



# Millennium Cohort Family Study: The Impact of Military Life

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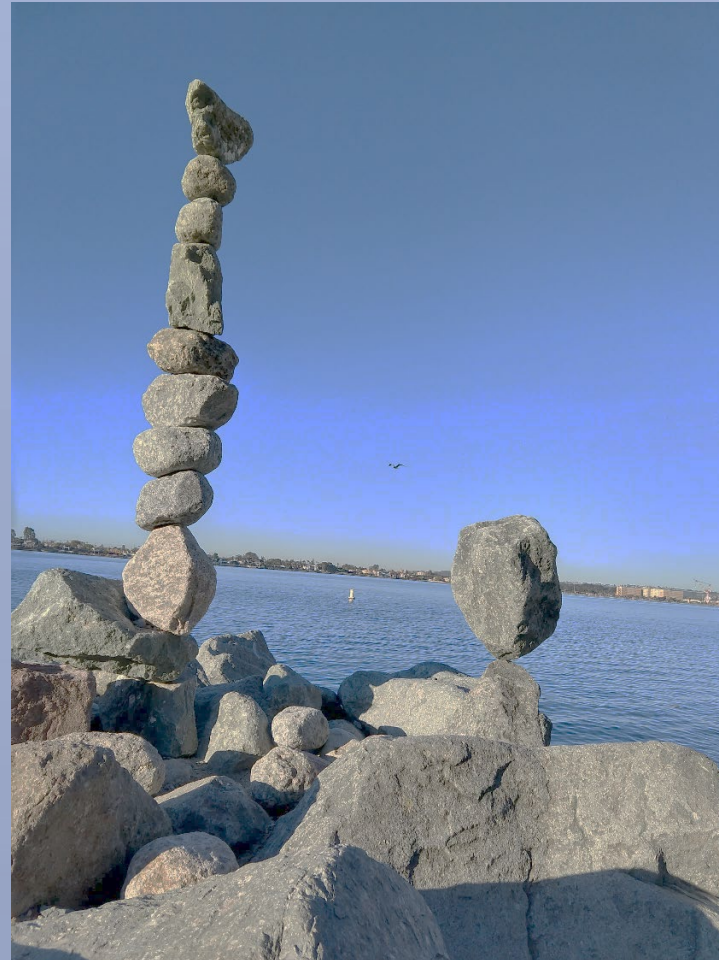
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The study protocol was approved by the Naval Health Research Center Institutional Review Board in compliance with all applicable Federal regulations governing the protection of human subjects. Research data were derived from an approved Naval Health Research Center Institutional Review Board protocol number (Protocol NHRC.2015.0019).



# Presentation Outline



- Introduction to the Millennium Cohort Program (MCP)
  - Millennium Cohort Study (MCS)
  - Millennium Cohort Family Study (MCFS)
  - Millennium Cohort Study of Adolescent Resilience (SOAR)
- Family study background
- Family study research
  - Family research portfolios
  - Annual plan and current focus areas
  - Recent research on veteran families
    - Service separation and transition research
    - Dual-military and veteran spouse research
    - Intimate partner violence research
- Collaborations
- Questions






# Millennium Cohort Program: Introduction



**Have you ever  
heard about the  
Millennium Cohort  
Program before?**



# Millennium Cohort Program (MCP)

Study	Launched	Population	Enrollment	PI	Logo
Millennium Cohort	2001	Service members	260,228	Dr. Rull	
Family Cohort	2011	Spouses of service members	28,178	Dr. Stander	
Adolescent Resilience	2022	Adolescent children of MCS participants	Currently Enrolling	Dr. McMaster	



# Millennium Cohort Study



- **Objective:** Document the long-term health impacts of military service.
- **Largest and longest running military cohort study in history**
  - Initiated July 2001 (pre-9/11)
  - Comprises all services, active duty, and Reserve/Guard
- **Participants complete surveys every 3 years through 2068**
  - Standardized instruments assess physical health, mental health outcomes, and health behaviors, as well as military operational risk and protective factors

PROTECTING THE HEALTH  
OF SERVICE MEMBERS AND VETERANS

The Millennium Cohort Study

PLEASE COMPLETE THIS SURVEY AND RETURN IT IN THE PRE-PAID ENVELOPE      OR      GO TO [WWW.MILLENNIUMCOHORT.ORG](http://WWW.MILLENNIUMCOHORT.ORG) CLICK "START SURVEY" ENTER YOUR SUBJECT ID:



# Millennium Cohort Enrollment



Panels 1-5 (N = 260,228)

