



Exceptional service in the national interest

Pacific Operational Science and Technology Conference: “Faster Together, Accelerating the S&T Community to the Speed of Innovation”



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Laboratories Director
Sandia National Laboratories

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SANDIA IS A FEDERALLY FUNDED RESEARCH AND
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FFRDCs are long-term strategic partners
to the federal government, operating in the
public interest with objectivity and
independence and maintaining core
competencies in missions of national
significance

OUR FUNDING AND WORKFORCE ARE ROBUST



ESTIMATED FY22 BUDGET **\$4.2B**



FY21 TOTAL LAB
EXPENDITURES
\$3,902,853,000



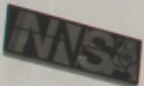
14,920 EMPLOYEES

Sandia
National
Laboratories

Managed for DOE by
National Technology and
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A Honeywell Company



United States
Department of Energy



National Nuclear
Security Administration

SEVEN ACAT-1 PROGRAMS - MORE WORK AND EXPECTATIONS THAN EVER BEFORE - MUST FIND WAYS TO GO FASTER



Mk21 Arming & Fuzing Assembly



W88 Alteration (ALT) 370



Mobile Guardian Transporter



W80-4 Life Extension Program (LEP)



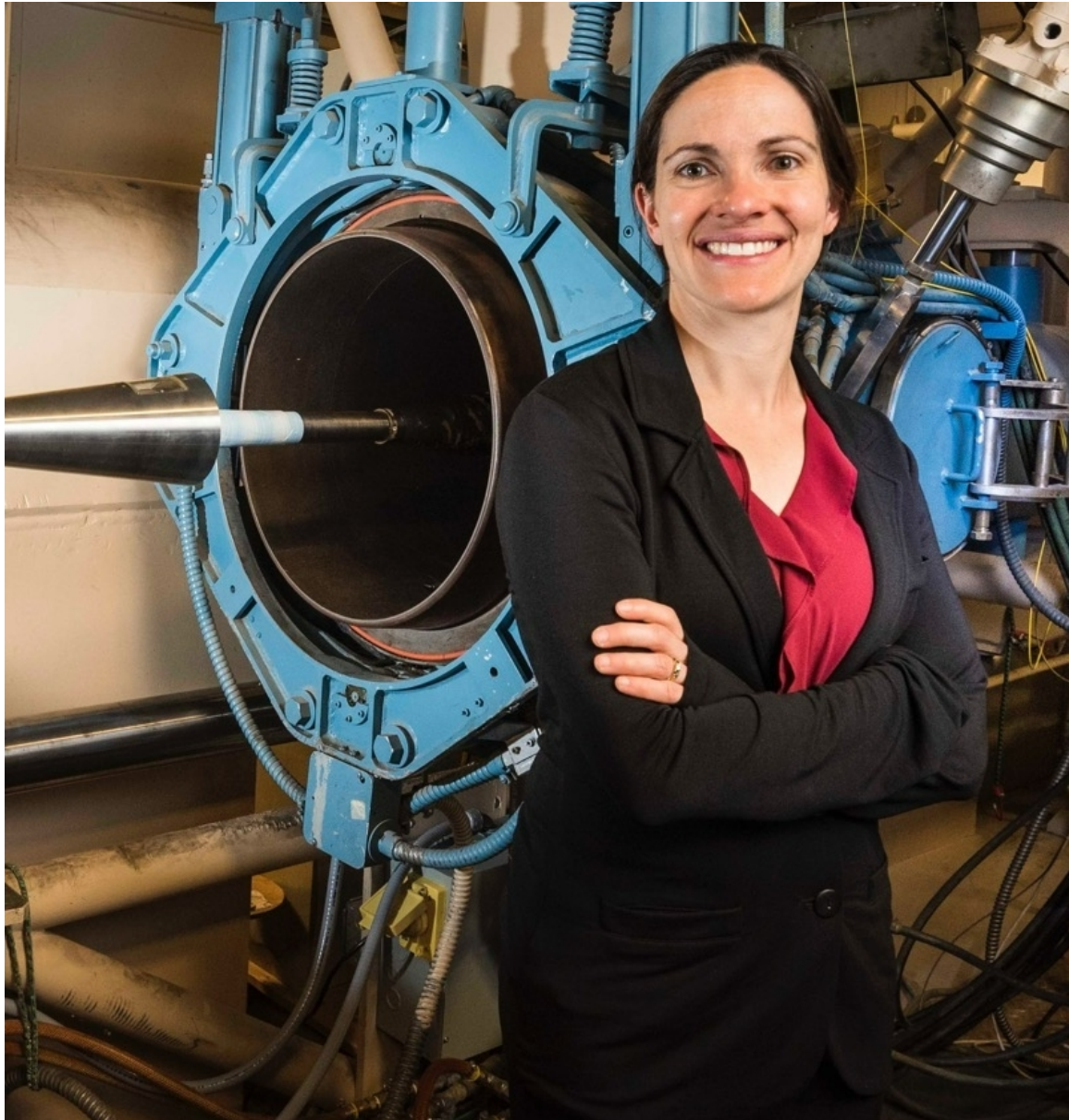
B61-12 Life Extension Program

W87-1 Modification Program

W93 Program



MOVING FASTER: HERE'S WHAT WE'RE DOING



PROJECT GOAL

Create dynamic controls ground-test capability for vehicle performance characterization

