

# Schedule

Genki Nukazuka (RIKEN)

# News from sPHENIX

167th sPHENIX Fortnightly Meeting

Friday 5 Jan 2024, 12:00 → 14:35

America/New\_York

Universe

Description

Topic: sPHENIX General Meeting

Time: Every 2 weeks on Fri at 12:00 PM Eastern Time (US and Canada)

<https://bnl.zoomgov.com/j/1617155902?pwd=UGYxazIxeVJpZzd5dmJDK1Q5Qk5xQT09>

Please download and import the following iCalendar (.ics) files to your calendar system.  
Weekly: [https://bnl.zoomgov.com/meeting/vJlscOitqzIqGKs2RpqiCOkeopRvGUtLzXQ/ics?icsToken=98tyKuiurzwrH9GcsBvBel86FaPkaur7q2BpgbAPrg\\_0CgN8aQb5JtBUFYdrPMLo](https://bnl.zoomgov.com/meeting/vJlscOitqzIqGKs2RpqiCOkeopRvGUtLzXQ/ics?icsToken=98tyKuiurzwrH9GcsBvBel86FaPkaur7q2BpgbAPrg_0CgN8aQb5JtBUFYdrPMLo)

Join ZoomGov Meeting  
<https://bnl.zoomgov.com/j/1617155902?pwd=UGYxazIxeVJpZzd5dmJDK1Q5Qk5xQT09>

Meeting ID: 161 715 5902  
Passcode: 381420  
One tap mobile  
+16692545252,,1617155902#,,,,0#,,381420# US (San Jose)  
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Join by SIP  
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161.199.138.10 (US West)  
161.199.136.10 (US East)  
52  
61  
100.140  
Meeting ID: 161 715 5902  
Passcode: 381420

12:00 → 12:25

Collaboration news

Speakers: David Morrison (BNL), Gunther Roland (MIT)

GM20240105.pdf

12:25 → 12:50

Run 2024 detector preparations: Status and schedule

Speaker: John Haggerty (Brookhaven National Laboratory)

haggerty\_fortnightly...

12:50 → 13:15

Run coordination update

Speaker: James Nagle (University of Colorado)

nagle\_runcoord\_gm...

13:15 → 13:30

Speaker's bureau update

Speakers: Marzia Rosati (Iowa State University), Marzia Rosati (Iowa Stat

GenMeet-SB-2024-0...

12:00 → 12:25

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haggerty\_fortnightly...

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nagle\_runcoord\_gm...

13:15 → 13:30

Speaker's bureau update

Speakers: Marzia Rosati (Iowa State University), Marzia Rosati (Iowa Stat

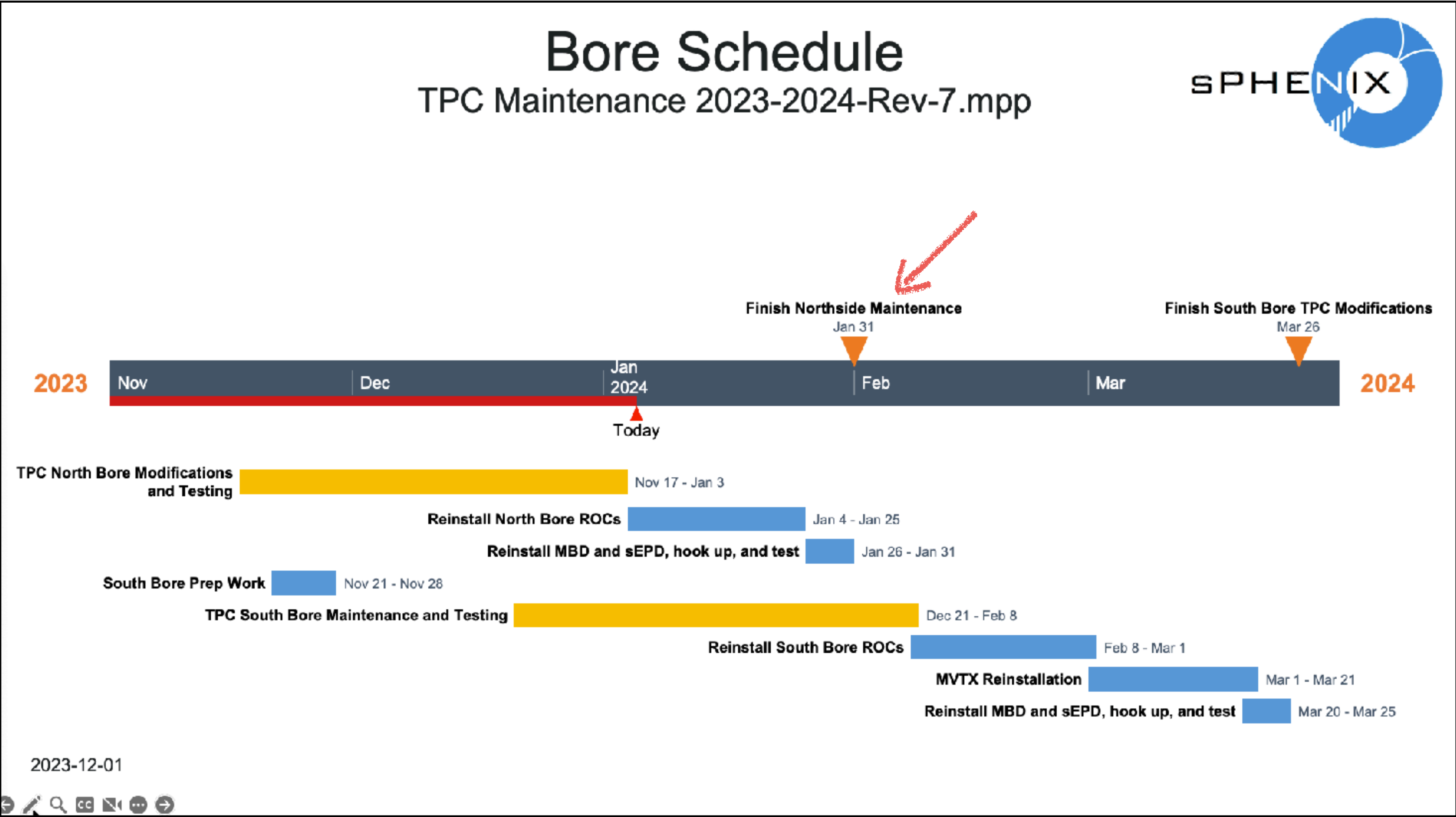
GenMeet-SB-2024-0...

