



Leidos leads Innovation in Hypersonics & Microelectronics

Purdue@Westgate First Tuesday

Ashley Brawner, Director of Advanced Programs & Initiatives
Tuesday, Oct. 3, 2023 | 4-6 P.M. | Westgate Academy



About Leidos

KEY STATISTICS



45K
EMPLOYEES
WORLDWIDE

WORKFORCE



23% --- **24.1K** --- **17%**
TOP SECRET AND ABOVE CLEARED EMPLOYEES SECRET

Operation MVP is our company-wide initiative to hire, train, and support returning veterans.



19%
MILITARY VETERANS

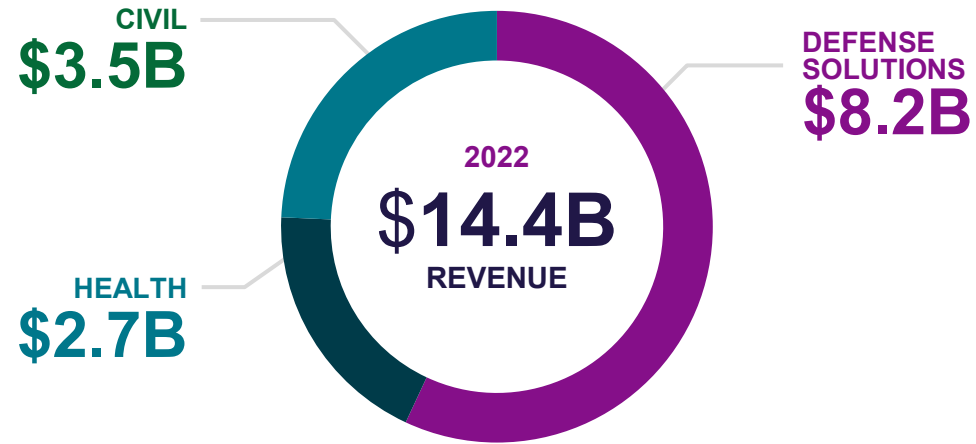


1.2K
PhDs



10.2K
MASTER'S DEGREES

MARKETS



Our business is aligned into three reportable segments (Defense Solutions, Civil and Health). Included in our Defense Solutions segment are the defense and intelligence markets, which are economically similar in nature.

HONORS

FORTUNE
500

2023 **WORLD'S MOST ETHICAL COMPANIES**
ETHISPHERE
6-TIME HONOREE



MARQUEE CUSTOMERS

- ▶ Department of Defense
- ▶ Department of Energy
- ▶ Department of Homeland Security
- ▶ Department of Health and Human Services
- ▶ NASA
- ▶ Department of Veterans Affairs
- ▶ Department of Transportation
- ▶ National Intelligence Community
- ▶ National Cancer Institute, NIH

ENVIRONMENTAL, SOCIAL, AND GOVERNANCE



CULTIVATE INCLUSION



ADVANCE ENVIRONMENTAL SUSTAINABILITY



PROMOTE HEALTHIER LIVES

Dynetics

Dynetics is the applied research and technology accelerator for Leidos.

