

Opening Remarks from the Steering Committee

BCS Review
Christoph Paus
MIT – June 3, 2026



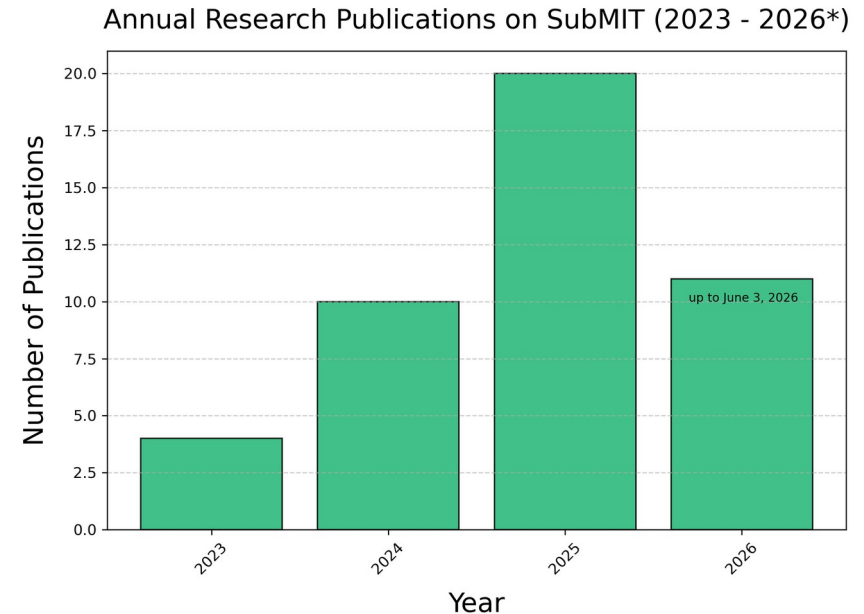
Goals for today

Review the Basic Computing Services (BCS)

- Provide a description of the BCS and its implementation
- Personnel and overall challenges
- *No focus on specific physics results**

Context BCS lives in

- MIT IS&T provide fundamental infrastructure
- ORCD office: addresses global MIT wide research computing
- MKI and LNS have separate computing support



* Physics research results will be available on request

Basic Computing Support

Task #1

Tasks #1 (and #2) were put in place by Department Head P. Fisher, 2021

- Starting June 15, 2021, implement a single login computing environment allowing Physics researchers to access heterogeneous high-performance resources. The implementation should include access to available high performance computing systems in the Department and affiliated labs that will be made available on a voluntary basis. The implementation should proceed in a timely fashion and aim to be available during Fall term. This first implementation will not be able to meet all the requirements of the Basic Service.

SubMIT opened for service on December 9, 2021

→ this is our 5th year in service

Structure of BCS

Steering Committee

Faculty led

Chair: C.Paus

Meeting ~ once a months

Users Group

Researcher led

D.Walter

J. Eysermans, M.D'Alfonso

Meeting ~ once a months

Project Team

Researcher led

D.Walter

J. Eysermans, M.D'Alfonso

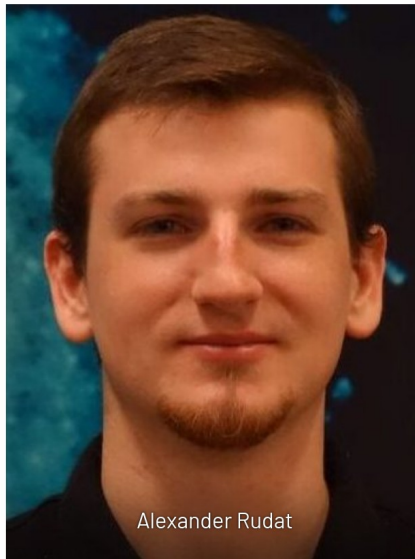
Meeting weekly

Functions

- **Steering:** oversight, budget and hiring, large design
- **Users group:** support forum, discussion of needs and dissemination of status and plans
- **Project team:** support, develop, monitor, maintain

