

**Presentation 6 – Jennifer Vasterling**

**Prospective Assessment of  
Neurocognition in Future Gulf-  
Deployed and Gulf-Nondeployed  
Military Personnel: A Pilot Study**

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**Primary Objective**

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To examine prospectively neurocognitive outcomes related to Iraq deployment in deployed and comparable nondeployed Army troops.

**Why Neurocognitive Outcome?**

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- Concentration and memory problems commonly reported among 1991 Gulf War veterans
- Adverse impact on daily life
- Some research suggesting CNS dysfunction in 1991 Gulf War veterans.
- Neuropsychological performance as an objective, “portable” screen of CNS integrity.



### Why Prospective Assessment?

- Baseline and post-deployment assessments allow documentation of change over time.
- Addresses questions relative to pre-existing conditions.
- Assessment of change helps address interpretation of “subtle” deficits. (That is, what is minor to one person may represent a significant change to another.)

### Design

- Prospective, longitudinal
  - Time 1: Baseline
  - Time 2: Post-deployment
- 3 primary samples of Army personnel:
  - Iraq- deployed (n = 600)
  - Non-deployed (n = 450)
  - (?) Sinai-deployed (n = 150)

### Sample

- Iraq Deployed Sample (n = 600)
  - 4 units:
    - 2 combat/combat support
    - 2 service support
    - At least 1 unit Guard or Reserve
- Non-deployed Sample (n = 450)
  - 3 units:
    - 1 Active Duty combat/combat support
    - 1 Active Duty service support
    - 1 Guard or Reserve

### **Variable Domains**

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- Predeployment Variables  
Demographics, baseline cognition/mental status, prior trauma exposure, brain & nervous disease/risk factors, perception of unit cohesion, preparedness, and physical health, military variables
- Deployment Variables  
Deployment status, MOS, unit type, geographic location, objective environmental exposures, combat and stress exposure, self-reported environmental exposures

### **Neurocognitive Variables**

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- Functions robust to most acquired brain insults  
(e.g., vocabulary)
- Functions sensitive to potential deployment-related exposures  
(e.g., attention, working memory, learning, memory, motor, processing speed)

### **Data Sources**

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- Military Health and Personnel Records
- Military environmental exposure and geographic location data
- Self-report (deployment experiences, risk factors, health perception, mood & emotional symptoms)
- Objective neuropsychological performances

### **Data Analytic Approaches**

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- Repeated measures multivariate analysis of (co)variance to examine neurocognition over time by deployment group
- Multivariate stepwise regression to identify the unique contributions of independent variables to postdeployment cognitive performance (over deployment)

### Units Assessed

- Combat Arms/Combat Support (Active Duty)  
n = 150  
98.7% (of 152)
- Combat Service Support (Active Duty)  
n = 151  
95.6% (of 158)
- Combat Support (National Guard)  
n = 53  
79.1% (of 67)
- Combat Service Support (Active Duty)  
n = 105  
71.4% (of 147)

### Participant Characteristics

Age (yrs)	27.3 (7.2)	18-56
Education (yrs)	12.9 (1.4)	11 - 18
% women	16.6%	
Rank		
% E4 or below	59.0%	
% E5 – E9	35.1%	
% Officers	5.9%	
Race/Ethnicity		
% Caucasian	51.1%	
% African American	24.0%	
% Hispanic	15.0%	
% Other	9.9%	

### Summary

- Prospective, longitudinal data collection, including baseline and post-deployment assessments
- Comparison of Iraq-deploying troops to nondeploying troops (and possibly Sinai-deploying troops)
- Primary outcome measure is neurocognitive performance