HYPERSONICS

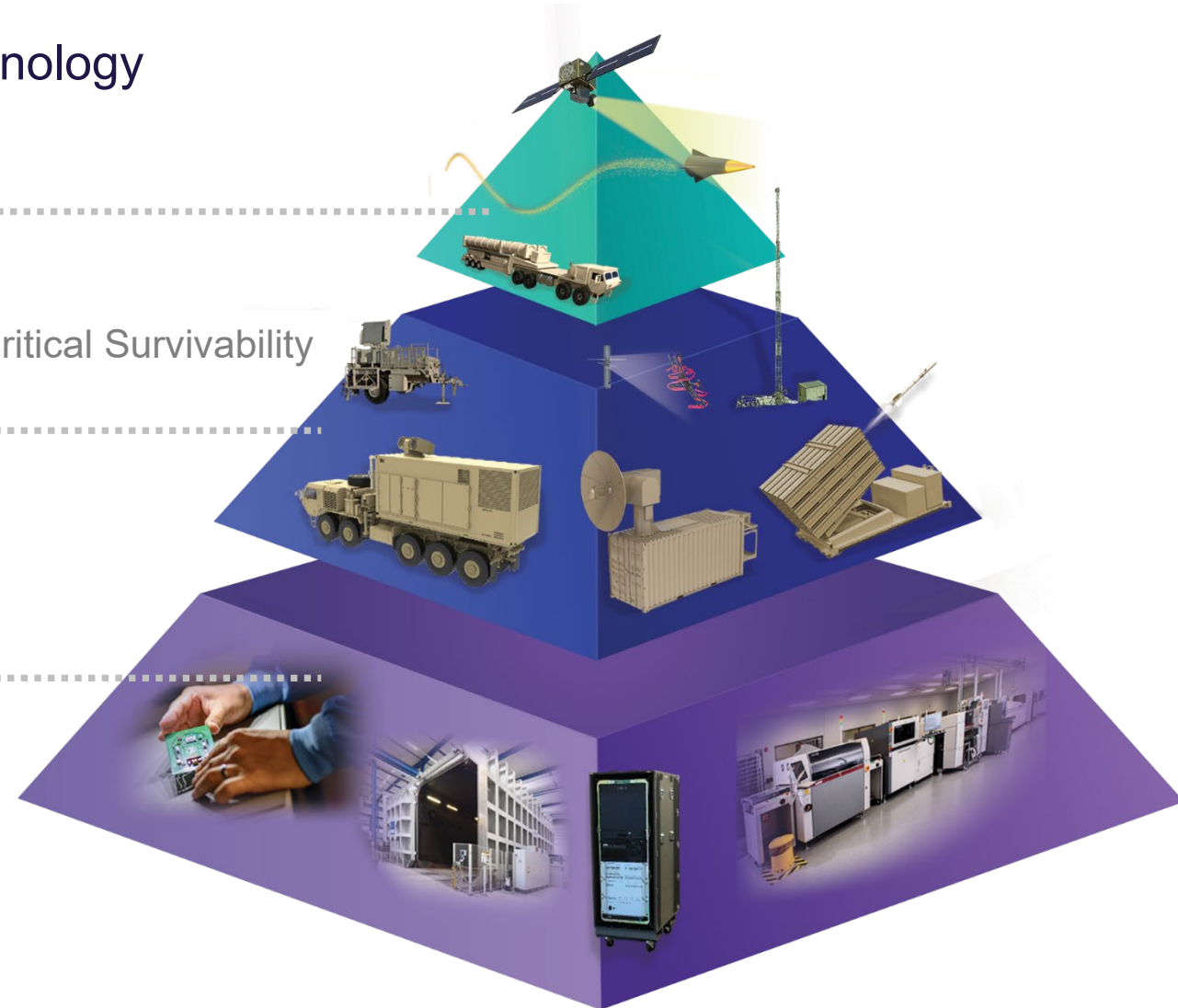
Offensive & Defensive Emergent Capability; Time-Critical Survivability

FORCE PROTECTION

Defend Our Forces & Key Assets

FOUNDATIONAL CAPABILITIES & TECHNOLOGIES

Foundational Crosscutting Innovation for Competitive Advantage



Dynetics Innovations

Tactical Weapons

Lethal Miniature Aerial Missile System



Hypersonics Systems

Common-Hypersonic Glide Body

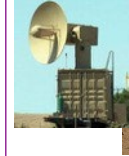


Launcher for the U.S. Army System



Integrated Force Protection

Directed Energy



Enduring Shield



Mobile Force Protection (MFP)

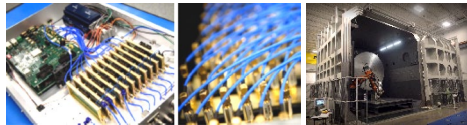


Sensors

Cognitive Electronic Warfare



Engineering/Technical Services and Prototyping



- ▶ Rapid prototyping
- ▶ Advanced manufacturing
- ▶ Classified mechanical and microelectronics design and manufacturing

Delivering complex systems through innovation and technology differentiation at speed and scale – with agility and security

Customer Relationships and Trust

Staff Quality

Agility

Domain Knowledge

Collaboration

Innovation

Responsive Capability



Overhead Persistent Infrared Systems

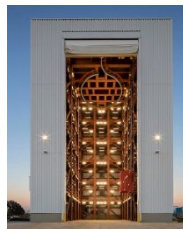


Human Space Exploration

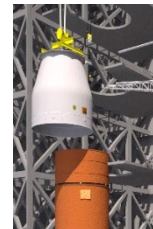
Space Launch System (SLS)