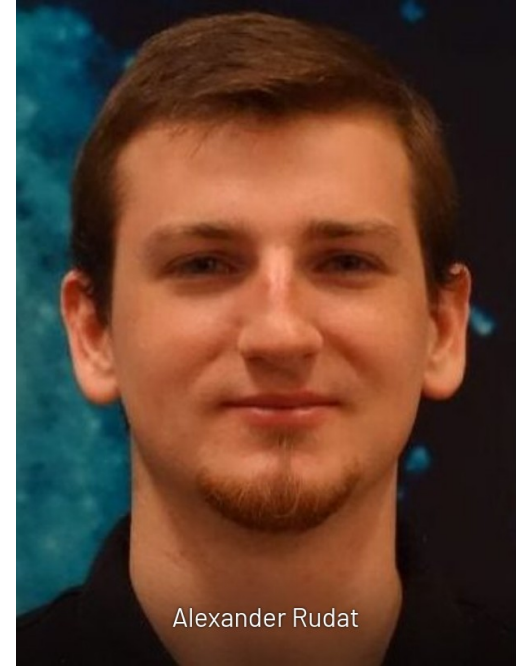
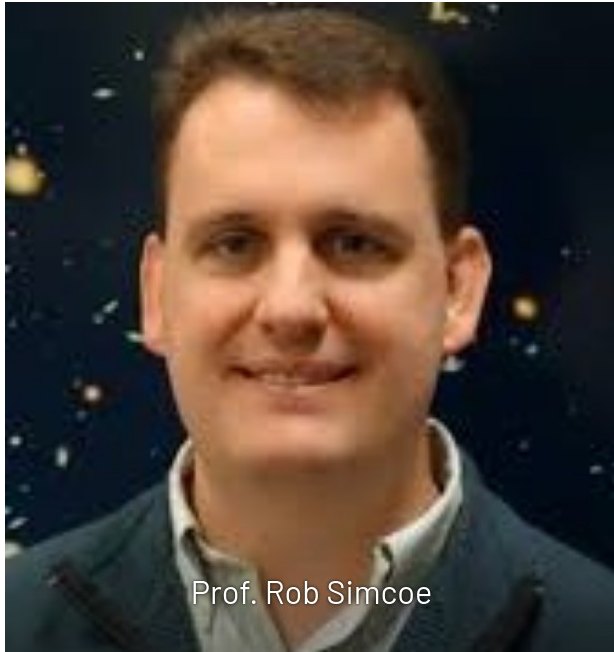
People

Steering Committee



Membership revisited on a yearly basis.

