

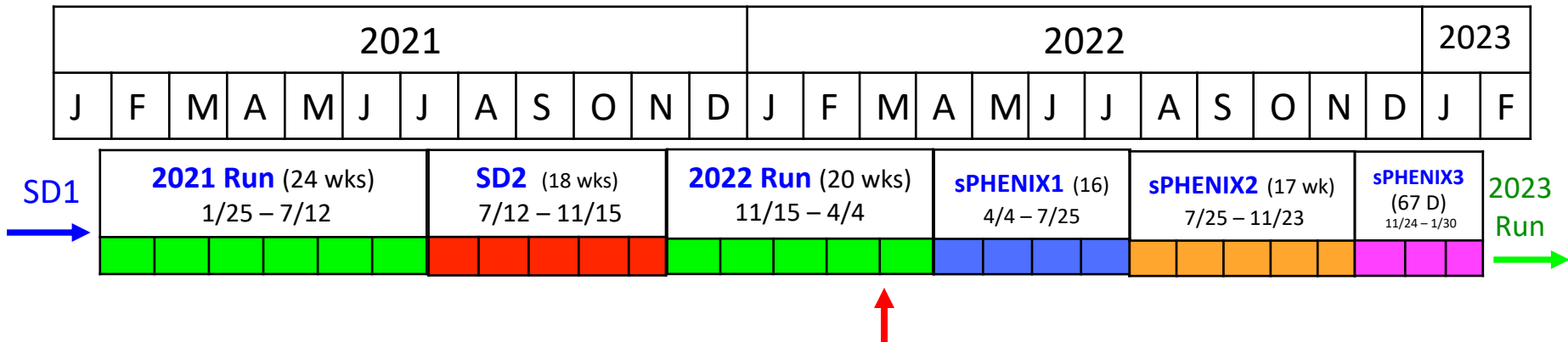
# Run 22 RHIC Machine/Experiments Meeting

*March 8, 2022*

## Agenda:

- Welcome and Overall schedule for the FY 22 RHIC run - W. Christie
- STAR status, schedule, and update - J.H. Lee
- CeC status, schedule, and update - V. Litvinenko
- RHIC status, schedule, and update - H. Huang
- APEX program status, schedule, and update - Y. Luo
- All Other Business (AOB)

## Rough Look at Long Term Schedule



- N.B. We are **sixteen weeks** and 1 day past the November 15<sup>th</sup> date start of RHIC run 2022.
- We are **fourteen weeks** and one day past the November 29<sup>th</sup> date where the Helium cooldown of the Yellow ring started.

*N.B. This Schedule was the result of meetings that were held in late summer of 2020 to discuss the longer-term schedule.*

# A calendar for the RHIC FY 2022 Run

November						
Su	Mo	Tu	We	Th	Fr	Sa
	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				

December						
Su	Mo	Tu	We	Th	Fr	Sa
			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	

January						
Su	Mo	Tu	We	Th	Fr	Sa
						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					

February						
Su	Mo	Tu	We	Th	Fr	Sa
		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					

March						
Su	Mo	Tu	We	Th	Fr	Sa
		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		

April						
Su	Mo	Tu	We	Th	Fr	Sa
					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



Today's date



Scheduled start of Helium cooldown. With schedule issue, the cooldown started for only the Blue ring.



Yellow ring cooldown started.



First collisions for STAR.



Current date for end of beam Ops

# Discussion Topics for Today

## Discussion topics. Continuing questions are:

- Polarizations that can be achieved for the Blue and Yellow beams
- Understanding any tilts to the polarization direction at both STAR and the p-C polarimeter.
- Optimizing the rate of FOM (Lum & P) to reach the STAR goal.
- Efficiently interleaving the STAR, CeC, APEX, and Collider development efforts.
  - Discussion of possible ideas to adapt our operations/scheduling model to adapt to the higher rate and length of failures this year.

## Few parameters for context:

- Without extension, there is just under 4 weeks remaining for beam operations
- With extension there would be just under 6 weeks remaining
- The STAR Physics program has currently reached about 48% of the goal (~57/120).

## Possible ideas:

- Schedule to run physics until there have been 90 hours of “Physics” running
  - Store length ~ 8 hours, Median time between store ~ 2 hrs, average time between stores about 5 hours,  $9 \times 11 \text{ hrs} = 99 \text{ hrs}$ ,  $99/168 = 59\%$  ( $99/143 \sim 70\%$ )
- Schedule one day/week (24 hrs) for everything other than Physics running
- ??

## All Other Business (AOB)

- AOB

# Calendar for first 6 months of 2022.

January						
Su	Mo	Tu	We	Th	Fr	Sa
						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					
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February						
Su	Mo	Tu	We	Th	Fr	Sa
		1	2	3	4	5
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13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28					
1:● 8:● 16:○ 23:●						

March						
Su	Mo	Tu	We	Th	Fr	Sa
		1	2	3	4	5
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13	14	15	16	17	18	19
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27	28	29	30	31		
2:● 10:● 18:○ 25:●						

April						
Su	Mo	Tu	We	Th	Fr	Sa
					1	2
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17	18	19	20	21	22	23
24	25	26	27	28	29	30
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May						
Su	Mo	Tu	We	Th	Fr	Sa
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15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				
8:● 16:○ 22:● 30:●						

June						
Su	Mo	Tu	We	Th	Fr	Sa
			1	2	3	4
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12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30		
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 Today's date

 Current date for end of beam Ops

# Program Advisory Committee (PAC) recommendations on the 2022 RHIC Run

## 2.2 Discussion and Recommendations for RHIC Run 22

The Run 22 BUR of a transversely polarized  $pp$  run at 510 GeV with the STAR Forward Upgrade represents a unique opportunity to address important issues in spin physics and will allow exploration of the regimes of low and high- $x$  physics with unprecedented precision. New results anticipated for Run 22 with the Forward Upgrade can have important impacts on the planning for EIC, as well as on the interpretation of EIC data. *The PAC strongly endorses the STAR Run 22 BUR.*

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If Run 22 were to be reduced from 20 to 18 weeks that would result in at least a 15% reduction of the integrated luminosity and have a very detrimental effect on the prospects of achieving all the physics goals. Given that the CeC beam time would additionally reduce the STAR run by 2.6 weeks, this would have further negative effects on the physics programme. C-AD is strongly encouraged to optimize RHIC operations to fulfill the goals of both CeC and STAR.

*What is shown here are the first and eighth paragraphs from the PAC report concerning the 2022 RHIC run. The other paragraphs of the section deal with physics, as opposed to operations topics.*