The work schedule (short-term) at 1008 was reported.  
RUN24 schedule (long-term) was reported.

[sPHENIX General meeting](#)

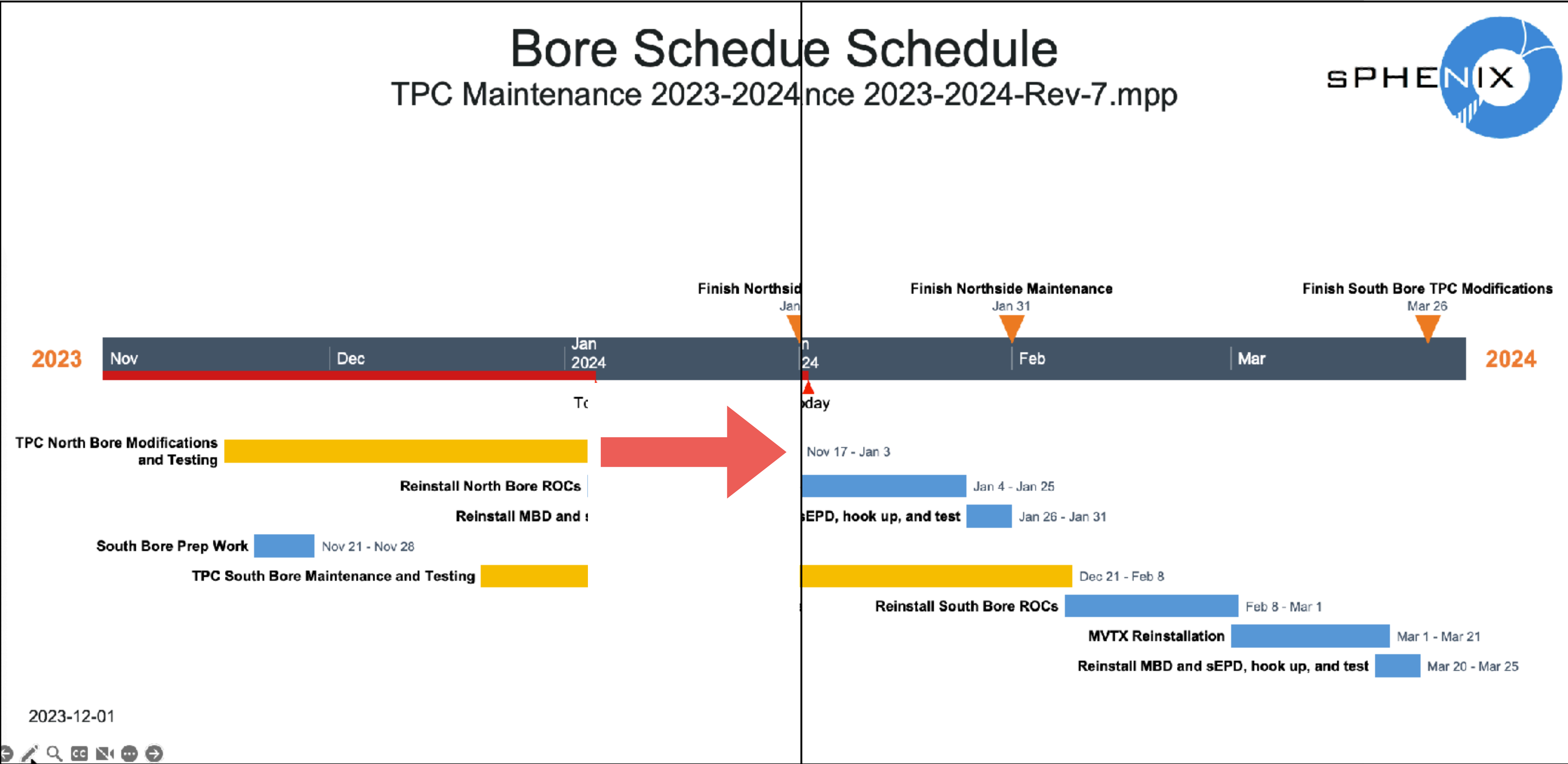
# News from sPHENIX: Short-term

[sPHENIX General meeting](#)



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[sPHENIX General meeting](#)





# News from sPHENIX: Short-term

[sPHENIX General meeting](#)

