

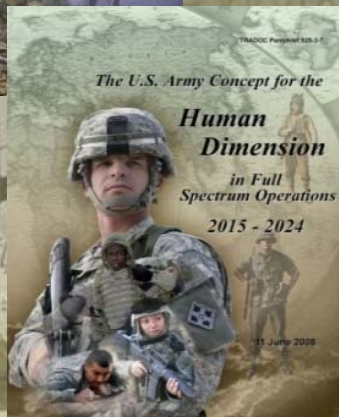
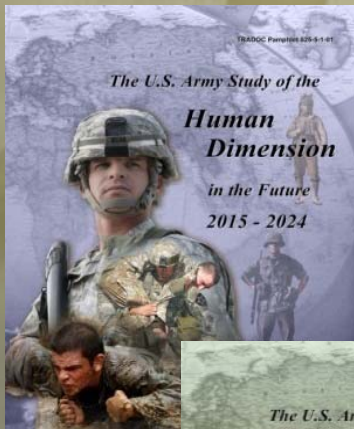


# Human Dimension

COL Steven Chandler

Chief, Human Dimension TF

27 January 2010

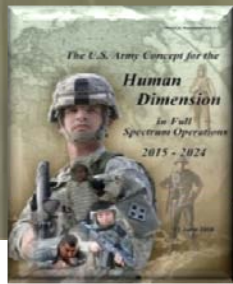


# Report Documentation Page

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a. REPORT <b>unclassified</b>	b. ABSTRACT <b>unclassified</b>	c. THIS PAGE <b>unclassified</b>			



# Scope of Remarks

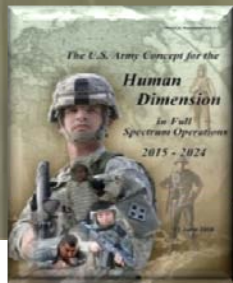


- ❑ Where I am from .....
- ❑ Why do we need Human Dimension Concept?
- ❑ What is the Army's Human Dimension (HD) Concept?
  - ❖ The Cognitive Component
  - ❖ The Physical Component
  - ❖ The Social (Moral-Cultural) Component
- ❑ Where are we going?
- ❑ Questions



**Army Strong**  
*Cognitively, Physically  
& Socially*

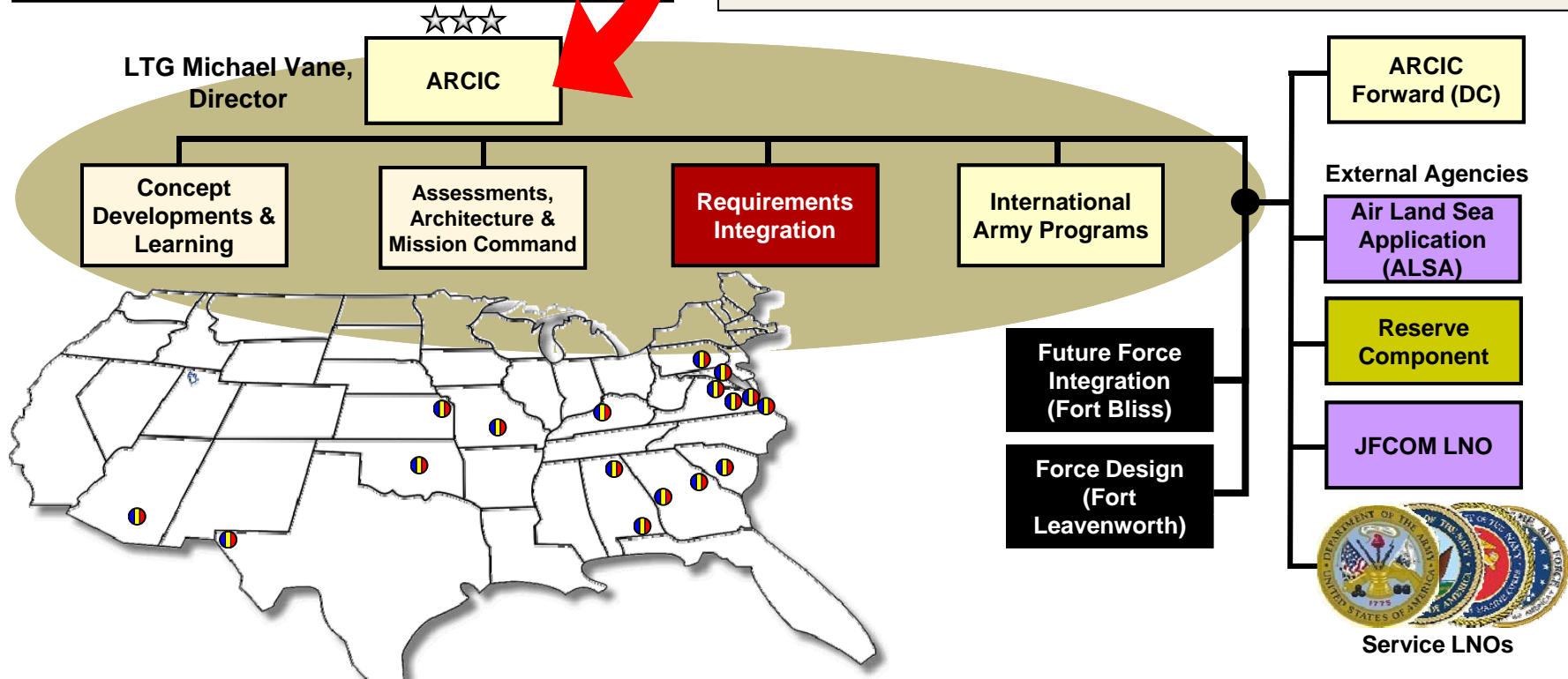
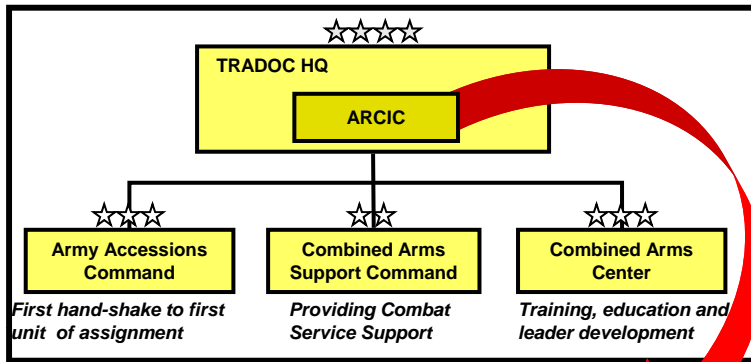
***“I expect the study to spur thought, motivate investigation, and illuminate, through a structured approach, a strategy for the coordinated and holistic development of future capabilities.” - - General William S. Wallace***

