**Programmatic-level questions:**

1. What are the MHD thrusts/goals for the 5 year plan, and how do these thrusts motivate the implementation of the NCC coils?
2. Do we have a/the physics basis for explaining RMP ELM suppression? If not, what can NSTX-U add – both with and without NCC?
3. How do recent and planned results from DIII-D, MAST, AUG, KSTAR impact the motivation/need for NCC in NSTX-U in support of ITER, FNSF, Demo? What if anything makes NSTX-U + NCC unique?
   1. ASDEX will have 8 coils – won’t have smooth rotation of n=3. Also issues with not getting ELM mitigation at low collisionality?
   2. MAST results show n=4-6 better for ELM reduction/mitigation than for n=3
      1. But MAST-U may not have this capability due to PF coil/NBI interferences

**Physics/Technical questions:**

1. Are there any NSTX-U or FNSF/Demo-style equilibria where n > 1 RWMs could be a problem, for which having higher-n coil capability would be useful/essential for RWM control?
   1. Get info from Stefan’s stability analysis of NSTX-U scenarios using TRANSP?
2. How much flexibility in rotation/rotation profile control (and therefore possible RWM/NTM control) do NCC coils provide relative to mid-plane only?
   1. Better ability to damp rotation to low value (using n=2 or 3 NTV) and do RWM feedback control using n=1, etc?
   2. Ability to vary local rotation shear to impact NTM stability?
   3. Impact on pedestal transport through rotation shear (in addition to RMP)?
   4. Reduce the resonant damping relative to non-resonant to better avoid locked modes while damping the flow?
   5. Ability to go to high-n for physics validation studies of plasma equilibrium and transport response vs. n
3. How much flexibility/capability in RMP does the NCC coil set provide relative to mid-plane only?
   1. See Evans results – ACTION: need to get NSTX-U equilibria with q-scan to T. Evans
   2. See also results from JK Park
   3. Should even consider getting Todd to write or at least review the NSTX-U 5 year plan text covering the NCC RMP physics
   4. What is projected impact of lower nu\* in NSTX-U on RMP physics?
   5. For ITER – pump-out of density drops pressure and stabilizes ELMs – so need to find way of getting density up. What causes pumpout? How to optimize to keep pressure high while still suppressing ELMs

**Additional comments:**

1. No demonstration yet from any machine of RMP ELM control in (nearly) fully non-inductive and high beta (i.e. above no-wall limit) scenarios as needed for ITER AT, advanced FNSF, or Demo
2. Demonstration of ability get CD from all co-NBI AND ability to control rotation with NTV and NBI (for example to stably access very low rotation) could be unique in the world – especially relevant to Demo
   1. Todd: Possible to get ELM suppression on DIII-D in hybrid scenarios in a few instances, and with expanded mode spectrum from new coils could probably do better.