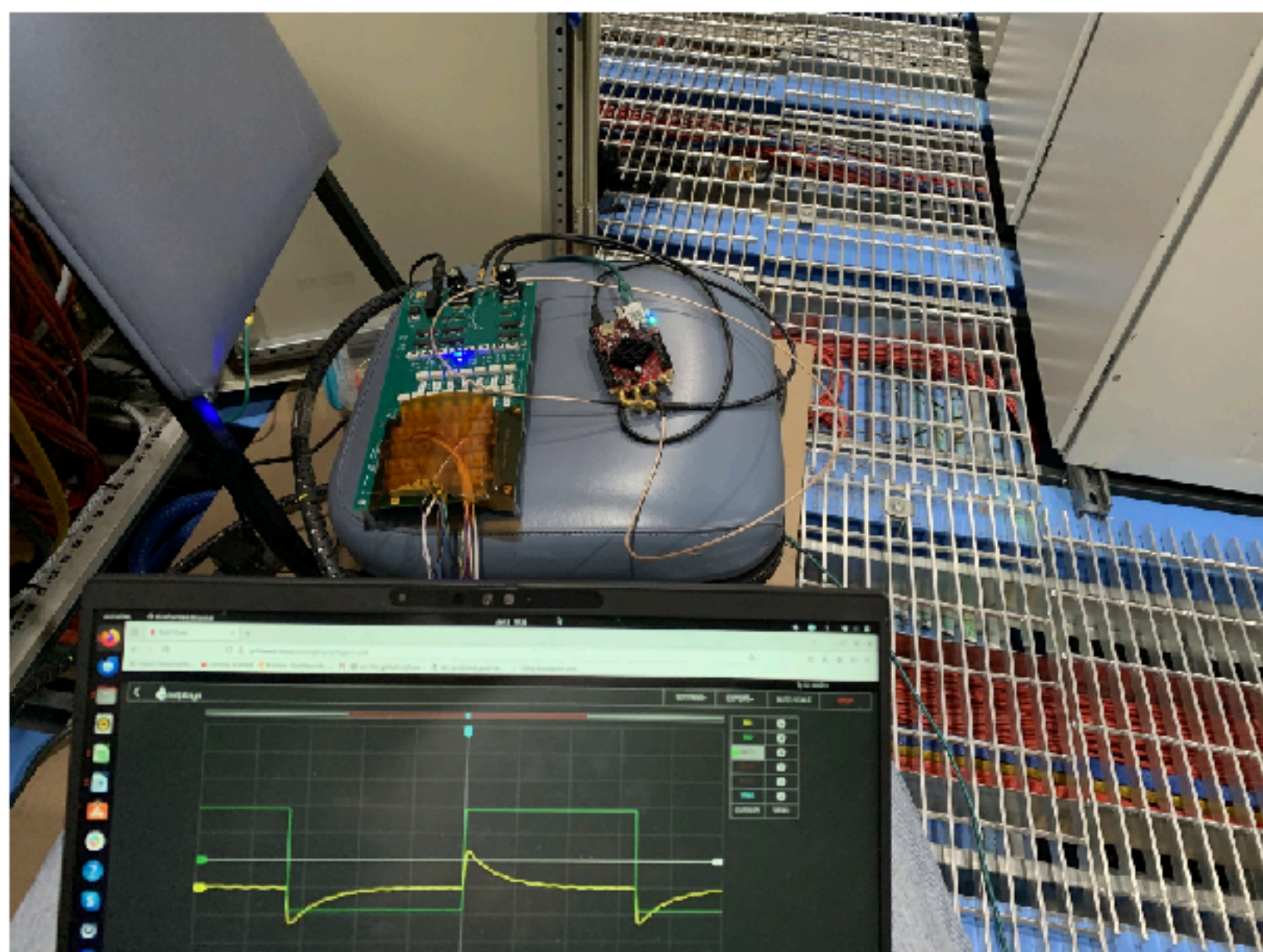
## Schedule changes



- We haven't revised the schedule but our strategy has changed to deal with missing components
- It still has to be vetted but right now our schematic schedule is
  - Complete all the work on the TPC in the bore by January 31
  - Run both sides to operating voltage and take cosmics Feb 1-4
  - **Begin south INTT ROC reinstallation and testing Feb 5** 10 working + 4 weekend days
  - Begin MVTX re-installation Feb 19
  - Re-install MBD and sEPD starting March 4
- It's possible that we could have the north side operable by the end of next week which would put us around 10 days behind the November schedule, but we're also a week or so ahead on south preparations



# TPC in pictures



Capacitance test of cables installed to north TPC (tester by Steve, testing by Evgeny and Charles)



Borrowed CAEN 1515BV used for testing



2 of the 18 cables needed on each end of the TPC; Sal did the final assembly but many others prepped the wires