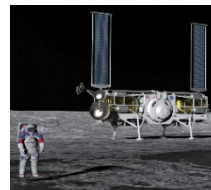
Test Stand



Universal Stage Adapter (USA)



Dynetics Human Landing System (HLS)



Autonomous Systems

Gremlins



SKYBORG Design Agent



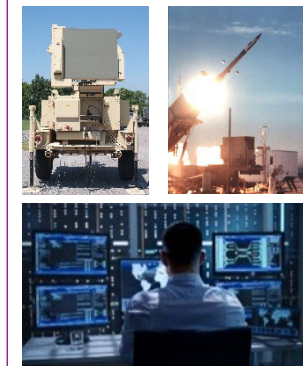
DARPA ACE



Cyber-Physical Systems

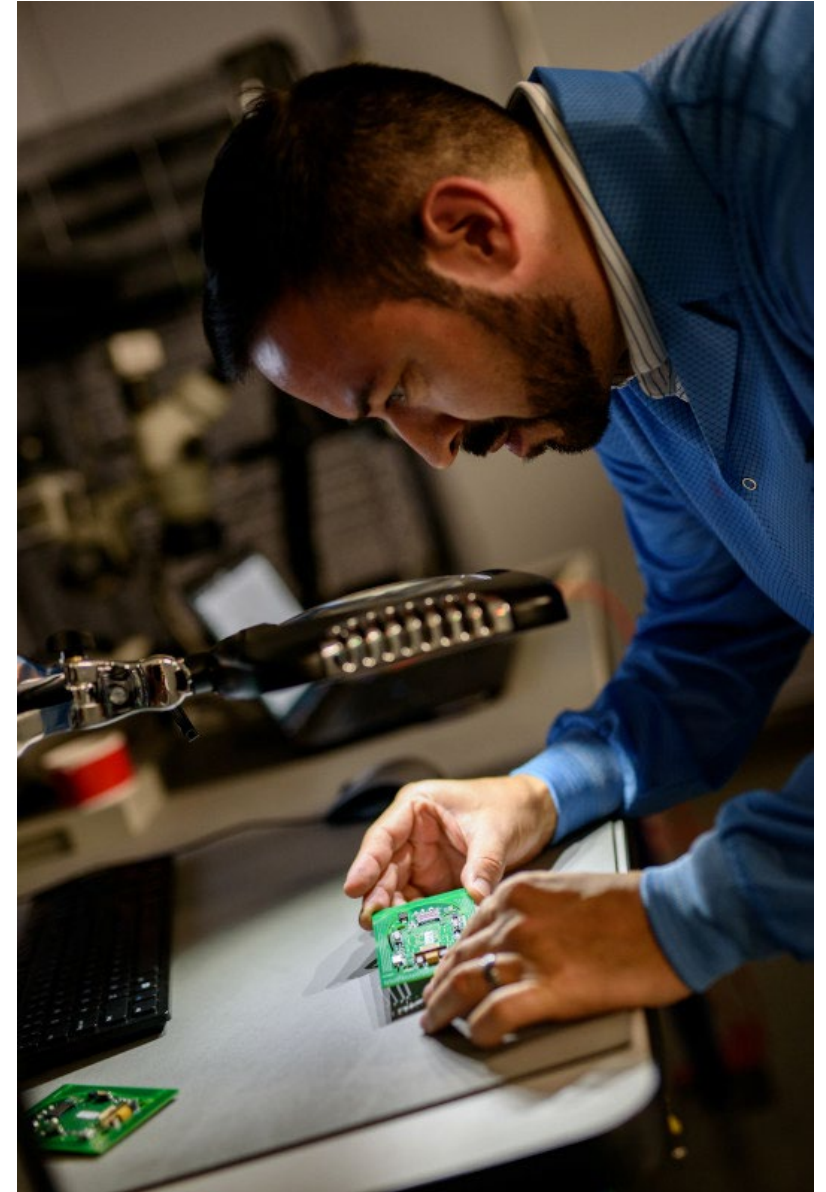
Offensive and Defensive Capabilities for Sensors and Platforms

- ▶ Cyber-electromagnetic activities
- ▶ Threat emulators



What are Microelectronics?

