

# NSTX-U strongly supporting advanced predictive capability, ITER, PMI solutions, and next-step STs

- Very productive first year of operations on NSTX-U
  - *Rapid H-mode access, scenario development, error field correction*
  - *Surpassed NSTX maximum magnetic field and pulse-duration*
  - *New fast-ion physics with 2<sup>nd</sup> NBI – GAE stabilization, counter TAE*
  - *Commissioned new advanced PMI diagnostics – MAPP*
- Advancing predictive capability for core, edge, PMI
  - *Developing reduced models for RWM, understanding of halo rotation*
  - *Global ion-scale turbulence (GTS),  $\nabla n$  ETG stabilization*
  - *GAE stabilization from 2<sup>nd</sup> NBI consistent with simulation (HYM)*
  - *Exploring SOL widths, advanced divertor interactions with 3D fields*
- Developed attractive next-step ST-FNSF/Pilot Plant
- Aim to resume NSTX-U physics operation in ~1+ years