# Where are we?

- HV cables + cards
  - North 18 complete, installed, capacitive testing complete; HV testing in progress
  - South 8 or 9 complete, remainder should be complete next week
- “Contingency” or divider boxes
  - Mechanically ready
  - Fatherboards and daughterboards on hand
  - Shortage of connectors, pins, sockets needed to complete them (they use an oddball multi-HV connector probably designed at CERN, made by Radiall, sold by CAEN)
    - We plan to solder connections directly to fatherboards without connectors
- CAEN modules on order
  - 10 modules      14 weeks (April 15)
  - 10 modules      18 weeks (May 15)
  - 20 modules      24 weeks (June 30)
- Rack preparation (new HV racks 3B8 and 3B9)
  - Plumbing complete
  - Wiring largely complete
  - PLC download needed next week (Thu/Fri) to enable control and monitoring
- Cooling improvements and improved monitoring under way



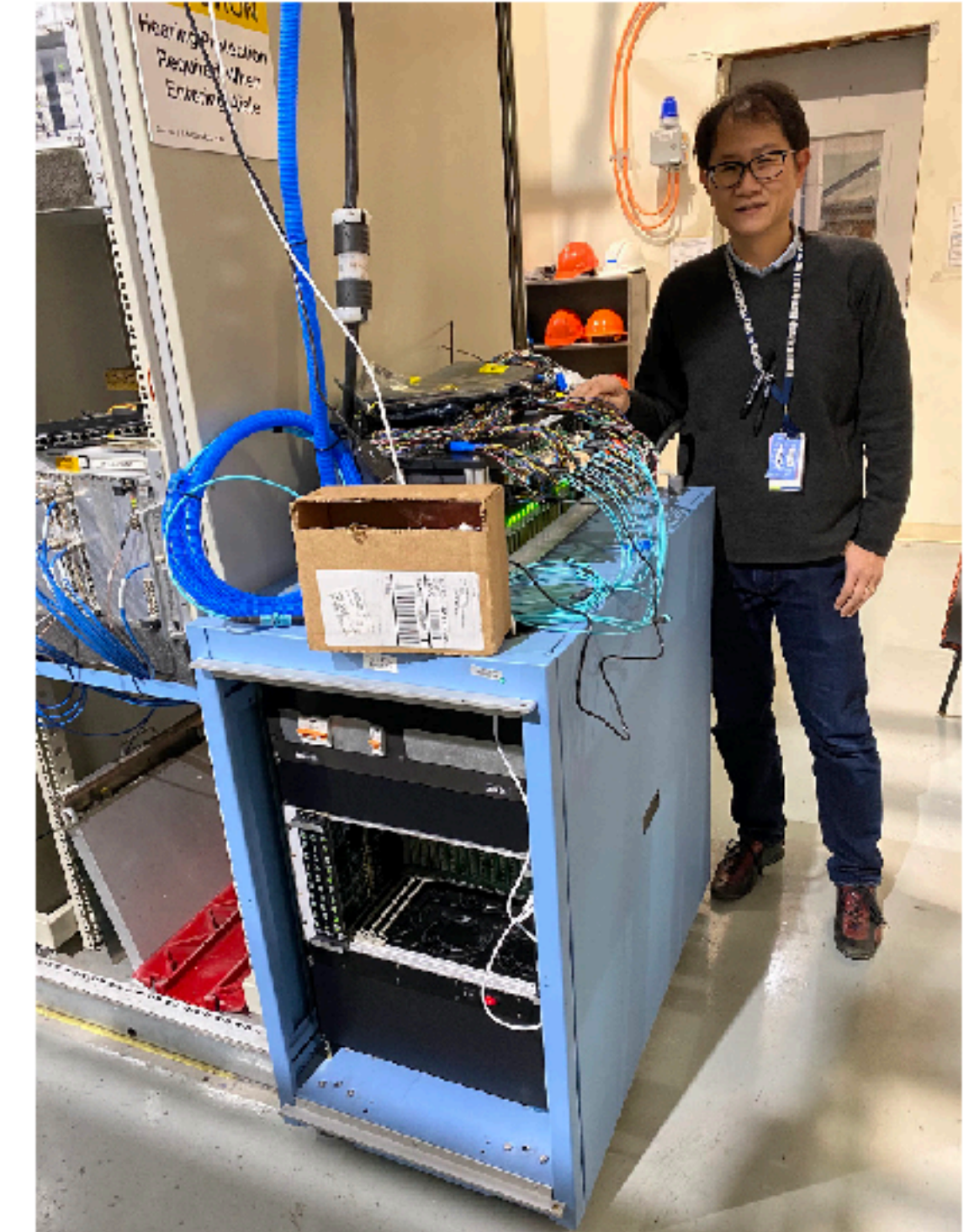
**Contingency boxes  
under construction**