- ▶ Microelectronic devices – such as the microchips in computers and cell phones – process and store information.
- ▶ They are used by virtually every industry sector.
- ▶ The building block of any microelectronic is the transistor.
- ▶ As transistors have gotten smaller, computers that once occupied an entire room can fit in the palm of our hands or on our wrists.
- ▶ Across all sectors of the economy, there is an urgent need for radically new forms of microelectronics that can collect and analyze unprecedented volumes of data faster than ever before.
- ▶ The biggest challenge in microelectronics is that the size of today's transistors in supercomputers has shrunk from a millionth to a billionth of a meter.



Our Microelectronics Work

- ▶ Leidos provides a family of avionics products including:
 - Power systems
 - Flight termination systems
 - Semi-custom telemetry solutions
 - Flight recorders
 - Ground station support and services
 - Time, Space, and Position Information Solutions
 - Encryption
- ▶ A good example of our innovative microelectronic work comes in the form of our Nano Modular Instrumentation System, where we craft three separate nano boards in-house.
 - Nano Interface Board
 - Nano Power Board
 - Nano Sensor Boards



What are Hypersonic Systems?

- ▶ Any weapon with a sustained aerodynamic flight greater than Mach 5 speed
- ▶ Different types of hypersonic systems include:
 - **Intercontinental ballistic missiles**, which have a traditional ballistic missile trajectory making them easier to detect for our adversaries
 - **Hypersonic cruise missile**, also known as air-breathing missiles, which are scramjet powered, maneuver within the atmosphere and fly toward targets at hypersonic speeds
 - **Hypersonic glide vehicles**, which are rocket-boosted to a point where the glide vehicle is released and then continues to glide through the atmosphere to the target
- ▶ Who has hypersonic systems currently*?
 - Russia
 - China
 - U.S.
 - North Korea
 - India



Our Hypersonic Systems

Expendable Hypersonic Multi-mission ISR and Strike (Mayhem)

System Design Agent (SDA)

Design of a larger class air-breathing hypersonic system
Multiple missions (potential for air and ground launch options)



MACH TB
Testbed for Next
Generation Hypersonic
Systems

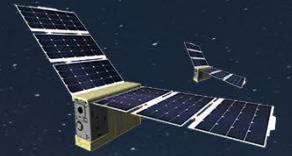
HAWC/HACM
Complex, classified
manufacturing of the
Inconel airframe

Common Hypersonic Glide Body
Design and Producibility
Transition for Government
Unique Multi-Service Capability Today
Customer Partnership



WFOV

Next Generation OPIR
from LEO for
Hypersonic Missile
Warn/Track



**Advanced Space
Situational Awareness
and RF Sensors**

**Long Range Hypersonic
Weapon Launcher**
Rapid, Affordable
Development and Integration



Multi-Service Advanced Capability Hypersonics – Test Bed

MACH TEST BED
Affordably Testing Hypersonic Innovation
at the Speed of Relevance

- Managed and resourced by OSD/TRMC
- Flight Test Bed provides affordable flight test research opportunities for DoD programs of record, national labs, academia, industry, and other government agencies

Novel Flight Experiments

Subscale Flights

Full Scale Flights

Leidos

The graphic illustrates a hypersonic flight path starting from a launch site on Earth, ascending through the atmosphere, and reaching space. Various hypersonic vehicles and testbeds are shown in flight, including a large hypersonic aircraft, a smaller hypersonic aircraft, a hypersonic missile, and a hypersonic rocket. A satellite is also shown in orbit. The background features a view of Earth from space.