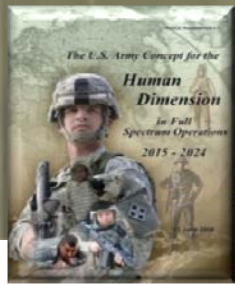


# Army Capabilities Integration Center



*The Army Capabilities Integration Center (ARCIC) designs, develops, integrates and synchronizes force capabilities for the Army across the DOTMLPF imperatives into a Joint, Interagency, and Multinational operational environment from concept through capability development.*





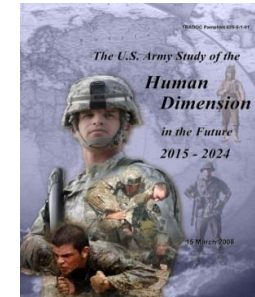
# HD Operational Problem Statement



**Given** the requirement for Full Spectrum Operations in an Era of Persistent Conflict with the demands of the Army Force Generation cycle (Reset – Train/Ready – Available) and that Soldiers are the centerpiece of our formations, human capabilities are the key to winning our current and future wars ...

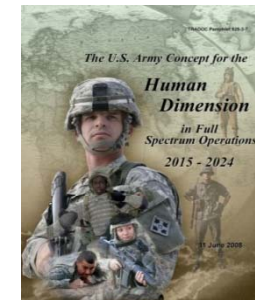
**The Operational Problem:** The Army must focus our Human Dimension efforts to ensure: sustained quality of the All-Volunteer Force, trained Soldiers, Civilians, Leaders and units prepared for Full Spectrum Operations (FSO), a resilient force Reset and Trained/Ready for future deployments, and prepared for complex and demanding Joint, Interagency, Intergovernmental, and Multi-national (JIIM) environments now and in the future.

**Research & Concept Development Communities**



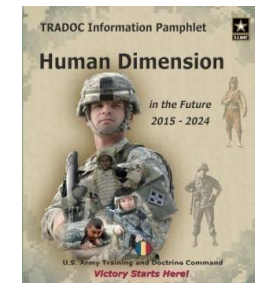
**Study**

**Joint & Army Senior Leaders Congressional Staffers**



**Concept**

**General Audience**



**Handout**

***Requires an adaptive institution***



# The Human Dimension Concept



**Previous Army concepts acknowledge the Soldier as the centerpiece of our formations, but none, individually or collectively, adequately addresses the human dimension capabilities for current or future operations.**

## **Using available and emerging tools that ...**

### **Cognitive**

– optimize cognitive flexibility, mental intellect and information processing through enhanced screening, recurring assessment and tracking of individual's potential and attributes; dynamic, scalable, adaptive, immersive, sensory enabled, tailored training; Adaptive material systems maximizing individual attributes.

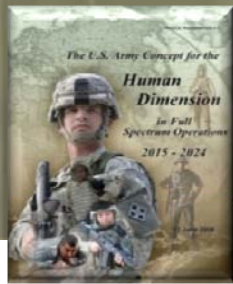
### **Physical**

– improve fitness through comprehensive wellness programs that build aerobic/mental capacity, strength, endurance, agility , and resilience; focused nutrition; stress and sleep deprivation management.

### **Social**

-- strengthen character/Warrior Ethos reflecting confidence in tough moral, culturally sensitive situations grounded in law; Army Values; understanding social/family dynamics, social awareness, cultural differences, respect, interpersonal relationships, and spirit; strengthen affiliation with a team, fostering cohesion, positive perception of others.

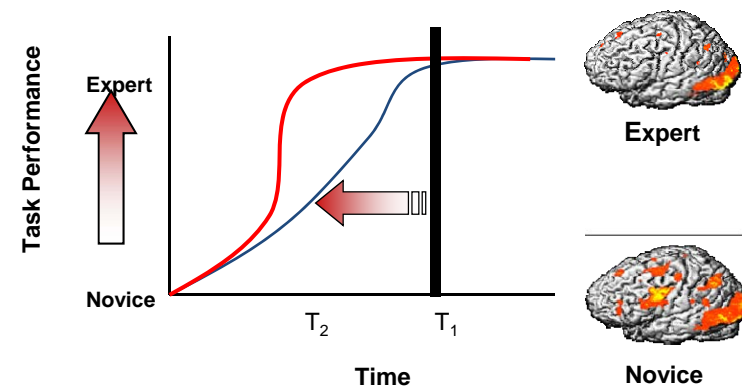
**The future domestic / global operating environment requires agile policies to support a comprehensive approach to the Human Dimension.**

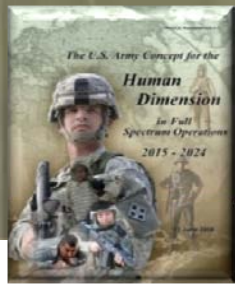


# Cognitive Component Outcome



A recruited Future Force managed and retained based, in part, on continuous cognitive assessments (e.g. Attention, Learning, Leadership, Adaptability, Decision Making, Vision). Advanced technologies and tools assist in the selection of individuals for assignments and advanced accelerated / measurable training. Enhanced training (facilitate and accelerate task learning), leader development and Mission Command systems that adapt to individual proficiencies and learning rates to maximize readiness. Leaders provided PDA driven tools that track soldier readiness and assist linking individuals talents/skills to mission requirements.