Panel	Enrollment Dates	Years of Service at Enrollment	Oversampled Groups	Roster Size (Date)	Total Contacted	Total Enrolled (%)
1	Jul 2001–Jun 2003	Unrestricted	Women Reserve/Guard Prior deployers*	256,400 (Oct 2000)	214,388	77,019 (36%)
2	Jun 2004–Feb 2006	1–2	Women Marine Corps	150,000 (Oct 2003)	123,001	31,110 (25%)
3	Jun 2007–Dec 2008	1–3	Women Marine Corps	200,000 (Oct 2006)	154,270	43,438 (28%)
4	Apr 2011–Apr 2013	2–5	Women Married	250,000 (Oct 2010)	247,266	50,052 (20%)
5	Sep 2020–Jun 2021	1-5	Women Married	500,000 (Jun 2020)	360,741	58,609 (16%)



# Millennium Cohort Study

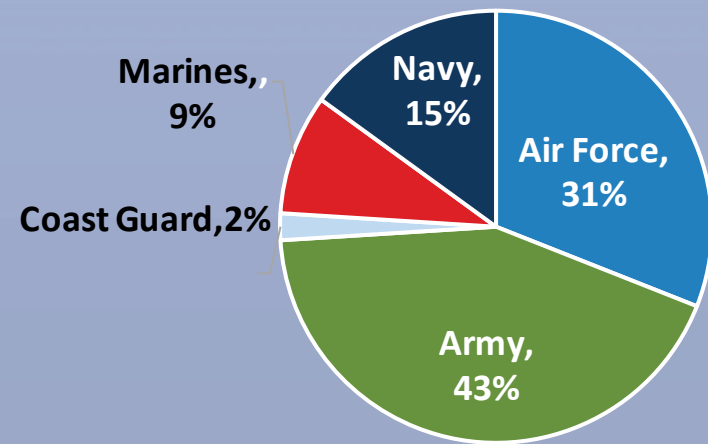
## Profile (Panels 1-5)



Baseline Characteristics	%
Female	31
Non-Hispanic White	69
Enlisted	82
Active component	70

Deployment Status	%
Ever deployed	60
Separated from military	58
Deceased	2

Current Age (2022)	
Panel	Mean (SD)
1	55 (9)
2	42 (5)
3	39 (4)
4	37 (5)
5	27 (5)
All	41 (12)



\*Note. Currently, the Air Force group includes Space Force service members.

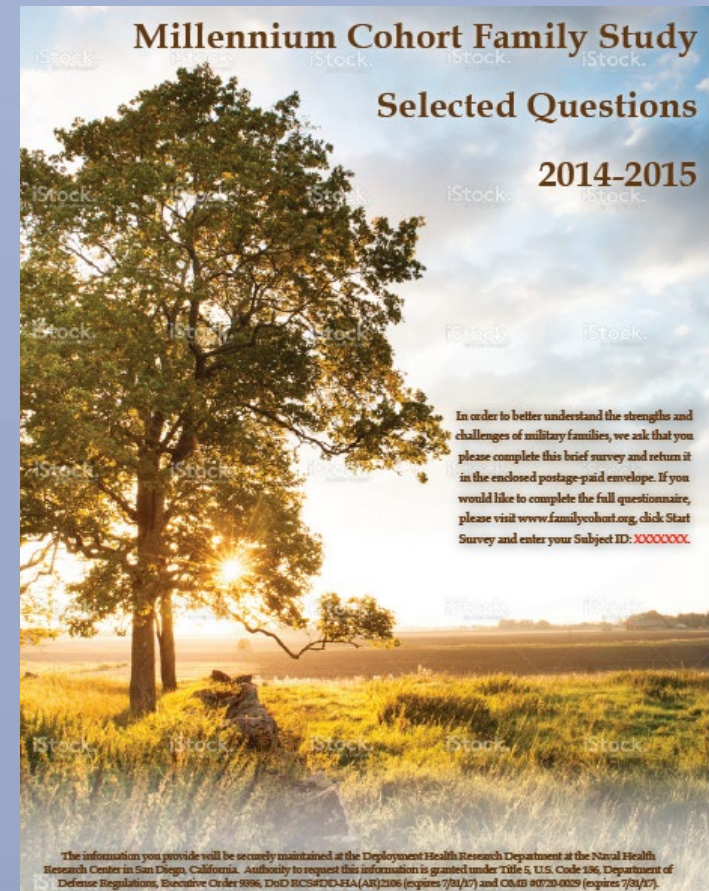




# MCP Research Studies: Millennium Cohort Family Study



- Only DoD population-based study evaluating the health and relationship adjustment of military spouses and families
- Follows spouses of junior personnel (2-5 years of service) both during and after military life
- Two cohorts of participants enrolled from 2011-2013 and 2020-2021, with 7 follow-up survey cycles conducted approximately every 3 years