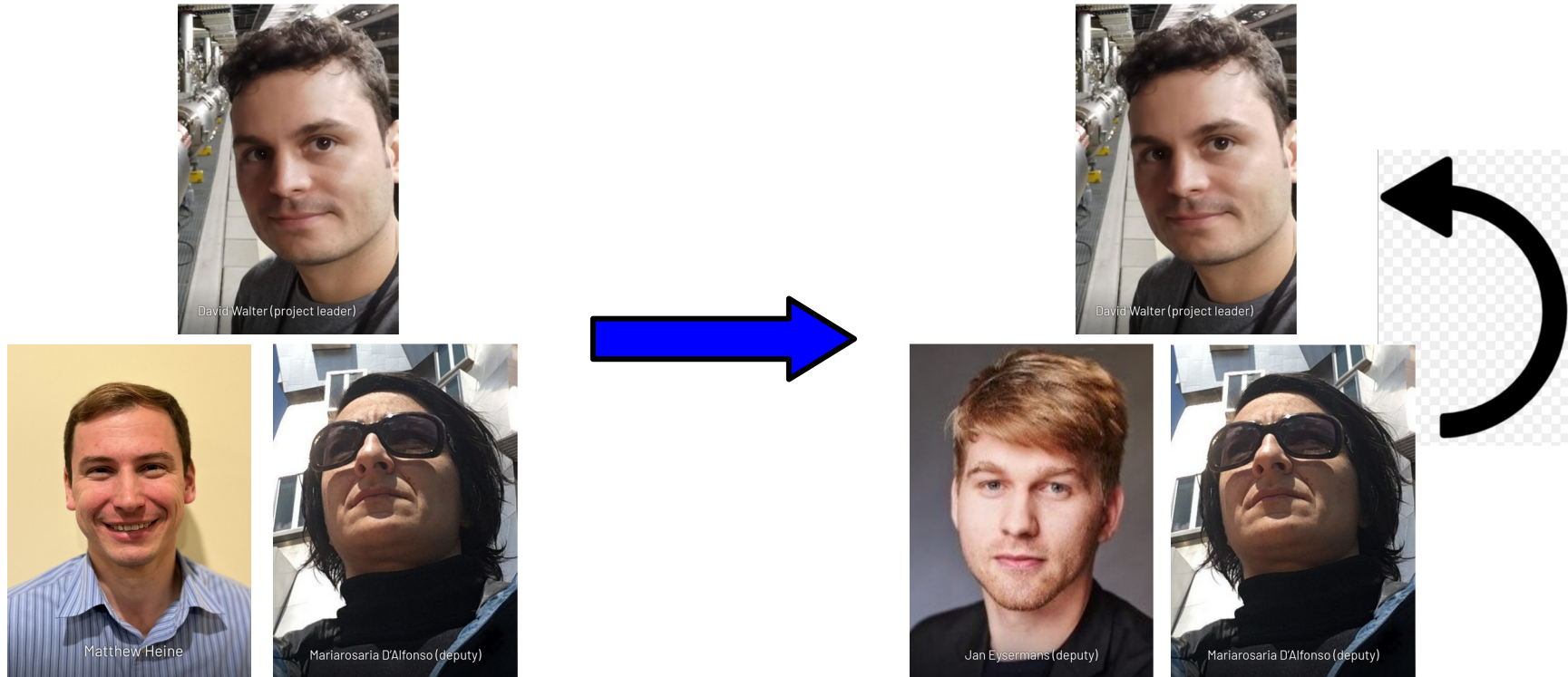
People transitions



Steering Committee update

- Rob Simcoe stepped back and Alexander Rudat joined (for MKI)
- Business has transitioned smoothly
- Rob will remain in contact for MKI related developments

People transitions

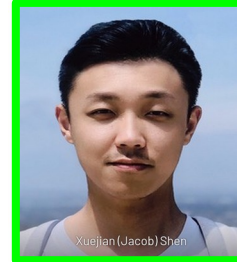
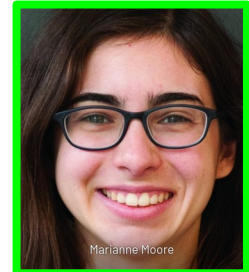
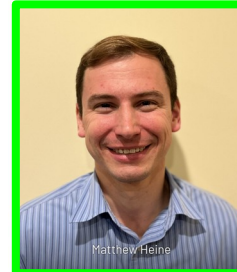
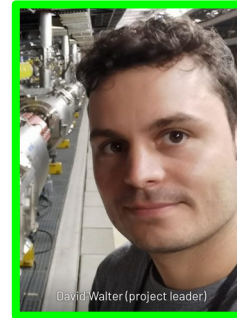


SubMIT project leadership

- Matthew Heine stepped back from deputy position; remains as active project team member; thank you for excellent leadership!
- Jan Eysermans took over: fresh look as Computing Operations expert
- Transition back to single deputy in the works: David is planning to step down, Mariarosaria will take over

People

Users Group

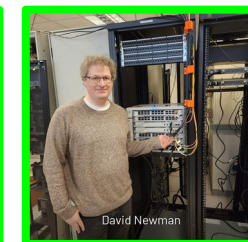


Constantly looking for new members !



