ONR

Relevant Research and Results . . .Yesterday, Today, and Tomorrow

Brigadier General
"Tex" Alles

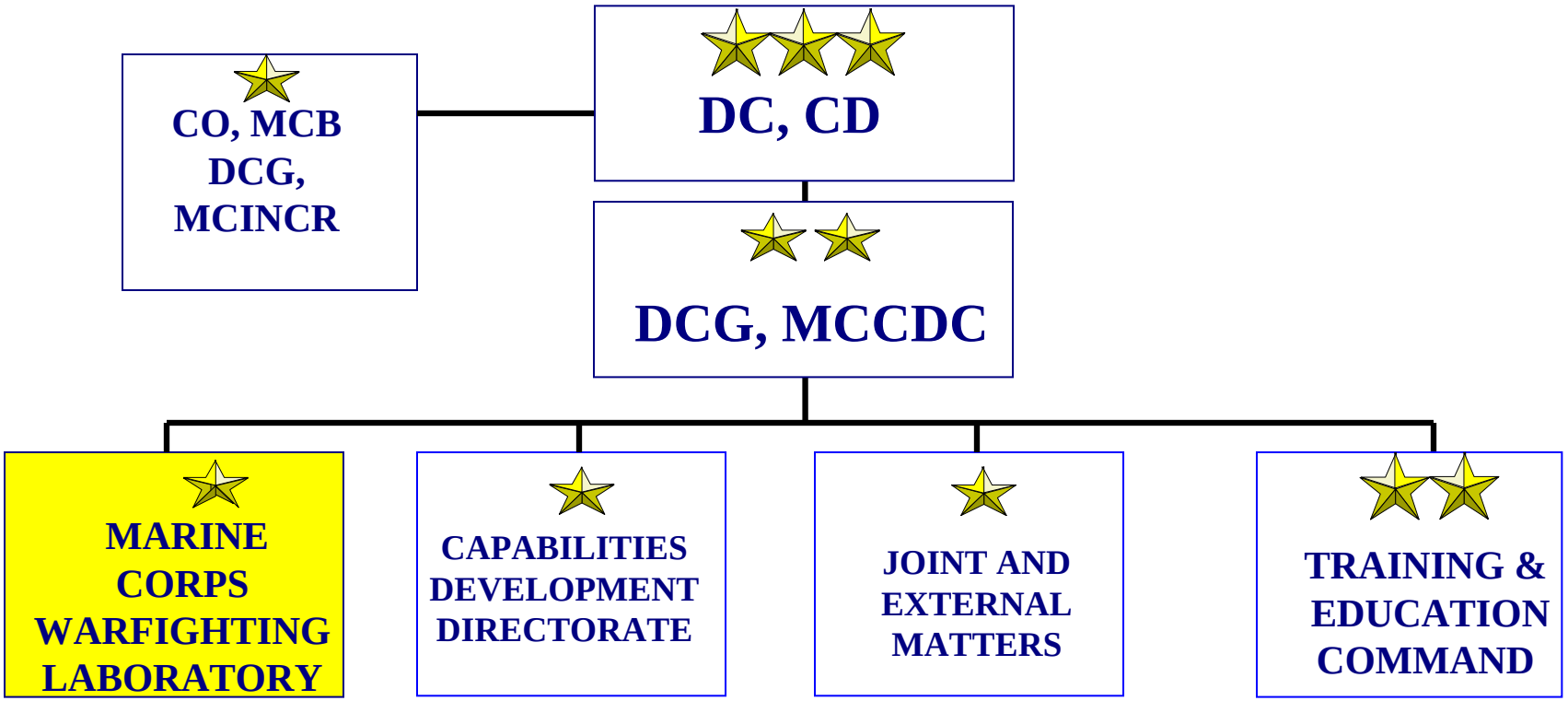
Commanding General
Marine Corps Warfighting Laboratory