# Other TPC work



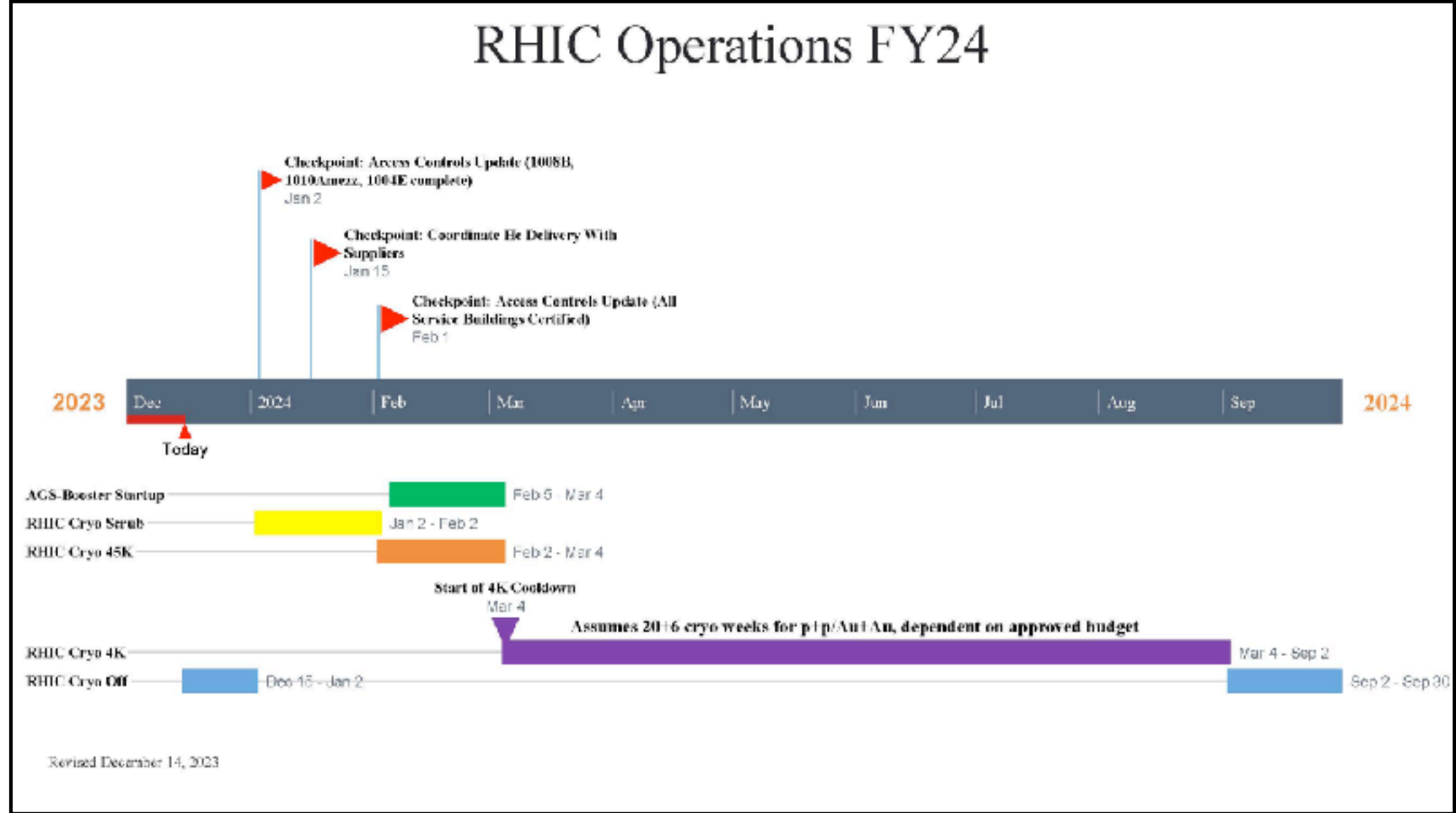
- Many TPC FEE had to be removed to access the HV cards, and we removed others that have an annoying (but not show-stopping) problem
  - Takao has taken the lead again in the rework being done at IO and re-testing in 1008
    - Steve, Damon, and Sal built a power supply rack capable of energizing a full sector of FEE in the rack room
  - Failed optical transceivers have been replaced (although we're short on QSFP's ordered in October)
- Upgraded cooling system should be more uniform and remove more of the heat from the FEE
  - **Flow improvements** Modifying all panels to increase flow by 30%; increased flow should help prevent air locking and flow balancing.
  - **Lower Temperature** Option to move off ECW. Two conventional chillers are up and running to remove heat from the system. This should allow us to bring the temp down to 15C at the detector cooling blocks (dew point permitting).
  - **Temperature monitoring** An RTD array is being installed on the FEE cooling blocks. 16 on each side. This will give us a better understanding of the flow in the system and allow us to balance the system properly.
- Line lasers
  - New mechanics and electronics under way
  - A tight race to get them working on the bench and then reinstalled
- The MJACK firmware need to be completed so we can reprogram all TPC FEE in hours instead of days
  - That requires all 24 Sort Out Boxes to be swapped out, modified, and tested