# Cognitive Component



## Facts:

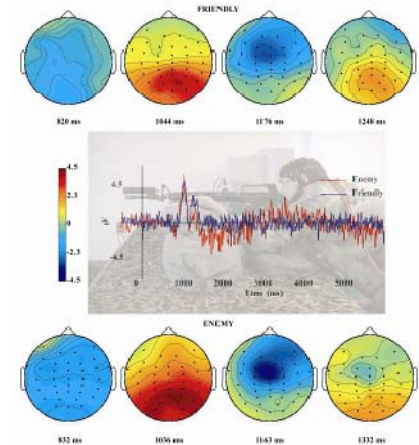


- 100 bil neurons, .6 cft, uses 2w/hr vs. Super Computer @ 1600 sft, 5000w just for cooling
- Everyone “wired” differently – More synaptic connections than all known bodies in the universe i.e., billions
- 2% body mass, yet consumes 20% of the energy - alert or asleep
- 3 seasons of the brain – Maturing, Adult, Aging
- Spatial Navigation differences – Men and Women *ARE* different
- Cognitive Peaks differ individually for D-making

## Possibilities:

- Predict leadership potential and decision-making capabilities
- Identify cognitive styles, special skills and attributes
- Cognitive gym -- Cognitive PT Test that builds capability & experience
- Cognitive UCFT – exercise full spectrum skills
- Accelerate learning -- tailored to individual potential and preferences
- Train the untrainable?