Vice Chief of Naval Research

www.mcwl.quantico.usmc.mil

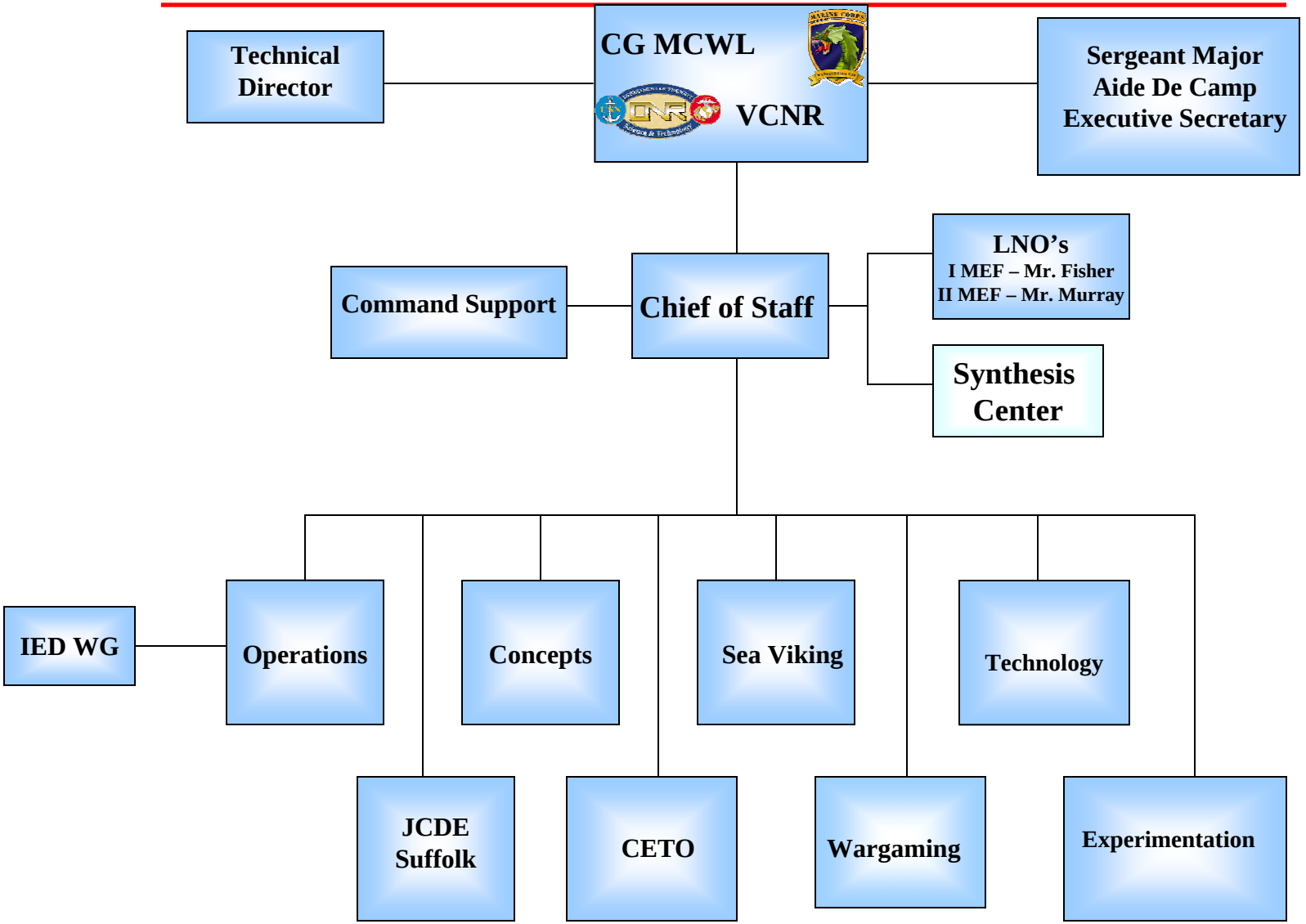
Organizational Placement

(http://www.mccdc.quantico.usmc.mil)



The Lab CG is also Vice Chief of Naval Research,
Executive Agent for S&T, and EA for Tech Support to OIF/OEF