MACH-TB: A National Effort

MACH TB National Team

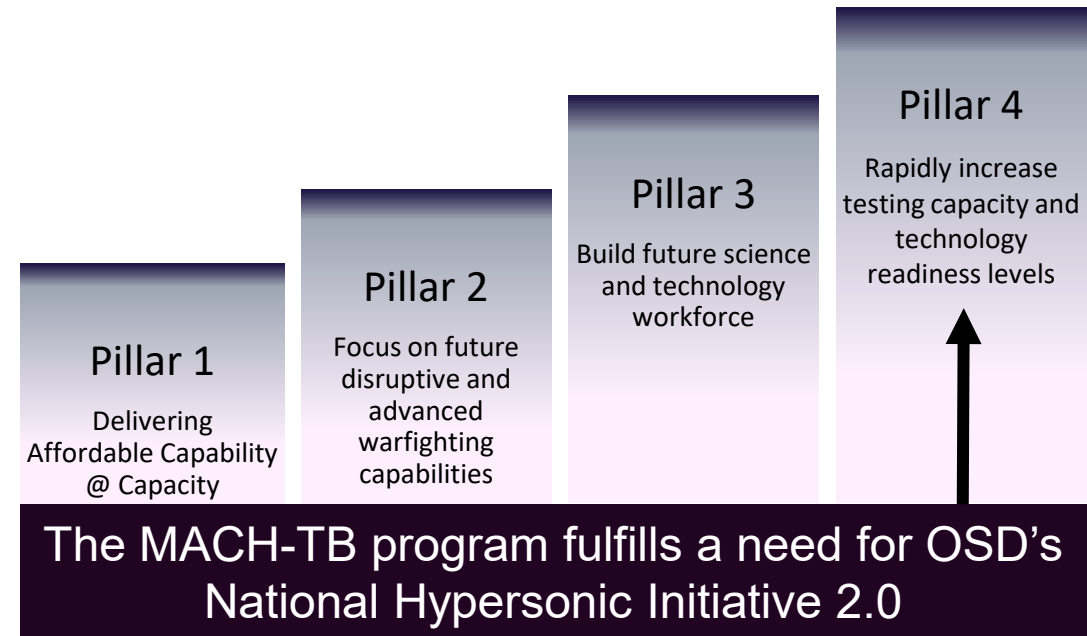


•Stakeholders:

- Provide developmental flight opportunities to academia, industry, government laboratories, Programs of Record, and warfare centers.

•Enablers:

- Non-traditional/Commercial launch vehicle providers to diversify capabilities
- Purchasing Long Lead items to create inventory and build economies of scale
- Complete Payload Integration and checkout prior to fielding (Ship-&-Shoot)
- Employ common architectures (i.e.. Experimental Glide Body)
- Reusable technologies



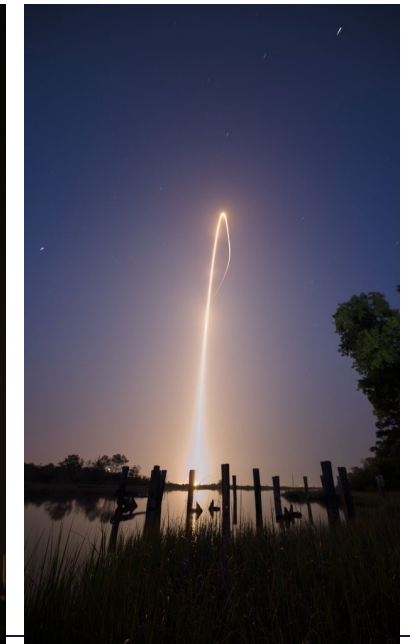
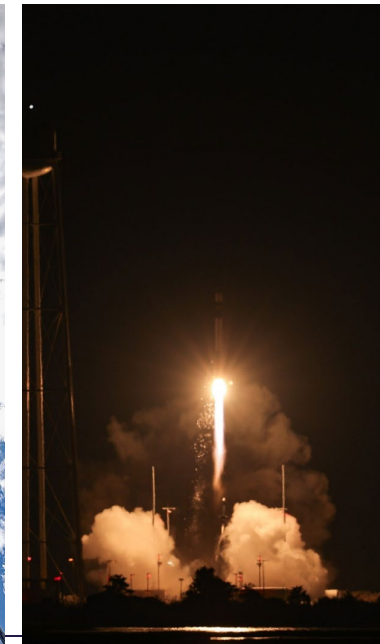
Want to Join the Dynetics Team?



An innovative spirit that finds creative ways to solve our customers' biggest challenges

How to Join the Dynetics Team

- ▶ We are currently hiring for multiple positions within all our areas of expertise.
- ▶ Job opportunities include full-time and internships, including here in Indiana.
 - Area positions are specifically focused in our hypersonics and microelectronics work
- ▶ For a full list of career opportunities, please visit our career site, jobs.dynetics.com
- ▶ If you're interested in looking at the Leidos enterprise overall, visit leidos.com to learn everything about the larger organization and other job offerings



Any questions?

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