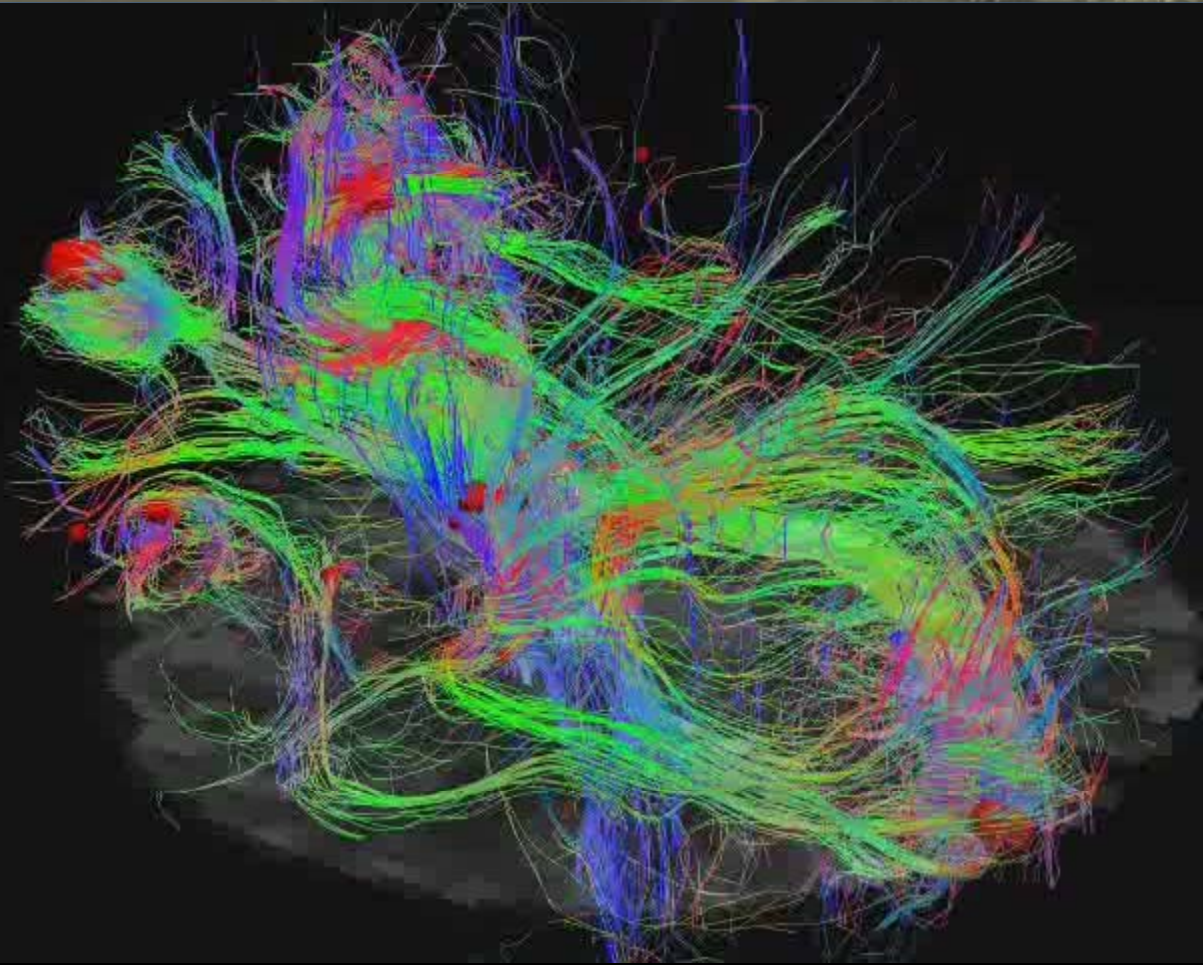
UCFT - Unit Conduct Of Fire Trainer

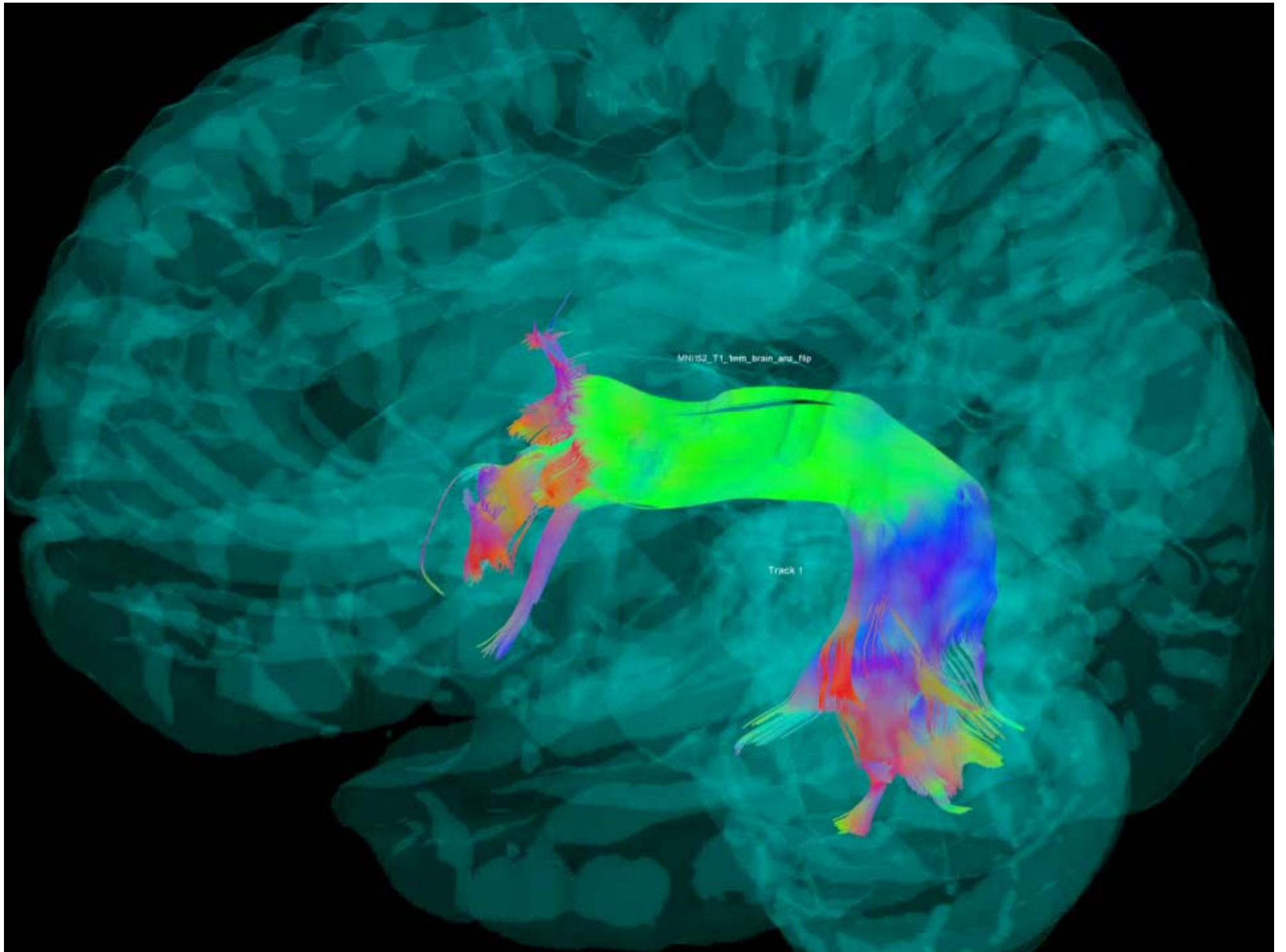


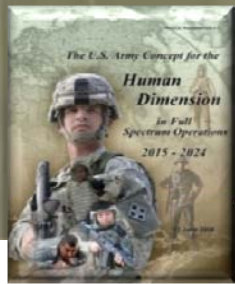
**Maximize a Soldier's inherent cognitive potential and learning.**



# Fiber Tracking







# Cognitive Component



## Facts:

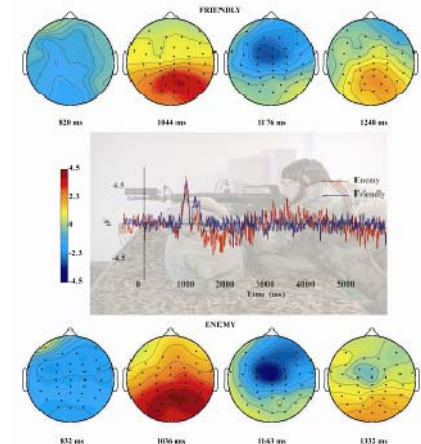


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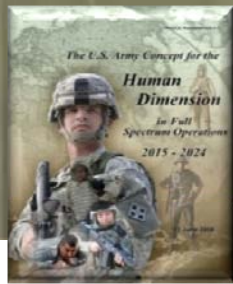
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UCFT - Unit Conduct Of Fire Trainer