# Study of Adolescent Resilience - SOAR



- **Sponsored by DoD Military Community and Family Policy**
- **Goal:** To understand how military life affects military-connected youth's psychological and physical health, academic achievement, and educational and career goals.
- **Aims:**
  - Assess the impact of parental well-being on adolescent adjustment.
  - Identify modifiable risk and protective factors for resilience.
  - Evaluate demographic patterns and predictors of community engagement and service use.
  - Assess the impact of adolescent adjustment on service member readiness.
- **Future:** Secure funding for longitudinal follow-up of adolescents



# Millennium Cohort Family Study: Background



# Family Study Objectives



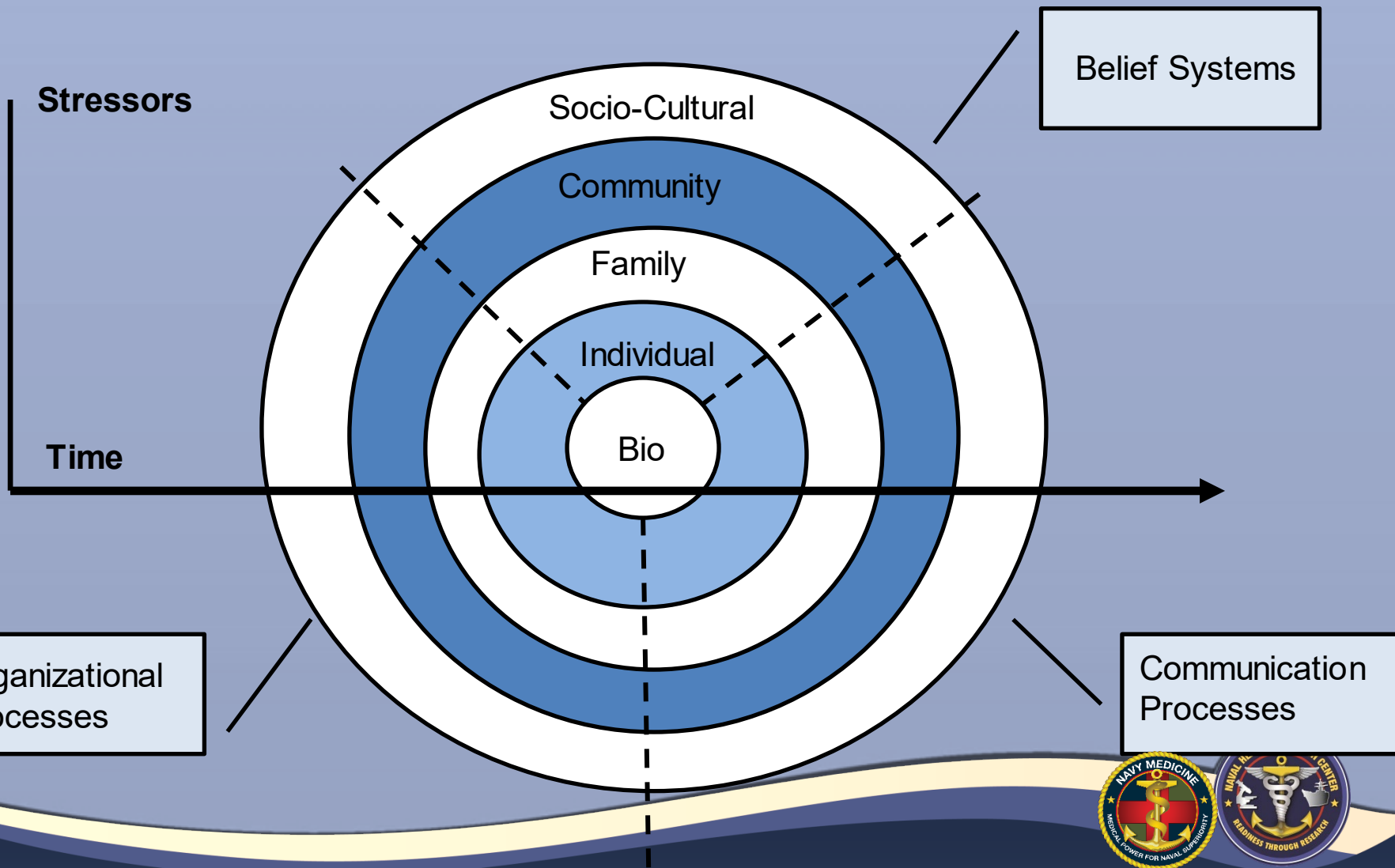
In the Personnel and Readiness Strategic Plan for FY18-20, the DoD reconfirmed the importance of promoting family readiness to enhance the lethality of the warfighter. In support of this, the Family Study not only seeks to understand the impact of deployment and other military life experiences on the spouses and children of service members, but also the effects of family life and relationships on service member readiness and performance.