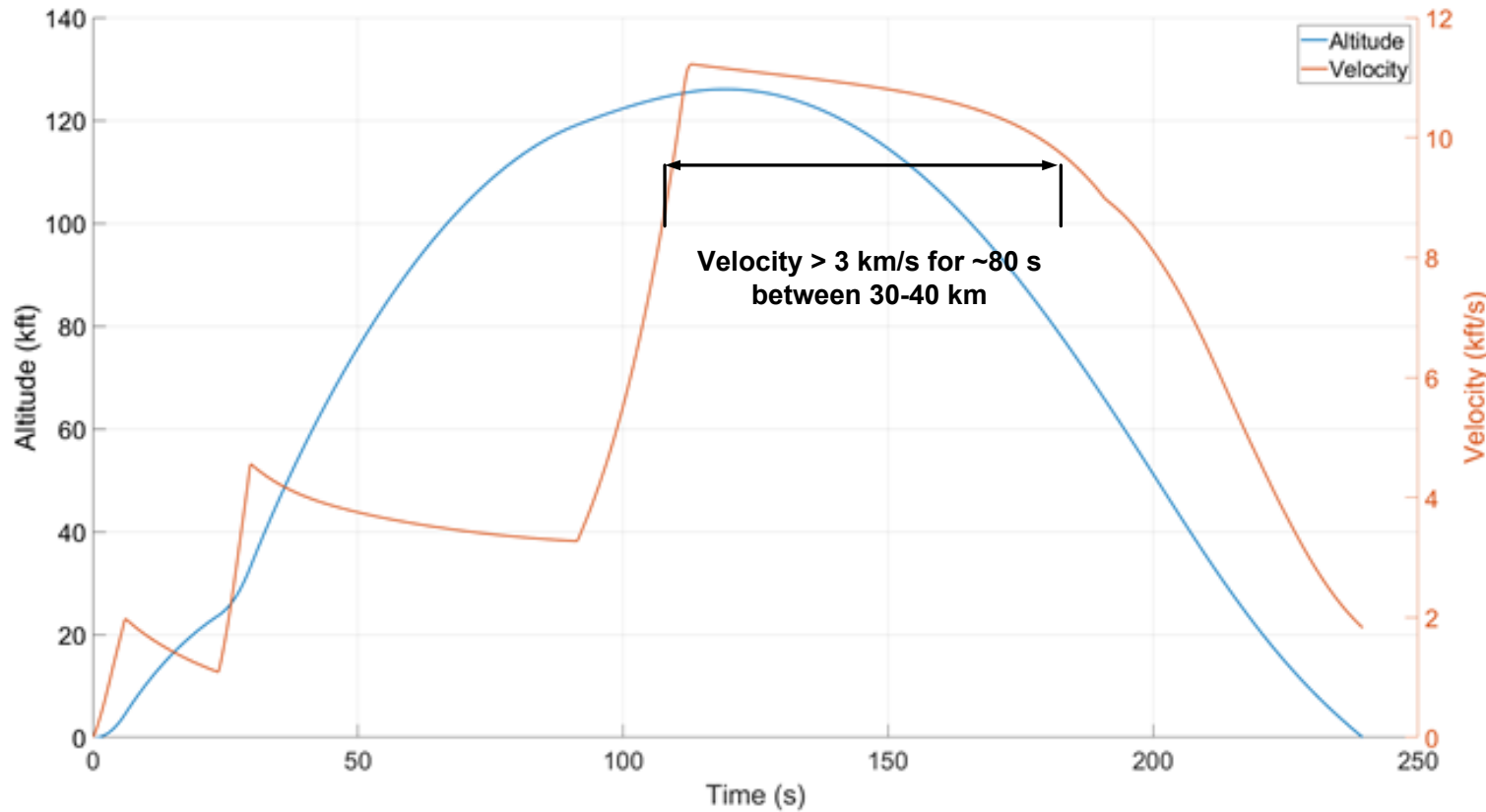
MISSION IMPACT

Provide confidence in and performance of control motion planning algorithms. Working with academic partners to evaluate maneuvers to develop onboard library.

NEW CAPABILITY

Successfully demonstrated control in-the-loop hypersonic wind tunnel test

H4H TRAJECTORY DETAILS: *Depressed Trajectory*



10X reduction in apogee between H4H Lofted and Depressed trajectory achieves representative hypersonic glide conditions useful to advancing technology maturation efforts. Trajectories tailorable to meet specific needs.