**Maximize a Soldier's inherent cognitive potential and learning.**



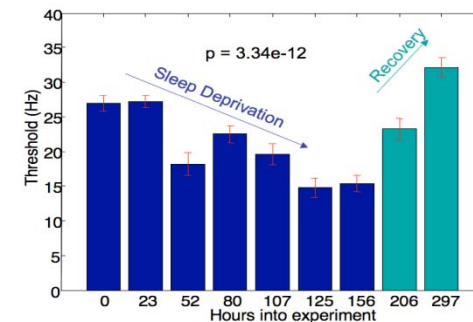
# Physical Component Outcome

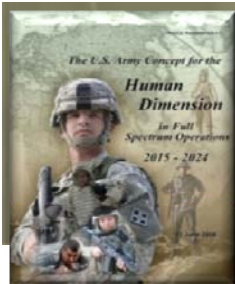


A Future Force that adheres to a continuum of holistic fitness tailored to the individual and subsequent mission requirements (measurable physiological, neurological, psychological, nutritional, and developmental fitness training). Programs that identify, mitigate, treat and rapidly restore soldiers who become holistically “unfit” due to combat operational and stress-related injuries. Retention of qualified physically disabled soldiers is the norm.



Measuring excessive fatigue

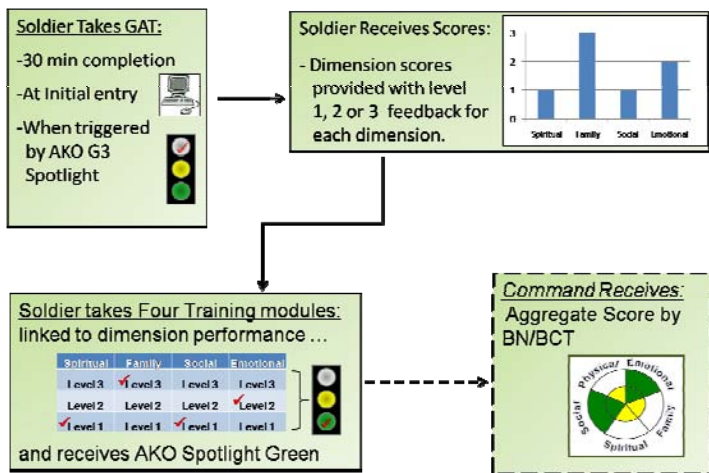




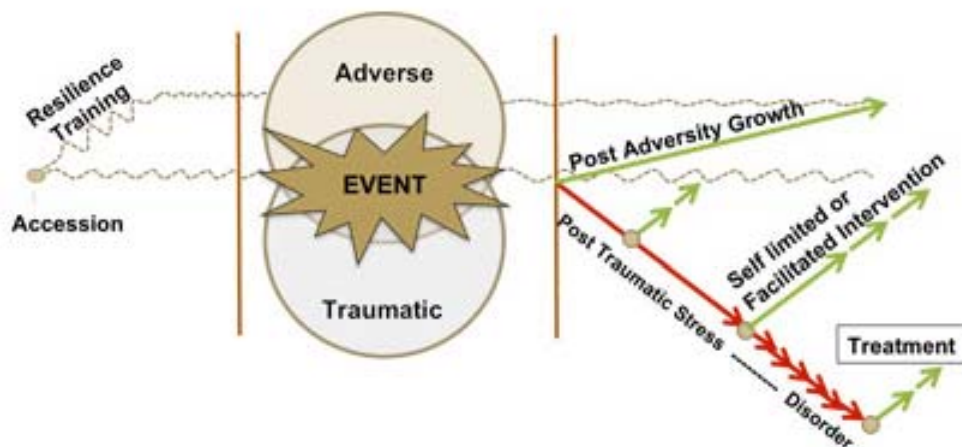
# Physical Component



Office of Comprehensive Soldier Fitness, HQDA G-3/5/7



GAT Assessment Tool

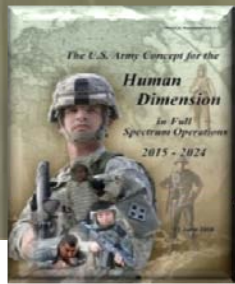


Master Resiliency Program

## Possibilities:

- Effective resilience building and stress mitigation
- Identify combat stress / PTSD vulnerability –
- Soldiers physically, mentally, emotionally, socially fit - evidenced by lower incidence of combat stress, PTSD and suicide.

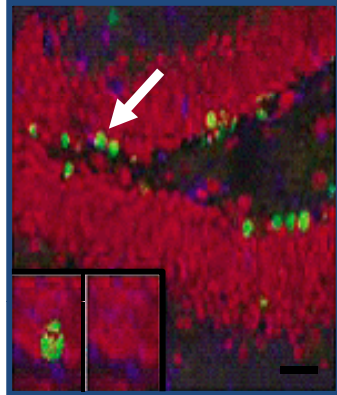
Maximize a Soldier's inherent physical potential and holistic health.