# Family Study Perspective



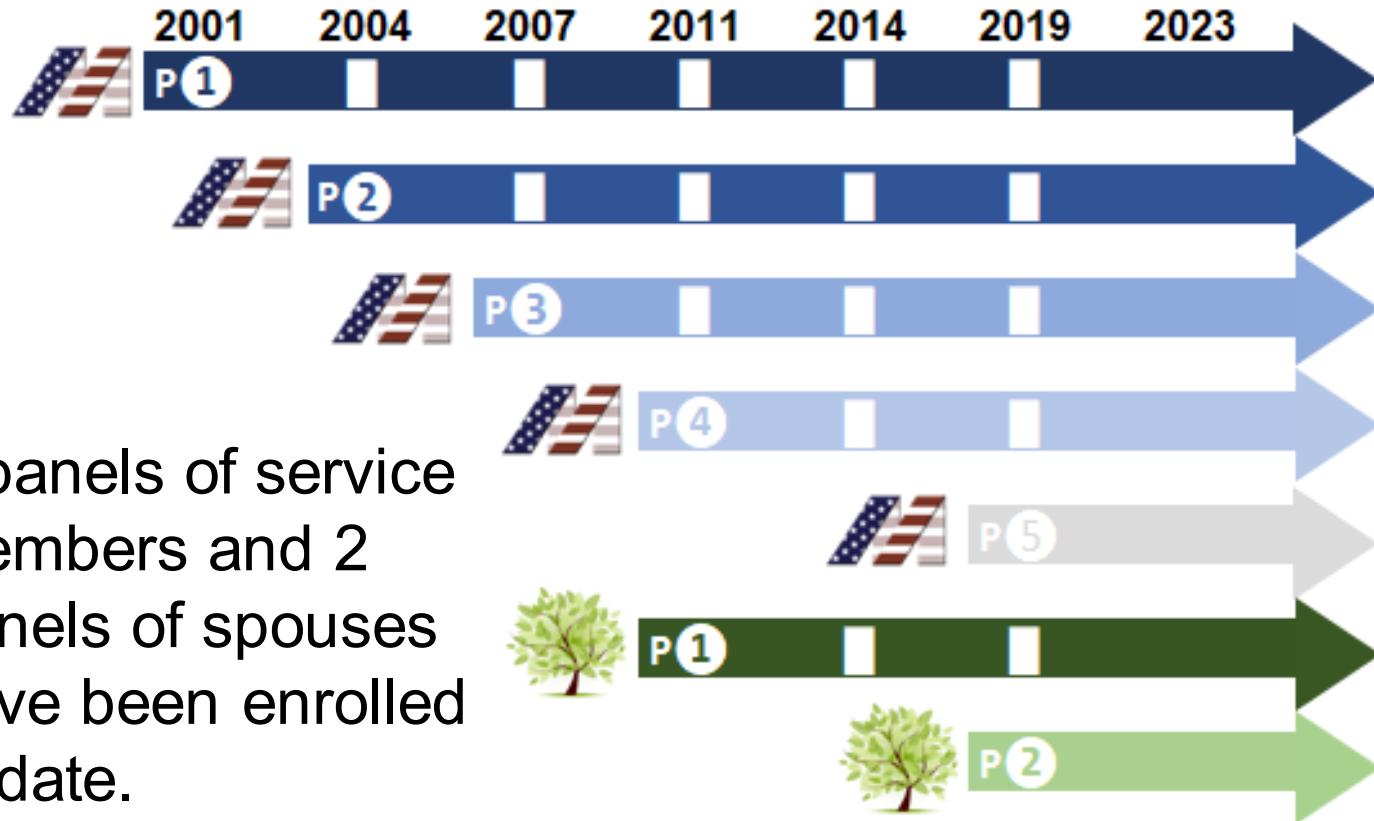
Walsh 2016



# MCP Multi-Panel Design



## Millennium Cohort Program Panels (P#) and Data Collection Cycles



5 panels of service members and 2 panels of spouses have been enrolled to date.