2.0 FTE Project team
0.75 FTE Hosting team
Paid by the Physics Department

SubMIT Hosting team



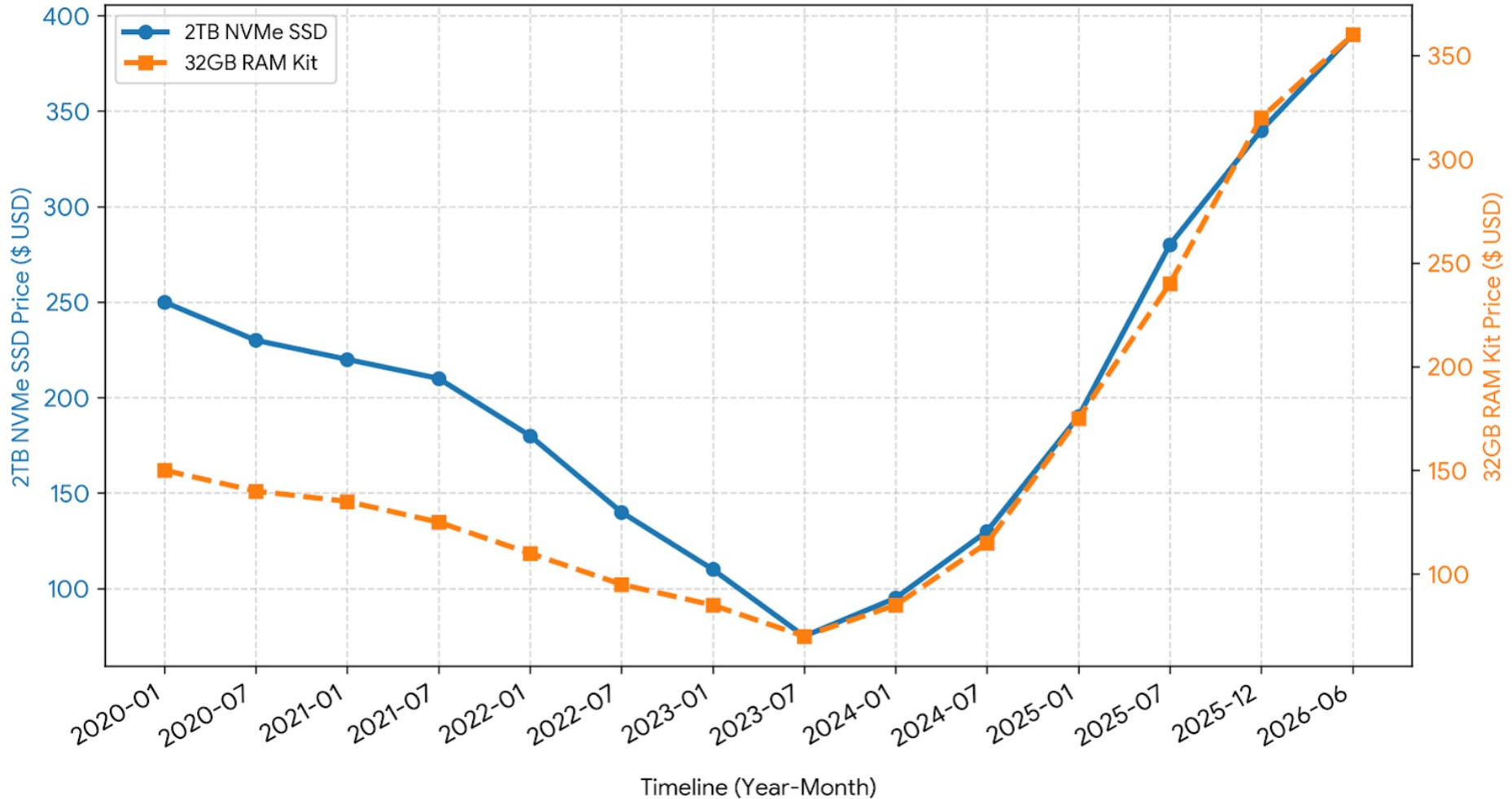
Operating Concept for BCS

Transitions are critical

- SubMIT project built on idea that people join, learn from active team, contribute for limited time, and then move on
- Preferred: postdocs and graduate students intensely involved in usage of SubMIT for physics analysis (cost)
- Last years have proven that the concept of temporary appointments is effective
- People moving on from SubMIT report positive effects of their experience in high level computing organization
- Continuity intrinsic in team, also through Steering Committee

Computing Hardware Cost

Computing Hardware Price Trends (2020 - 2026)
From Pandemic Shortages to the AI-Driven "RAMpocalypse"



Computing Hardware Cost

Hardware cost development

- **Generally: Computing hardware costs have surged over the past years**
 - Entry-level and mainstream PCs are not massively affected
 - High-bandwidth memory for AI data centers caused severe global shortage of standard memory (DRAM) and solid state disks (NVMe) storage
- **Bubble? When is the cost coming back to normal?**
 - Based on the latest data from major semiconductor analysts like TrendForce and Gartner, the common industry expectation is that prices for consumer NVMe storage and memory will not return to reasonable levels until mid-to-late 2027, with full normalization pushed into 2028.

Impact on SubMIT

- Right now system is operating well, all critical purchases were done at reasonable prices
- Run some services beyond warranty ...
- We can wait for some time and deal with user requests, but need to keep a close eye

Some Organization

Feedback for this review

- Please, interrupt and ask questions during presentations, they will be recorded in the minutes
- Shared document available for written comments/questions:
link for minutes (link last year)

Answers to questions

- Recorded questions will be answered in writing and should be available a week after the review

Thank you for taking the time!

We appreciate the strong support of the department and hope to convince you that this project continues to be a big asset to the department.