conference fees, private funds, some form of crowd-sourcing ...
- **If any your Divisions have good solutions or want to work with us to find them, let us know**

We sent an email approving the captioning request for finishing the contributed paper Giordan is working on. He has to apply for support for captioning at all-frontier meetings and the CSS and it is not guaranteed at the quality level he seeks. It can be included in the registration fee. We have applied to the FAs for funds.