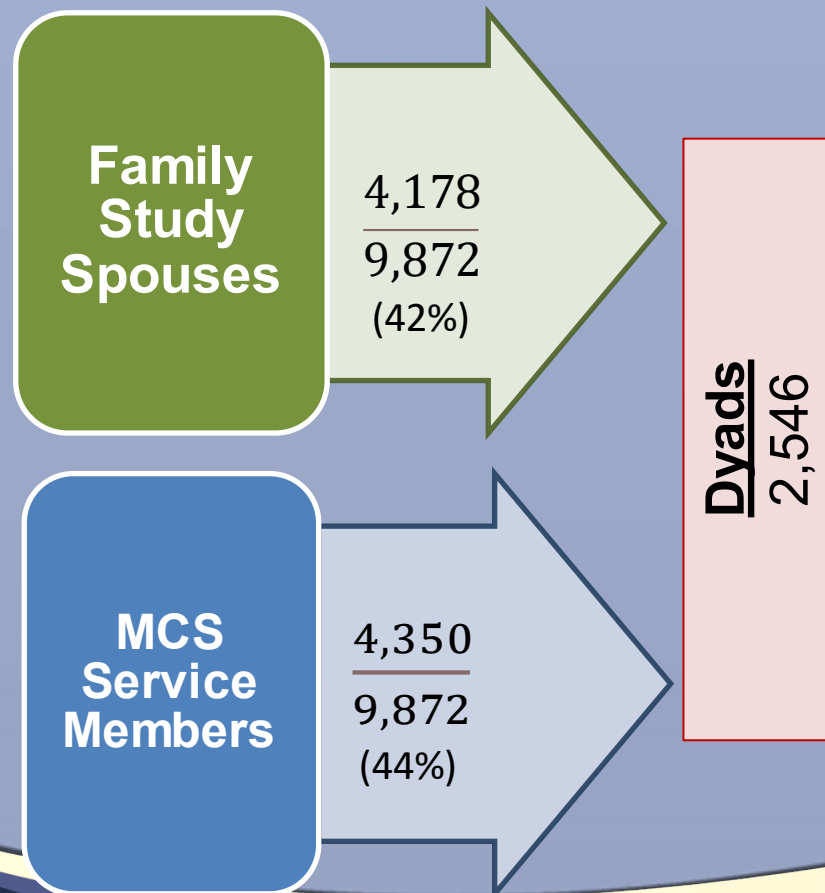


# Family Study Enrollment

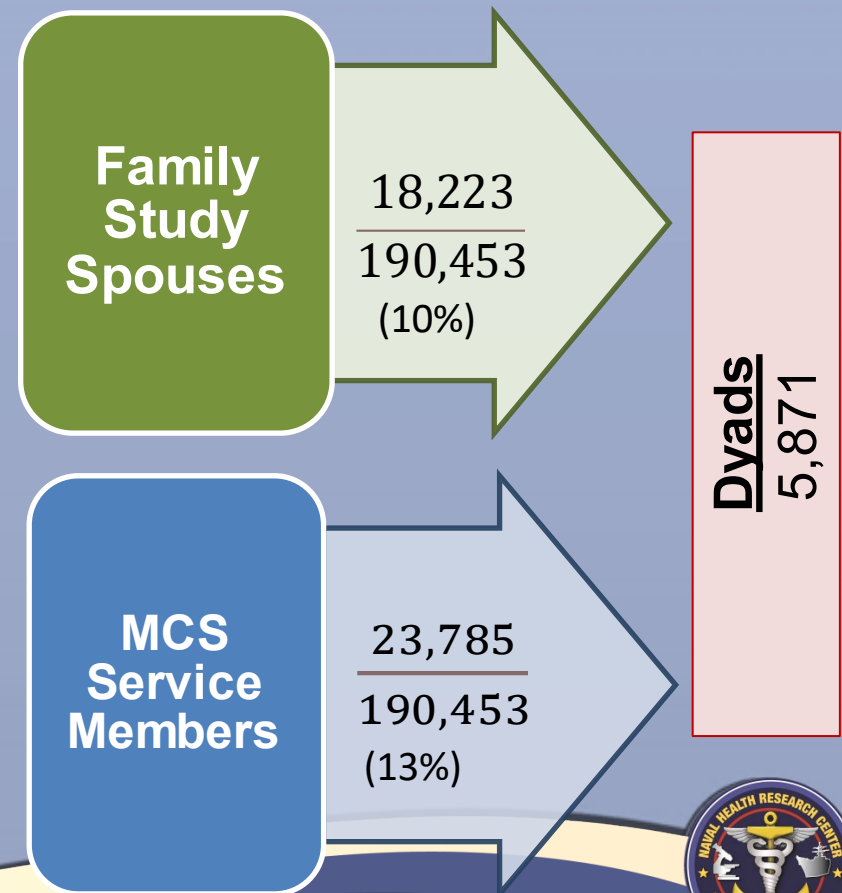
(Panels 1—2)



➤ Family Study Panel 1:  
2019-2021 follow-up



➤ Family Study Panel 2:  
2020-2021 recruitment



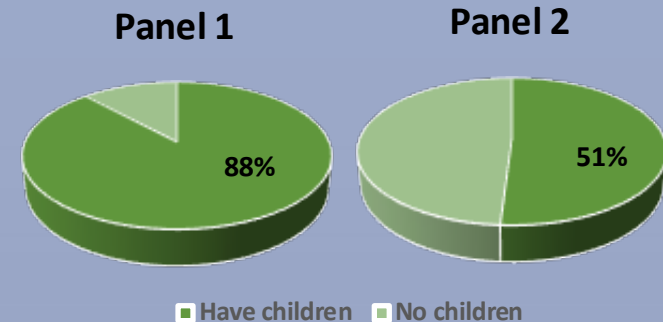
# Millennium Cohort Family

## Profile (Panels 1-2)



Baseline Characteristics		Panel 1	Panel 2
<b>Gender</b>	Male	13%	11%
	Female	87%	89%
<b>Age</b>	17-24	41%	29%
	25-34	49%	62%
	35 plus	10%	9%
<b>Race</b>	White	78%	67%
	Black	4%	6%
	Other	18%	27%
<b>Service</b>	None	82%	89%
	Dual-military	9%	6%
	Veteran	9%	5%

