

Opening Remarks from the Steering Committee

BCS Review
Christoph Paus
MIT, July 18, 2023



Goals for today

Review the Basic Computing Services (BCS)

- Provide a description of the BCS and its implementation
- Summarize accomplishments and plans
- *No focus on specific physics results**

BCS lives in a context

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

Provide summary information

- Deepto needs material to make a case for the BCS during the review of the visiting committee
- Summary of the review needs to provide that documentation

* Physics research results will be added for the visiting committee

Basic Computing Support

Task #1

Tasks #1 (and #2) were put in place by Dep. 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

Sidebar: Task #2 ‘conclusion’

Peer Comparisons

Survey & interviews

- Interviews with physics faculty at a range of institutions to assess their access to computing resources and satisfaction
- Core metrics
 - Institutional CPU cores per faculty (GPUs also relevant)
 - HPC support (including computational program scientists) staff/faculty
- Faculty satisfaction with services
 - Correlates with these metrics
- NB: top institutions have NSF/DOE national supercomputing centers on campus

Institution	CPU cores per faculty	Faculty per HPC Staff
U Texas/TACC	258	~30
Berkeley/LBL	235	~20
ETH Zürich	132	~20
Max Planck	67	~40
Harvard	55	~35
Princeton	47	~20
Caltech	43	~40
MIT+Lincoln (MIT only)	34 (7)	~100
Stanford & Chicago	19	~100

MIT languishes far behind

Structure of BCS

Steering Committee
Faculty led

Chair: C.Paus

Meeting ~ once a months

Users Group
Researcher led

J.Bendavid, M.Heine

Meeting ~ once a months

Project Team
Researcher led

J.Bendavid, M.Heine

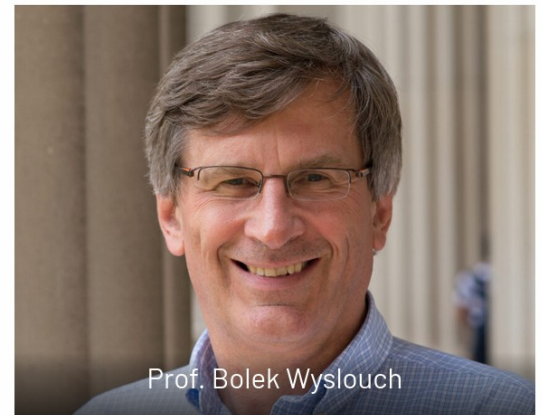
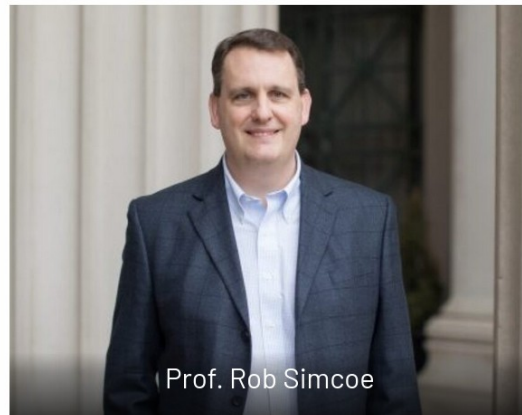
Meeting weekly