Commanding General MCWL



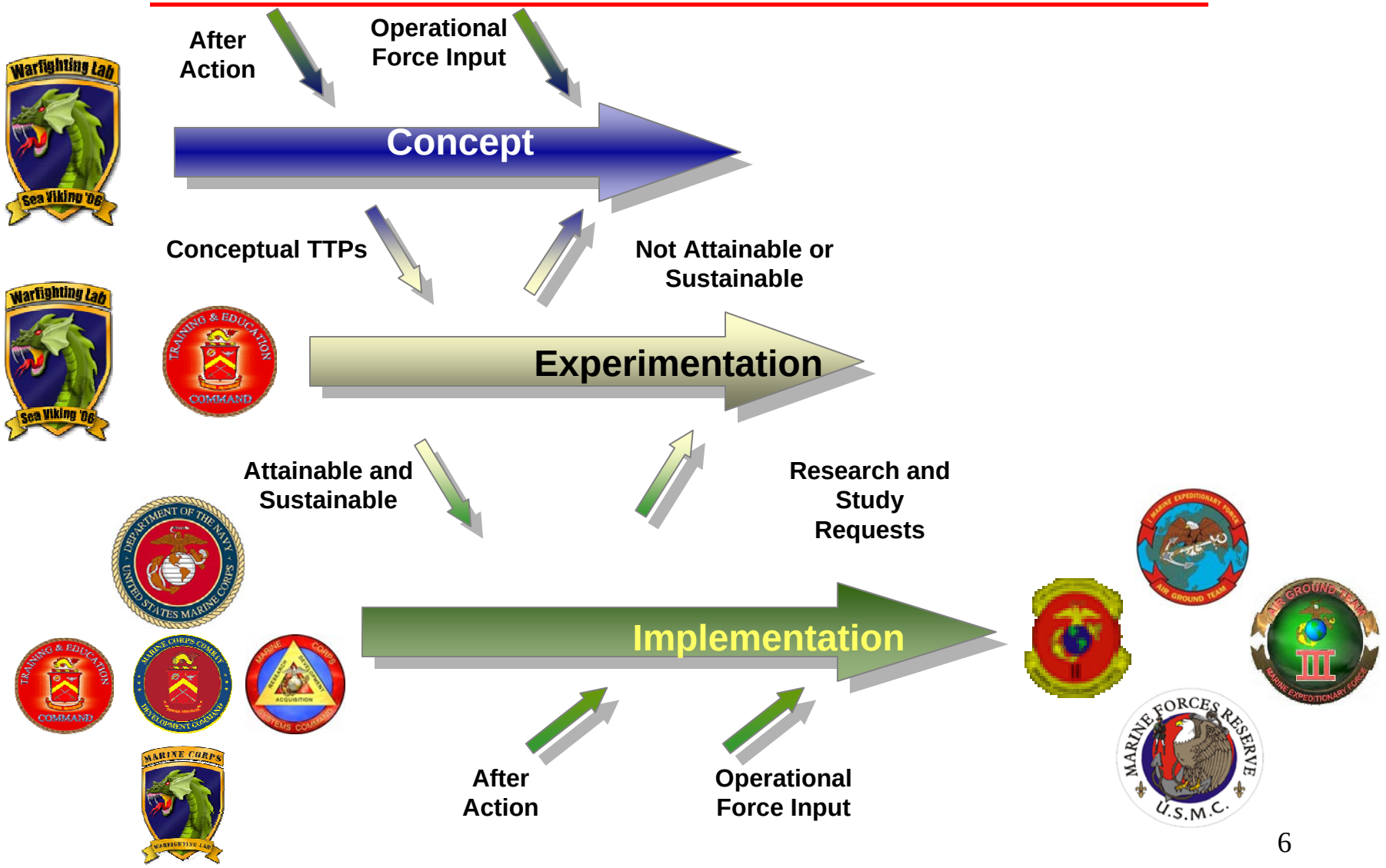
Mission

MCWL conducts ***concept-based experimentation*** to develop and evaluate ***tactics, techniques, procedures and technologies*** in order to enhance Marine Corps warfighting capabilities.