Current Status		Panel 1	Panel 2
<b>Age (mean years)</b>		37.3	27.7
<b>Marriage</b>	Married	85%	97%
	Separated	3%	2%
	Divorced/Widowed	12%	1%





# MCP Data Resources



## Survey Data

MCP self-report survey content covers a broad range of topics:

1. Physical health
2. Health behaviors (e.g., sleep, substance use)
3. Mental health
4. Strengths and resources
5. Life stressors
6. Military service and experiences

Family Study also examines:

1. Marital quality and functioning
2. Parenting and child well-being
3. Family resilience and readiness

## Archival Data

MCP data are linked to multiple external data sources. Additional resources:

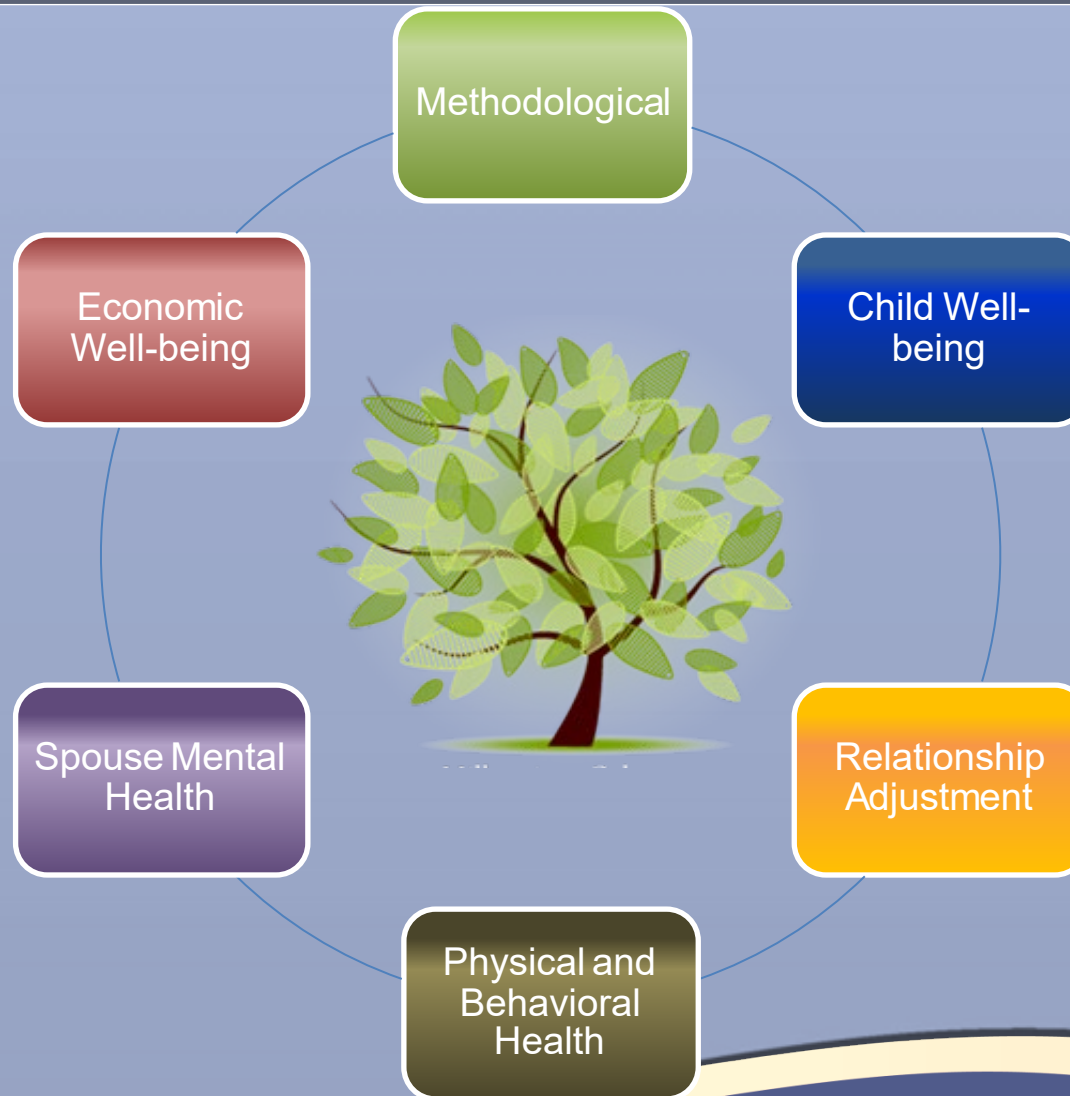
1. TRICARE inpatient/outpatient data
2. Pharmacologic prescription data
3. Immunization records
4. Personnel administrative records
5. Military deployment history
6. Mortality (SSA, VA, NDI, AFMES)
7. Family Advocacy Central Registry
8. VA medical care and benefits data
9. Education (National Clearing House)
10. OPA epidemiology surveys