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

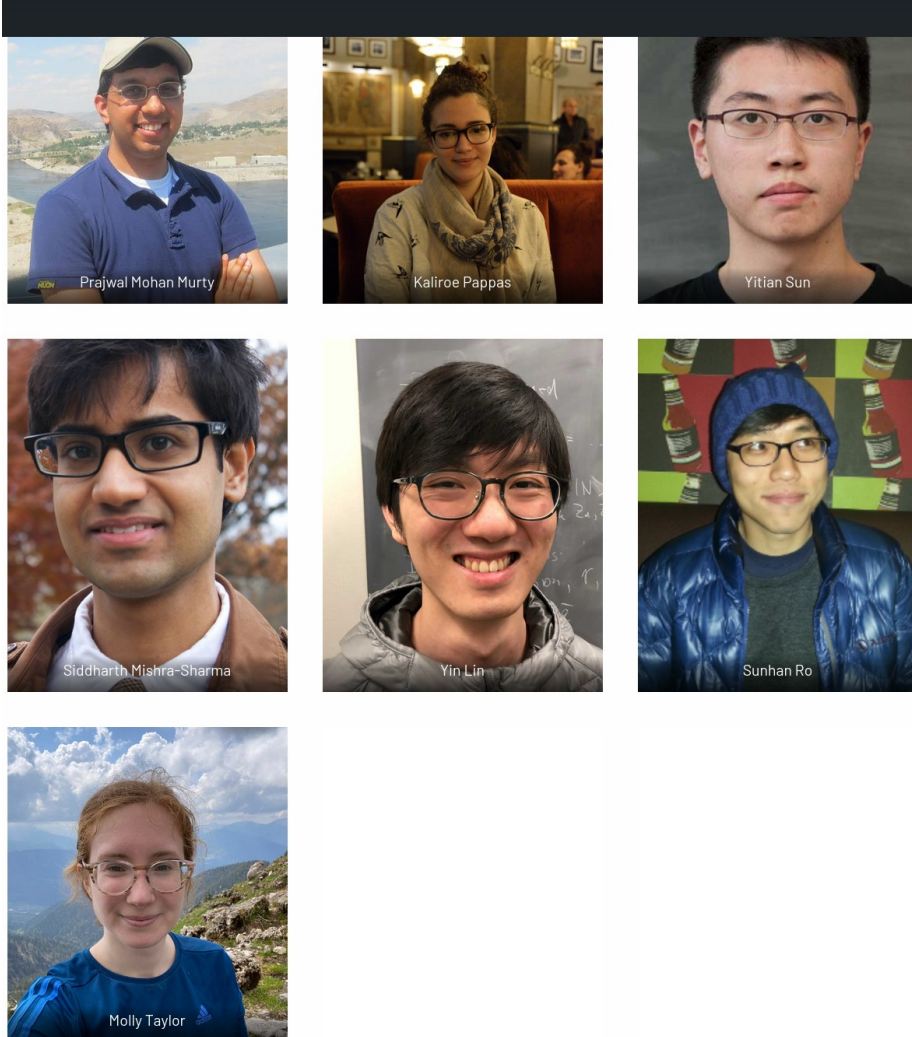
People

Steering Committee

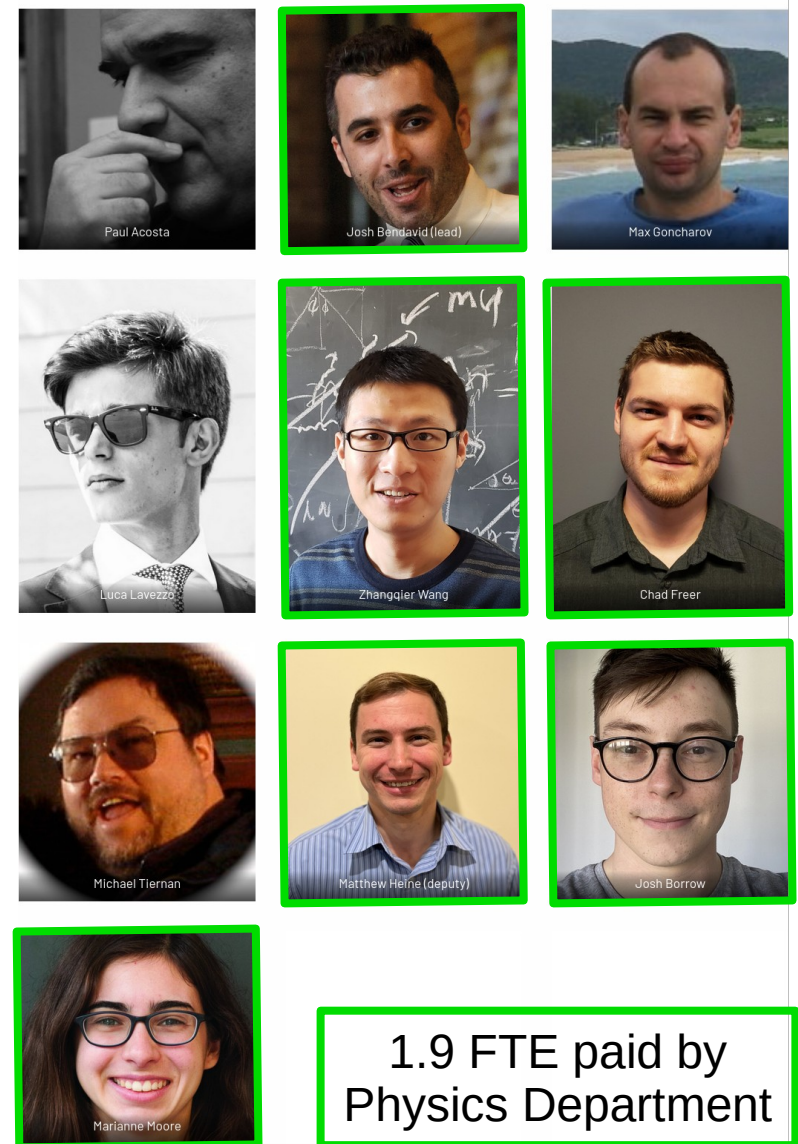


People

Users Group



Project Team



Some Organization

Feedback for this review

- We already received written questions before the review
- Please, interrupt and ask questions during presentations, they will be recorded in the minutes
- Shared document available for written comments/questions:
[shared document link](#)

Answers to questions

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

Thank you for taking the time, we appreciate the strong support of the department and hope we can convince you this project is a big asset to the department.