Abstract Submitted
for the DPP19 Meeting of
The American Physical Society

DIII-D Program Overview and Long-Range Research Plans[1]
DAVID HILL, General Atomics, DIII-D TEAM — DIII-D is now back into operation following a one-year Long Torus Opening which provided significant upgrades to the facility, including installing a co-counter toroidally steerable off-axis beamline, top-launch ECH system, and realignment of the upper Small Angle Slot divertor, along with significant diagnostic improvements. Experiments will continue up to a short vent in December to install a 1MW helicon antenna for off-axis current drive experiments in FY20, as part of a research campaign aimed at high $_N$ steady-state performance with broad current profiles. Significant run time is allocated to disruption mitigation, including evaluation of shell pellets and a disruption-free protocol. Divertor experiments are evaluating the role of flows and drifts in detachment and a core-edge task force is addressing the physics of the pedestal and its connection to divertor improvements. An isotope mass campaign will address topics related to initial ITER operation in hydrogen. Highlights from recent operation, research plans, and further facility enhancements will be discussed.

[1]Supported by the US DOE under DE-FC02-04ER54698.

David Hill
General Atomics

Date submitted: 03 Jul 2019 Electronic form version 1.4