# Millennium Cohort Family Study: Veteran Family Research



# Family Study Research Portfolios



# Current Research Focus



Health Behaviors

Substance Use

Spouse Caregiving

Economic/Occupational Outcomes

Adverse Childhood Events

Community Impact on Families

Service Separation & Transition

Interpersonal Aggression



# Service Separation & Transition



## Recent Publications

- Corry, N. H., et al. (2022). "Families serve too: Military spouse well-being after separation from active-duty service." *Anxiety Stress & Coping Advance* online publication.
- Porter, B., Rodriguez, L., Woodall, K. A., Pflieger, J. C., & Stander, V. A. (2020). Alcohol misuse and separation from the military: A dyadic perspective. *Addictive Behaviors, 110*, 1-8.
- Richardson, S. M., Pflieger, J. C., Hisle-Gorman, E., Briggs, J. A., & Stander, V. A. (in review). A prospective examination of family separation from military service and children's externalizing symptoms. *Child Development*.
- Woodall, K., Esquivel, A., Powell, T., Riviere, L., Amoroso, P., & Stander, V. A. (2022). Influence of family factors on service members' decisions to leave the military. *Family Relations*, advance online publication, 1-20.



# Child Transition Outcomes



Prospective examination of family separation from military service and children's externalizing symptoms

- Overall, military separation was unrelated to change in children's externalizing. However, there were moderating effects:
  - Spouses' part or full-time employment prior to separation predicted less child externalizing over time for those who separated, but not those who remained in the military.
  - While strong parenting alliances were important for all families in reducing child externalizing over time, there was a particularly strong effect for families that remained in the military.



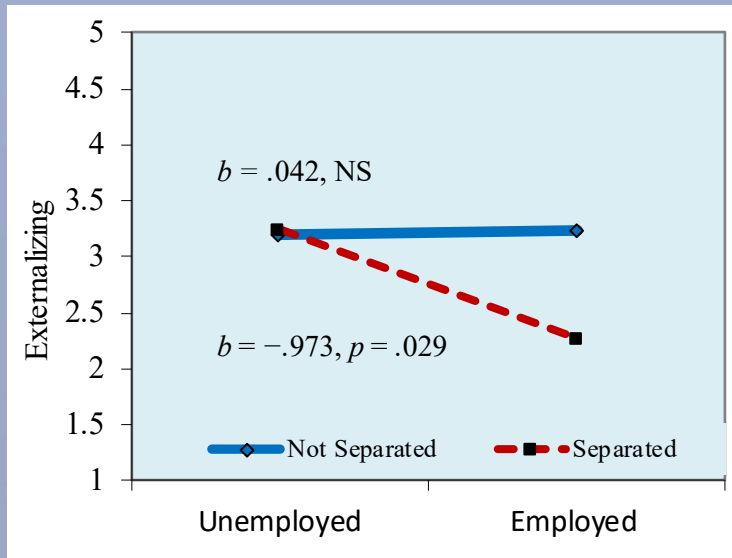
Photo By: Air Force Senior Airman Kristin Weathersby  
Air Force Staff Sgt. Albert Hannah and son Kayden Hannah pose for a photo at Holloman Air Force Base, N.M., April 4, 2022  
<https://media.defense.gov/2022/Apr/21/2002981421/-1/-1/0/220329-F-UH828-933.JPG>



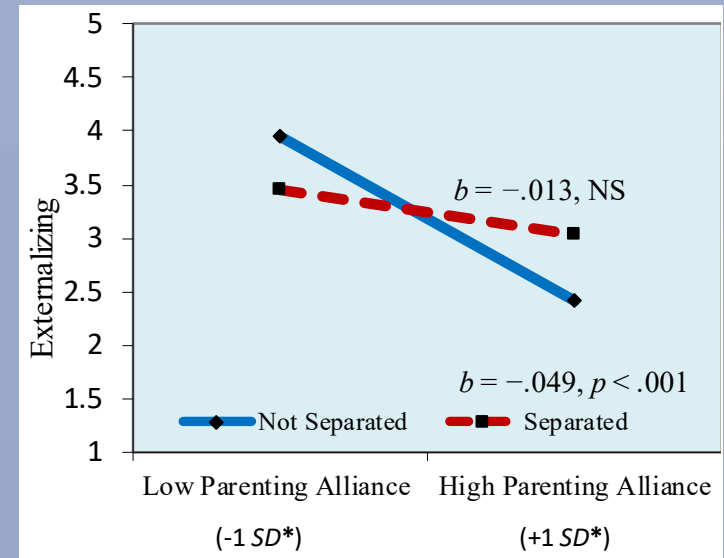
# Child Transition Outcomes



### Relationship of Spouse Employment Status With Child Externalizing



### Relationship of Parenting Alliance With Child Externalizing



Note.  $N = 909$ . Simple slopes are unstandardized. \*SD = Standard deviation. NS = not significant



