



U.S. DEPARTMENT OF
ENERGY

Office of
Science



Program update

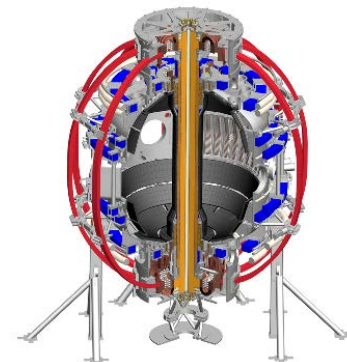
J. Menard

for the NSTX-U Team

NSTX-U Team Meeting

PPPL B318

July 29, 2016



Thank you for your hard work!

- We will work hard to get NSTX-U operational again as quickly as feasible – but safely, thoroughly, precisely
- Excellent progress toward our long-term science goals
 - Recovered NSTX-level of performance in ~2 months, accessed longer pulses, higher fields, (re)discovered L-mode
 - Reconstructions, shape & plasma control already very mature
 - Error fields identified, corrected (much more to do...)
 - New discoveries with 2nd NBI – GAE suppression, counter TAE excitation, investigating FI confinement vs. voltage
 - Viable CHERS with BL2, real-time / hi-time-res rotation
 - New (world-leading) surface science capabilities with MAPP
 - Poised for new physics with IGI and MGI + many more...

Comments on milestones / research goals

- H-mode confinement, pedestal, SOL vs. current and field research incomplete (not really started)
 - This milestone will be carried forward
- Similarly, fast-ion confinement & AE vs. tangency radius needs MSE + run-time
 - This milestone will also be carried forward
- **Need sufficient time for scenario development**
- Will support 2017 JRT on dissipative divertors
 - XPs & diagnostics supporting this JRT will be high priority
 - Participate more in DIII-D if NSTX-U does not operate in FY17
- Need to assess scenario, control, and diagnostic readiness for high-Z tile installation
 - Rajesh will lead Boundary SG discussions on high-Z, JRT

When is next research forum?

What about XPs?

- Core and Scenarios experimental plan not as substantially impacted by when we resume operations
- Boundary Science plan will need to be updated – need experimental proposals to support JRT
 - Also high-Z decision will impact plan substantially
 - Could consider mini-forum (1-2 days?) for boundary alone
- Broader forum if NSTX-U ops significantly delayed
- Prefer to get more info on cause of PF1AU failure and impact on FY17 run plan before scheduling forum
 - Any forum should not be too far in advance of next operations
- **In ~1 month: Results Review, Run Assessment**

Thanks again for all your contributions!

Questions?