

Underground Facilities & Infrastructure Frontier (UF) Workplan

Co-Conveners

Laura Baudis (U. Zurich), **Jeter Hall** (SNOLAB),
Kevin Lesko (LBNL), **John Orrell** (PNNL)

Underground Facilities & Infrastructure (UF)

- Frontier Objectives & Goals
 - Determine science programs performing research in underground facilities
 - Collect information on existing underground facilities & infrastructure (supply)
 - Collect current/future needs for science in underground facilities (demand)
 - Compare demand to supply (gap analysis)
 - Analyze to generate a recommendation for an integrated strategy for underground facilities & infrastructure

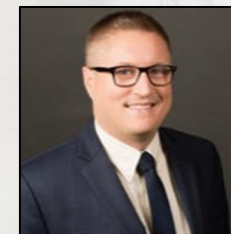
Underground Facilities & Infrastructure

Co-Conveners & Topical Conveners

UF Co-Conveners



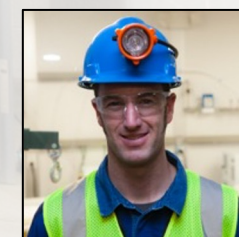
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Group	Topic	Conveners		Liaisons
UF1	Underground Facilities for Neutrinos	Tim Bolton (KSU)	Patrick Decowski (Nikhef & U Amsterdam)	<u>Neutrinos</u> Albert de Roeck (CERN) <u>Astronomical v</u> Gabriel Orebi Gann (Berkeley)
UF2	Underground Facilities for Cosmic Frontier	Scott Hertel (UMass Amherst)	Kaixuan Ni (UCSD) Emilija Pantic (UC Davis)	<u>Particle DM</u> Hugh Lippincott (UCSB) Jodi Cooley (SNOLAB) <u>Instrumentation</u> Eric Dahl (Northwestern)
UF4	Supporting Capabilities	Richard Schnee (SDSMT)	Alvine Kamaha (UCLA)	
		Brianna Mount (BHSU)		
UF5*	Synergistic Research	Daniel Robertson (Notre Dame)		<i>Many external contributors</i>
UF6	Integrated Strategy for Underground Facilities and Infrastructure	Laura Baudis (U. Zurich)	Jeter Hall (SNOLAB)	
		Kevin Lesko (LBNL)	John Orrell (PNNL)	

* UF3 – Underground Detectors – was absorbed into UF5

UF Topical sessions at Snowmass in Seattle

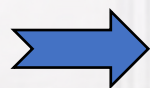
Day	Date	Time	Title	Room
Sunday	July 17			
Monday	July 18			
Tuesday	July 19	08:00-10:00	UF2: Underground Facilities for Cosmic Frontier	307 (HUB)
Wednesday	July 20	10:00-12:00	UF5: Synergistic Underground Science & Facilities	111 (JHN)
Thursday	July 21			
Friday	July 22	10:00-12:00	UF1: Underground Facilities for Neutrinos	242 (MGH)
Saturday	July 23	10:00-12:00	UF4: Supporting Capabilities for Underground Research	022 (JHN)
Sunday	July 24	10:00-12:00	UF6: Underground Facilities Gaps & Needs	242 (MGH)
Monday	July 25			
Tuesday	July 26			

Cross-Frontier sessions with UF

Day	Date	Time	Title	Room
Sunday	July 17			
Monday	July 18			
Tuesday	July 19	10:00-12:00	UF-NF-RF: Neutrinoless double beta decay	241 (MGH)
Wednesday	July 20	08:00-10:00	UF-IF: Quantum Science & Technology (QST) Instrumentation & Underground Facilities	111 (JHN)
Thursday	July 21	08:00-10:00	UF-NF: Long Baseline Neutrinos & Underground Facilities	231 (MGH)
Friday	July 22			
Saturday	July 23	10:00-12:00	UF-IF: Instrumentation & Underground Facilities	022 (JHN)
Sunday	July 24			
Monday	July 25			
Tuesday	July 26			

UF Colloquia

- Monday, July 18th
14:00-15:30
Pacific



Afternoon Plenary: A Tour of Underground Facilities & Science: Today and Tomorrow

📍 130 (Kane Hall)

Convener: Jeter Hall (SNOLAB)

2:00 PM	Introduction and overview of UF Speaker: Jeter Hall (SNOLAB)	🕒 5m
2:05 PM	SURF Speaker: Jaret Heise (Sanford Underground Research Facility)	🕒 30m
2:35 PM	International Underground Laboratories Speaker: Clarence Virtue (Laurentian University)	🕒 40m
3:15 PM	Outline of UF activities at Snowmass Speaker: Jeter Hall (SNOLAB)	🕒 15m

- Friday, July 22nd
14:00-15:30
Pacific



Afternoon Plenary: Advancing Research at Underground Facilities (UF)

📍 250 (HUB)

Conveners: Laura Baudis (University of Zurich), Jeter Hall (SNOLAB), Kevin Lesko (LBNL), John Orrell (Pacific Northwest National Laboratory)

2:00 PM	Underground needs for Neutrino & Cosmic Frontier science Speaker: Scott Hertel (UMass Amherst)	🕒 22m
2:22 PM	Supporting infrastructure and synergistic research Speaker: Alvine Kamaha (UCLA)	🕒 22m
2:44 PM	A strategy for underground facilities and research Speaker: John Orrell (Pacific Northwest National Laboratory)	🕒 22m
3:06 PM	Questions and discussion	🕒 24m

Engaging with UF

- What:
 - Detail the facility & infrastructure needs of your underground science!
- Why:
 - Help UF document what is required to implement the science programs
- How:
 - Engage with UF Topical Conveners in UF report finalization

UF Reports

- Reports are still in draft format
- UF Reports draw from other Frontiers:
 - Facility needs must consistently reflect science needs in other Frontier reports
 - Facility and infrastructure content from other Frontiers can find a home in UF!
- Previews and draft conclusions are available in UF sessions this week

Summary

- Underground Facilities & Infrastructure Frontier (UF) supports the execution of science from other Frontiers, notably:
 - Neutrino Frontier
 - Cosmic Frontier
 - Rare Processes and Precision Frontier
- Snowmass in Seattle is key to UF for:
 - Establishing consistency with requirements stemming for other Frontiers
 - Outlining and communicating UF report structures
 - Drafting recommendations *in context*
- Join us to help catalyze the future for underground science!

UF Topical sessions at Snowmass in Seattle

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Workplan talk

- Topics to cover →

Context

On Sunday, July 17 (Day 1 of the Seattle Snowmass CSS), each Frontier will have 15 minutes to describe their CSS activities to all participants. While we know that each presenter and Frontier will customize their presentation, we suggest that these (short) talks be sure to address the following topics for your Frontier.

Topics

- Please introduce your topical groups and their conveners.
- Describe the schedule of activities for your Frontier, in particular:
 - Highlight the parallel sessions which are particularly important for providing input to your deliberations and/or are most accessible to those outside your Frontier.
 - Discuss any cross-Frontier activities.
 - Summarize the schedule of your plenary sessions.
- How can participants, especially those outside the Frontier, learn about the status of your Frontier's deliberations?
 - Is a draft Frontier Report available?
 - The existence of a draft Frontier Report is especially important for participants outside the Frontier who are unlikely to be able to read the many more-specialized Topical Group Reports. (If available, we recommend that your draft report be posted on the Snowmass Wiki.)
 - If a draft Frontier Report is not available, what materials are available for review?
- Explain how participants can most effectively participate in the Frontier's deliberations and provide input to your final report.