# News from sPHENIX: Long-term

[sPHENIX General meeting](#)



<https://www.rhichome.bnl.gov/RHIC/Runs/RhicProjections.pdf> [8 November 2023]

Possible modes for Run-24 are p+p at 100 GeV beam energy and Au+Au at 100 GeV/nucleon. 26 weeks of RHIC refrigerator operation in FY 2024 could be scheduled in the following way:

Cool-down from 50 K to 4 K	0.5 weeks	
Set-up mode 1 (p+p at 100 GeV)	2.0 weeks	(no dedicated time for experiments)
Ramp-up mode 1	0.5 weeks	(8 h/night for experiments)
Data taking mode 1	7.0 weeks	
Set-up mode 2 (Au+Au at 100 GeV/nucleon)	0.5 weeks	(no dedicated time for experiments)
Data taking mode 2 with further ramp-up	5.5 weeks	
Set-up mode 1 (p+p at 100 GeV)	0.5 weeks	(no dedicated time for experiments)
Data taking mode 1	9.0 weeks	
Controlled turn-off	0.5 week	

26 weeks assumes lowest of requested levels [20, 24, 28] + 6 carryover. Without a budget, nothing is guaranteed right now.

When the AuAu will occur is largely up to sPHENIX. This is just a placeholder option by C-AD.

Our BUP goal is pp 200 GeV with 45 pb<sup>-1</sup> sampled by triggers with |z| < 10 cm. That corresponds to approximately 75 pb<sup>-1</sup> of RHIC delivered collisions to sPHENIX (since we have our own uptime, etc.)

C-AD currently estimates 20 weeks of physics running to reach that goal with no improvements over Run-15. However, they are working to have a smaller beta\* and higher beam intensity above and beyond that.

1/4/24

4

[https://www.c-ad.bnl.gov/esfd/Scheduling\\_Physicist/Collider-Accelerator\\_Schedule.htm](https://www.c-ad.bnl.gov/esfd/Scheduling_Physicist/Collider-Accelerator_Schedule.htm)

2-person Watch shifts starting February 20, 2024 (driven by sPHENIX detector testing needs, e.g., cosmics)  
4-person Full shifts starting March 04, 2024 (mostly still driven by sPHENIX needs, and potential beam availability)

Best guess is beam around March 15, 2024, i.e., start of 4K, and then regular collisions around March 30, 2024.



What to expect in the first 28 days... [the unexpected]...

- Limited luminosity (maybe small number of bunches), zero crossing angle
- Shift to 2 mrad crossing angle, time in MBD, ZDC and commission MBD LL1
- Checking backgrounds in MVTX, slow turn on for tracking detectors (no zero suppression)
- Overnight running potentially with just ADC systems (EMCal, HCal, MBD, ZDC, sEPD) for commissioning selective triggers (photons, jets), also testing rate capabilities, multi-event buffering
- Daytime running with tracking as available (note very slow until zero suppressed)
- Special runs for determining/optimizing backgrounds and beam quality
- Need to treat some running periods as "physics quality" even if all detectors not yet available. Need good statistics to confirm trigger / calorimeter performance.
- ....

- Best guess is beam around March 15, 2024, i.e., start of 4K, and then regular collisions around March 30, 2024.
- When the AuAu will occur is largely up to sPHENIX.
- 2-person Watch shifts starting February 20, 2024.