Experimentation Philosophy

- Innovation is more than technological change. Must consider tactics, organization and training.
- Results of experimentation are based on a combination of analytical rigor and operational assessment
- Marine Corps must credibly engage Joint Concept Development and Experimentation (JCDE)
- Our concepts translate to “Service” and get integrated into Joint Concepts

Concurrent Development Model



Experimentation Continuum

The Three Worlds of Innovation and Transformation

Solving Immediate Problems

The Next Service

4-5 years

The Service After Next

10-15 years

Marine Corps Experimentation and S&T supports Naval Transformation Roadmap

Current Concepts

Global War on Terrorism (GWOT)

Current Marine Corps concepts emphasize the Global War on Terrorism. Concepts development, capability gap analysis, and subsequent experimentation in GWOT related strategy and tactics have resulted in the development of TTPs and the initiation of multiple technology efforts to develop weapons and systems.

Distributed Operations

In response to GWOT and other predictive analysis the Lab is developing and experimenting with the concept of Distributed Operations.

"DO is an operating approach that will create an advantage over an adversary through the deliberate use of separation and coordinated, interdependent, tactical actions enabled by increased access to functional support, as well as by enhanced combat capabilities at the small-unit level."

Primary Goals of DO

1. Develop a greater institutional commitment to the training of enlisted combat leaders.

2. Empower small units with enhanced capabilities; provide education and training to enable Marines to better accomplish the mission.

3. Provide Marines with the best equipment in the world and the training to employ it.

Technology Development

The successful accomplishment, via experimentation, of the MCWL purpose and mission requires entry into Technology Development.

In Technology Development the Lab has four roles

1. *Tech to support Concept-Based Experimentation*
2. Operational assessments (for ONR or MCSC)
3. Tech support for the Operating Forces
4. Selective Tech Development for transition

Technology Priorities

-Broad Concepts

- ✧ Make our small units dominant, akin to our aviation at 15K feet or our Navy on the high seas.
- ✧ Consider the Marine as a part of a system, so we don't just concentrate on giving an individual the best gear, but gain synergy (comms, jammers, ISR, etc) from the system.
- ✧ Find and avoid minefields by their anomalies.
- ✧ Strengthen our ability to sensitize our troops to cultural and language capabilities -- enable the human interface.

Technology Priorities

- ✧ Premature detonation capability against IEDs
- ✧ Halving the weight of the basic fighting load of the infantryman
- ✧ Incorporating common electrical power without the variety of short life batteries
- ✧ Making infantrymen bulletproof and climatically controlled within ten years
- ✧ A helmet with a pilot-like HUD containing optics, protection, data display & comms
- ✧ A day/night scope for infantry weapons
- ✧ Simulators that approximate the real conditions for squads are needed
- ✧ IFF and PLI easily read/transmitted in real time displayed.
- ✧ EMP shielding and chem-bio protection
- ✧ Adaptive camouflage that conforms to the environment and light conditions.

Telepresent Rapid Aiming Platform (TRAP)

- Remote firing platform
  - Tripod or vehicle mounted

•Man transportable can be emplaced up to 100 meters from the operator

•Day/Night video and IR thermal capabilities,

•Network controller to allow up to four TRAPs to be controlled from a common location, controller screen has integrated digital crosshairs for aiming

•Accommodates the M240G/B machine guns, M249 Squad Automatic Weapon, M-82 .50 caliber Special Application Scoped Rifle (SASR), Designated Marksman Rifle (DMR), and M-16 Service Rifle

Wasp Micro UAS

- DARPA funded Micro Air Vehicle
- Platoon Leader's "Binoculars forward"
- 4-5 Km -- 1 Hour Duration
- 35 WASP Systems over 18 months (137 Air Vehicles)
- Validation of requirement anticipated Summer 06
- Controlled insertion of technology into forward deployed units

RST-V

- Joint USMC, ONR, DARPA program
- Program began in 1999
- Developmental vehicles delivered to the Lab for Limited Technical Assessments
- Demonstrated in Capable Warrior and additional LTAs
- Transitioned to SysCom in 2006
- Possible Deploy to Iraq in 2006

Questions?