Executed successful **High Operations Tempo** for Hypersonics flight campaign of precision sounding rockets from Kauai Test Facility & NASA Wallops Flight Facility, demonstrating advanced hypersonic technologies, capabilities and prototype systems in a realistic operating

MOVING FASTER: HERE'S WHAT WE'RE DOING

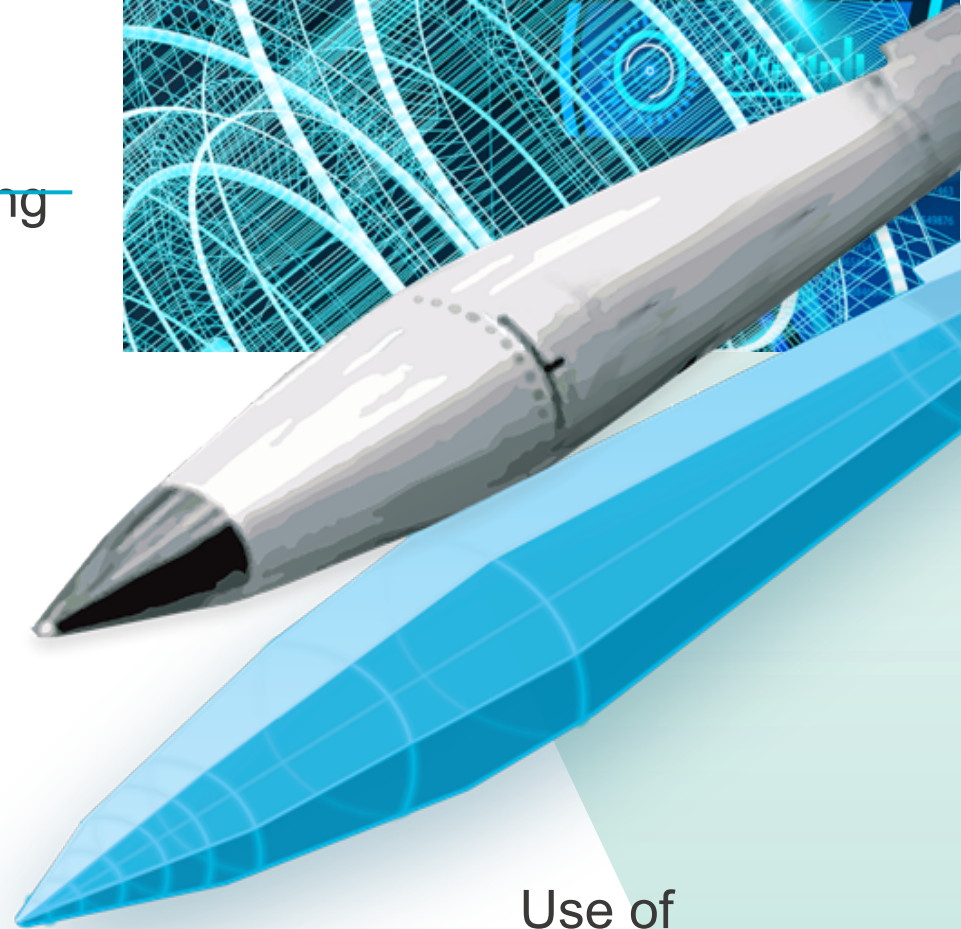
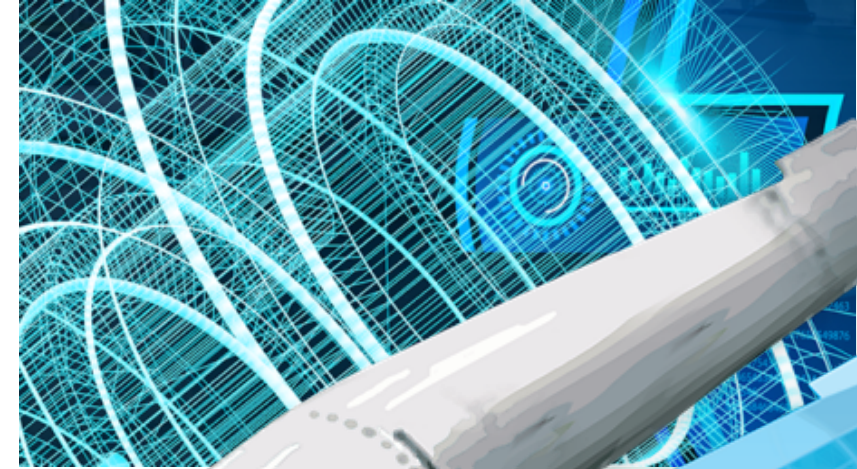
Advanced
Manufacturing

DIGITAL
EXPLORATION

Use of
Models-
based
Systems
Engineering

DIGITAL
PROTOTYPE

DIGITAL
TWIN



Use of
Digital
Engineering

MOVING FASTER IN NUCLEAR DETERRENCE

Today's qualification process is **well-understood and trusted**, but also is very iterative and hardware-centric

Advancements in qualification are part of a larger effort to **accelerate overall development time** to allow our nuclear deterrent to be responsive to emerging national threats

Qualification improvements necessary to **maintain an agile and responsive nuclear deterrent** require increasing product confidence by accelerating our knowledge basis and rapidly minimizing our uncertainty

Activities are underway to **make improvements and achieve advancements** in processes, capabilities and systems to accelerate qualification



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