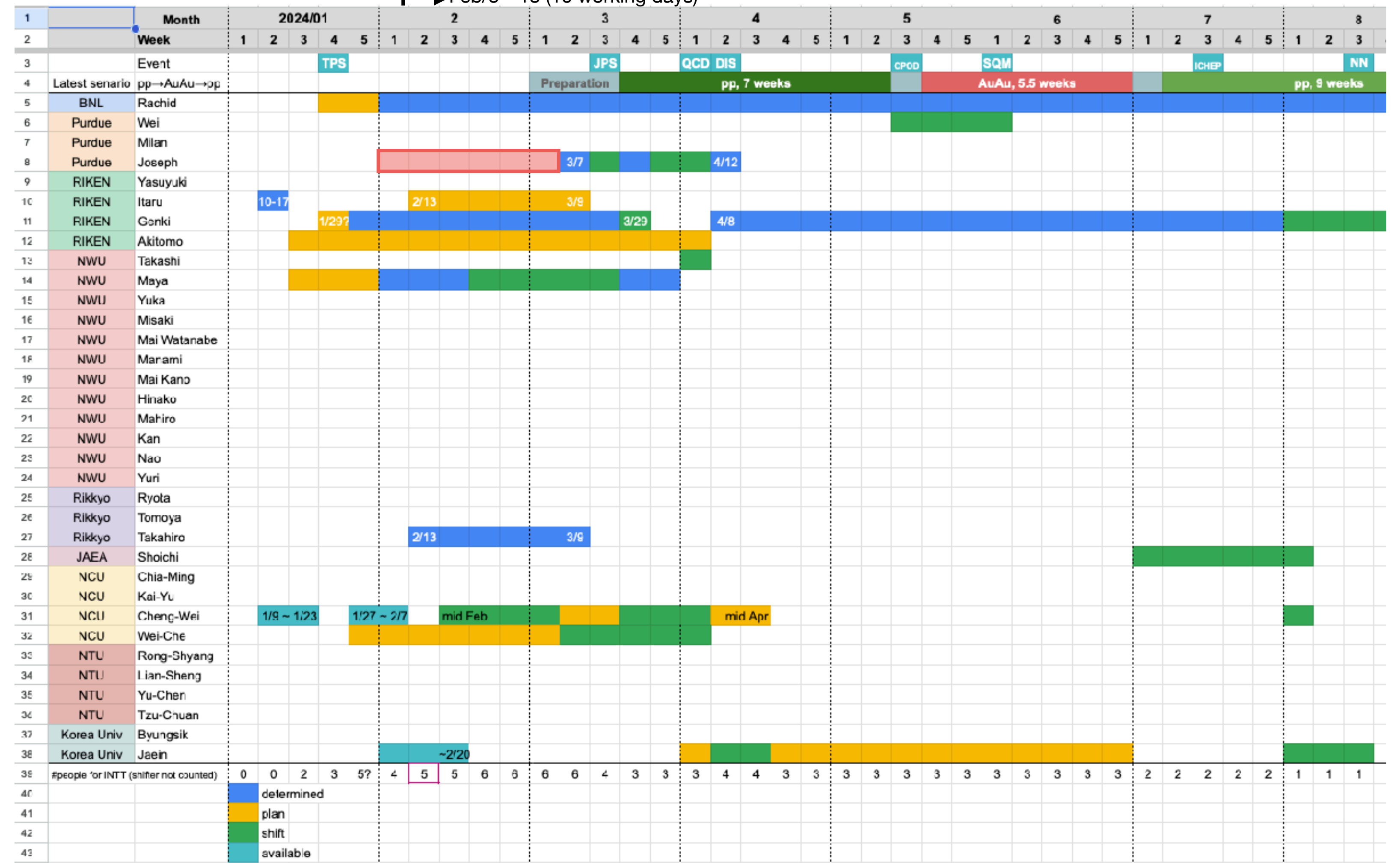


# Expected Schedule and Availability

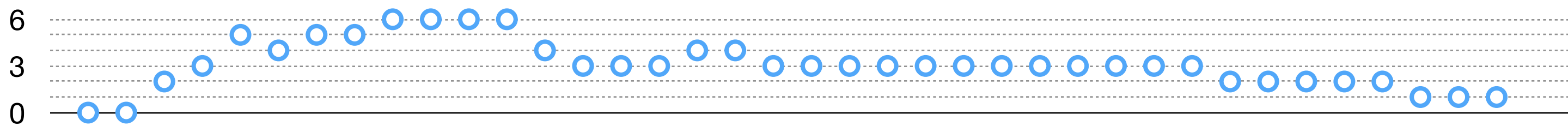
## ROC

reinstallation (S)

➡ Feb/5 – 18 (10 working days)



- Updates:
  - Itaru: Jan/10-17
  - Itaru & Takahiro: Feb/13—Mar/9?
  - Akitomo: Jan/23 — Mar/25
  - Genki: Jan/29?—Mar/30
  - Genki: Apr/8 — Oct
  - Joseph: Mar/7 — Apr/12  
He can come back in May.
  - Cheng-Wei: mid Feb — end of March
  - Jaein: early Feb, Apr — June?
  - Wei-Che: ???
  - Takashi: mid April for 3 months
  - Maya: — end of March
  - NWU students: under discussion  
Feb: no  
Mar: difficult
- Needs:
  - People at BNL from mid Apr