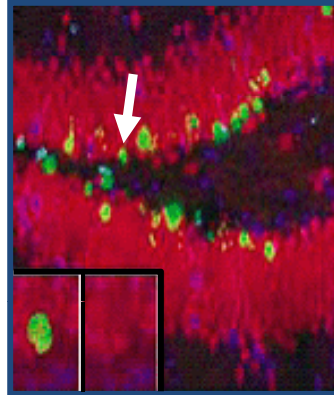
# Physical Component



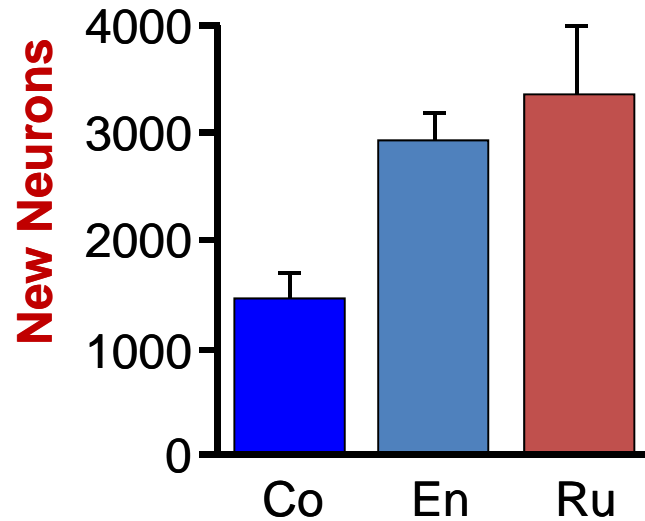
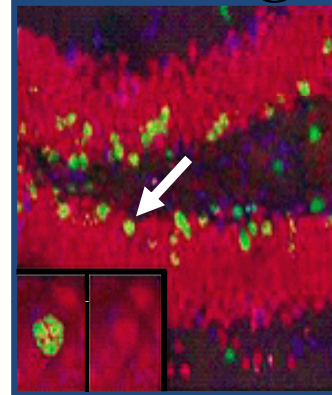
**Control**



**Enrichment**

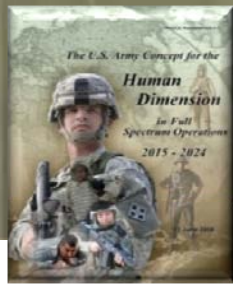


**Running**



**Guess What?  
Exercise  
increases cells**

Brown et al, *Eur. J Neuro*, 2003



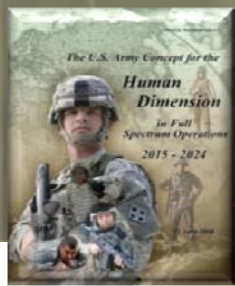
## Social Component Outcome



A Future Force that functions and behaves in accordance with: law; Army Values; and national/international expectations and standards. Grounded by a continuum of adaptable, scalable, and measurable training programs that inculcate appropriate actions in reaction to operational challenges in tough ethical/moral situations. Commanders with improved cultural awareness programs; more soldiers with language skills; and high awareness of the linkage of ethical behavior to combat effect, Army Family values and the Army's Civilian Work Force.



“... Soldiers and leaders must feel confident ... to interact day-to-day with people of different cultural backgrounds and perspectives... GEN Casey

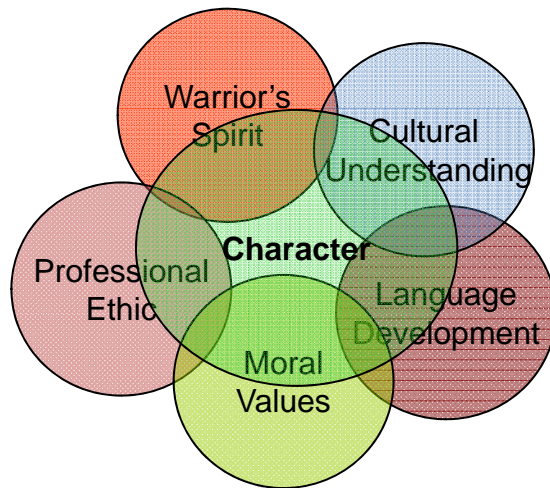


# Social Component



## Art of Communication

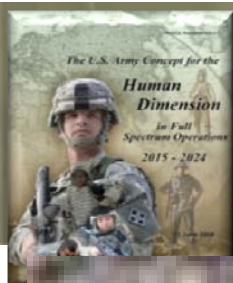
# The Character of Soldier



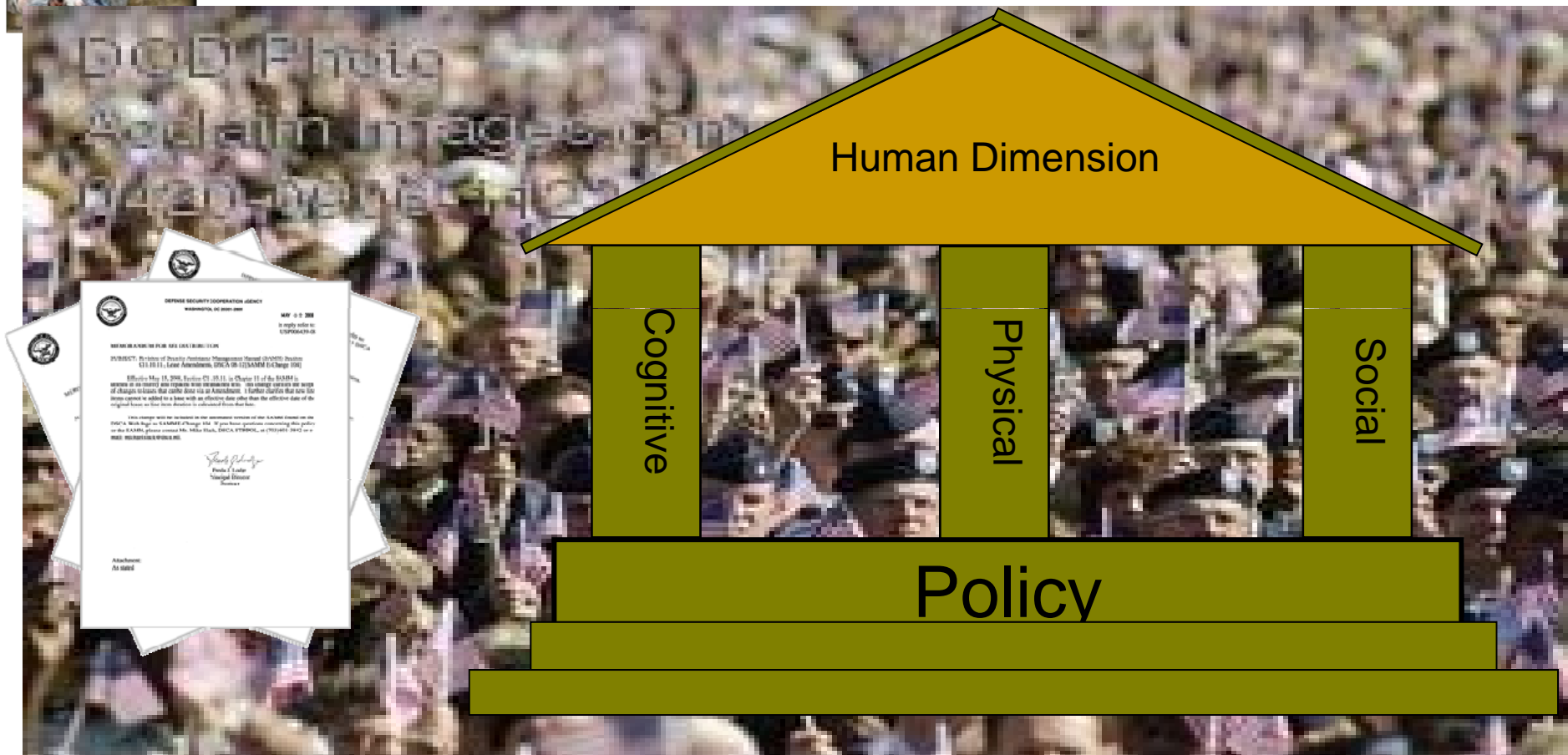
### Possibilities:

- Identify aptitude for language, cultural understanding, openness; understanding of differences in others
- Each Soldier, DA Civilian and Family member an integral component of a network and society

Maximize a Soldier's inherent social potential as a culturally astute warrior and world citizen.

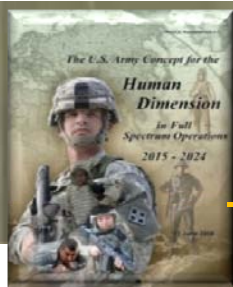


# Affects of Policy



“Agile units deserve agile institutions.” GEN Casey





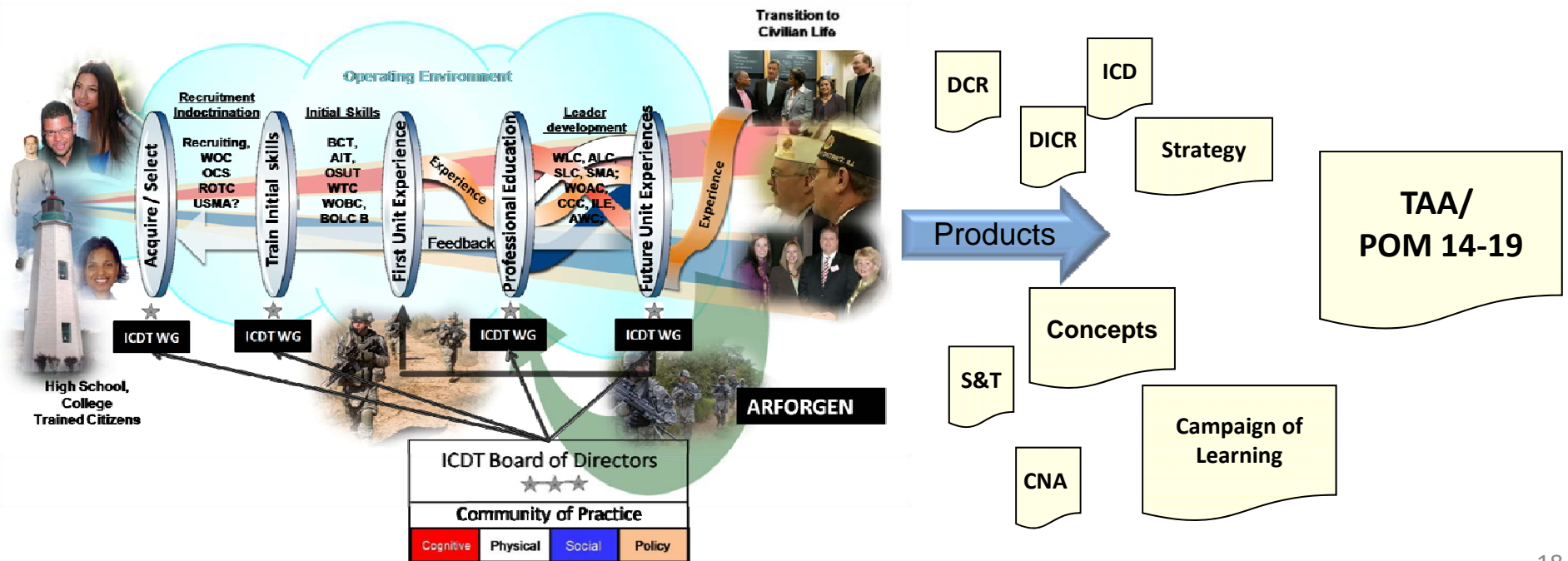
# Human Dimension Integrated Capability Development Team (ICDT)



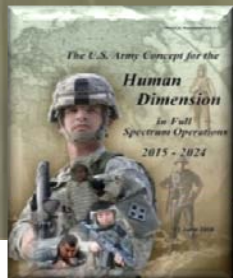
## ICDT Outcome

An Army poised to achieve its maximum cognitive, physical, and social potential for Soldiers, Civilians, and Families by optimizing their abilities, experience, education and fitness.