# Apartment

ROC  
reinstallation (S)  
Feb/5—18 (10 working days)

## BNL Apartment:

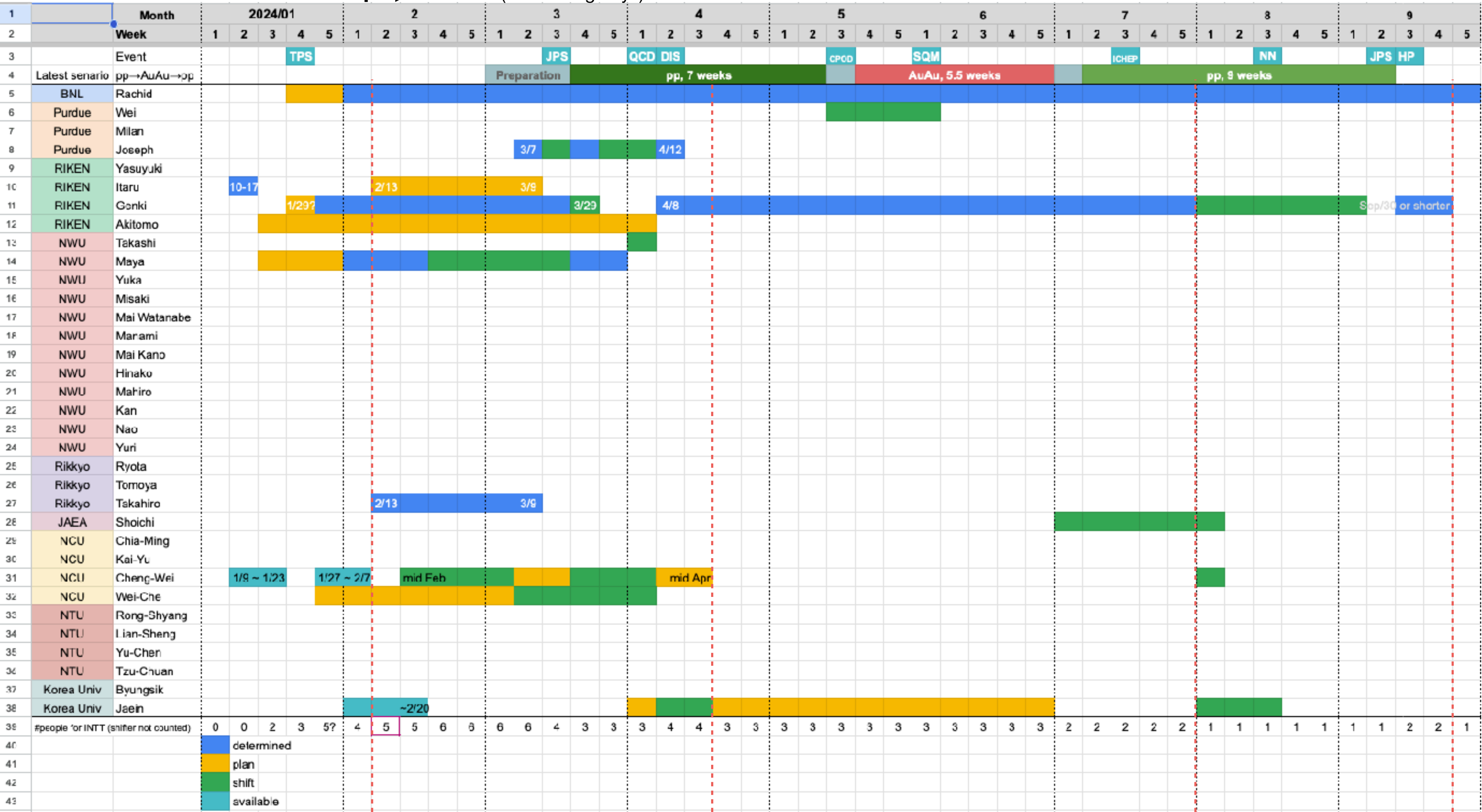
Reservations should be made **as soon as possible** when some students are staying.

- Feb/13 — Apr/15?  
4-bed  
Takahiro, Joseph, Cheng-Wei, Jaein
- June/01 — Sep/  
4-bed  
Joseph, Tomoya, Ryota, Takahiro, Cheng-Wei, Wei-Che, Jaein
- June/01 — Sep/  
3-bed  
Mai K, Hinako, Manami, Mahiro

## Rental car for students:

- Feb/ 2nd week — Apr 3rd week  
Drivers: Joseph, Cheng-Wei (, Jaein?)
- Aug — Sep  
Drivers: ???

If there is no objection, let's make reservations even if the schedule is not fixed.



BNL Apartment  
Rental car