## Organizing Principle



# Summary

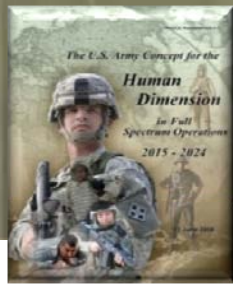


## ➤ **We are about**

- ✓ ***Empowering Soldiers / units to dominate the Land Domain***
- ✓ ***Improving, optimizing and restoring cognitive, physical, and social abilities***
- ✓ ***Enabling Soldiers to function efficiently as an integral component of a network and society***

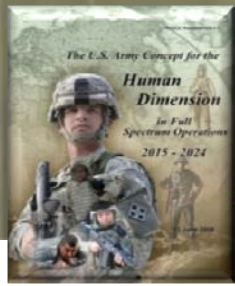


# Questions?

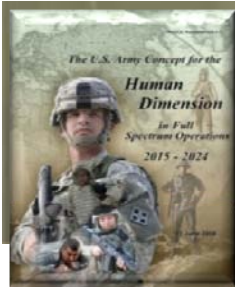


“ No two persons are born exactly alike ... All things will be produced in superior quantity and quality, and with greater ease, when each man works... in accordance with his natural gifts...”

(Plato, The Republic, c. 360 B.C.)



# Back up



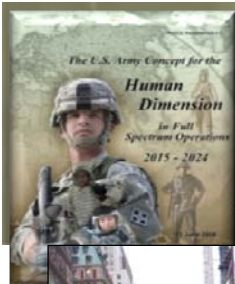
# TRADOC CG Initial Guidance



- The “Human Dimension” requires a thorough, credible and detailed examination.
- Examine the behaviors, intuition, and performance that impacts individual decisions and interaction with other humans, technologies, and environments.



- The role of the Human Dimension must be examined not only in combat operations, but also in the realm of force generation -- to include consideration of projected shifts in US demographics.
- Analyze the full life cycle of the Soldier from recruitment to reintegration into society.
- Must be applicable to the future Operating Environment (OE)



# HD Concept Concluded

## - The Army MUST...

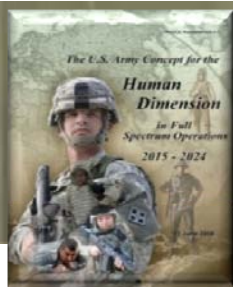


- Examine recruiting policies and entry level standards
- Adjust retention programs
- Enhance initial entry programs to close cognitive and physical gaps
- Consider adjustments to career management policies
- Consider future break in - service options
- Adapt training techniques for new learning styles and cognitive preferences

- Evaluate balance between the operating and the generating forces
- Examine unit rotation and personnel replacement policies
- Consider programs to identify and mitigate causes of stress
- Continue to consider the Soldier's family environment
- Exploit advances in decision- making and networked operations to support— not supplant— leadership.



- Expand physical fitness as a component of the concept of holistic fitness
- Consider physical training tailored to individual needs and mission requirements
- Seek a balance of all human dimension components to enhance holistic fitness
- Consider policies and programs to retain qualified physically disabled Soldiers
- Exploit S&T enablers to enhance and augment Soldier performance



# Improved Cognitive Measurement Tools



## Traditional Tools and Methods

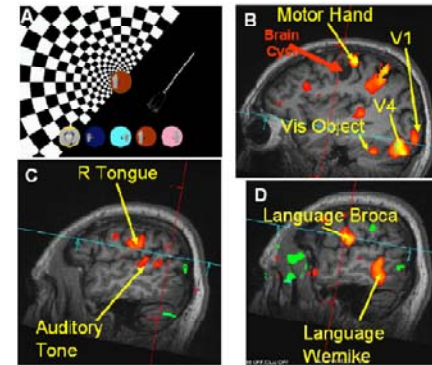
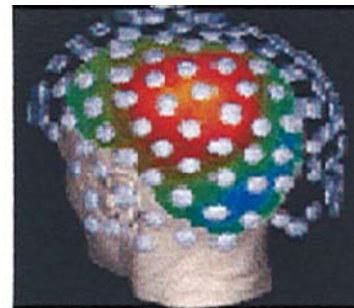
-- Psychological assessments



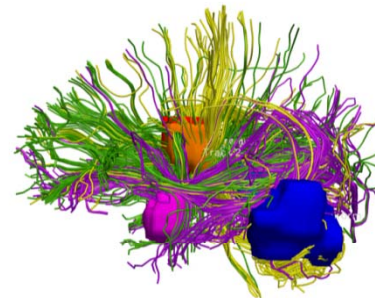
-- Physiological assessments



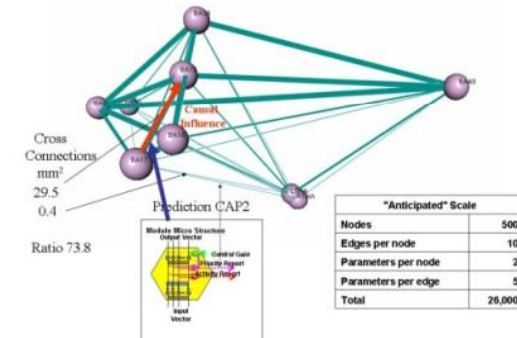
## EMERGING Tools and Methods



**EEG & fMRI Functional Mapping**



**Brain Fiber Tracking**



**Brain Connective Topology**