# Dual-military & Veteran Spouses



## Recent Publications

- Corry, N. H., Williams, C. S., Radakrishnan, s., McMaster, H. S., Sparks, A. C., Briggs-King, E., Karon, S. S., & Stander, V. A. (2021). Demographic variation in military life stress and perceived support among military spouses. *Military Medicine*, 286, 214-221.
- Schvey, N. A., Burke, D., Pearlman, A. T., Britt, T. W., Riggs, D. S., Carballo, C., & Stander, V. (2022). Perceived barriers to mental healthcare among spouses of military service members. *Psychological Services*, 19(2), 396-405
- Woodall, K., Esquivel, A., Powell, T., Riviere, L., Amoroso, P., & Stander, V. A. (2022). Influence of family factors on service members' decisions to leave the military. *Family Relations*, advance online publication, 1-20.
- Woodall, K. A., Richardson, S. M., Pflieger, J. C., Hawkins, S. A., & Stander, V. A. (2020). Influence of work and life stressors on marital quality among dual and nondual military couples. *Journal of Family Issues*, 1-20.





# Perceptions of Stress & Support



- About 1 in 20 personnel are in dual-military marriages, but among female personnel it is about 2 in 10.
- Some research suggests personnel in dual-military marriages may experience more military life stress.
- Unexpectedly, Family Study dual-military spouses reported less military life stress and more social and military support, compared to civilian spouses.
- Veteran spouses reported less military life stress, but also less support from the military than civilian spouses (no differences in social support).



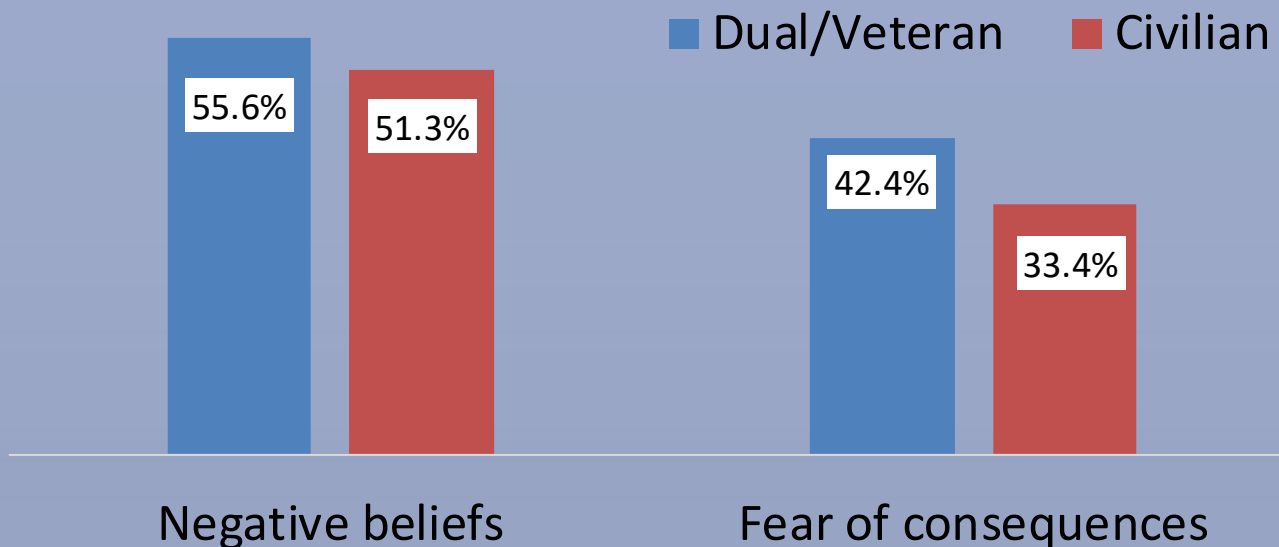
<https://www.defense.gov/Multimedia/Photos/igphoto/2001992405/VIRIN:212453-G-LMB09-769.jpg> U.S. Navy Lt. Larry Mahan and his wife, Capt. Vanessa Mahan, celebrate their first anniversary



# Help-Seeking Barriers



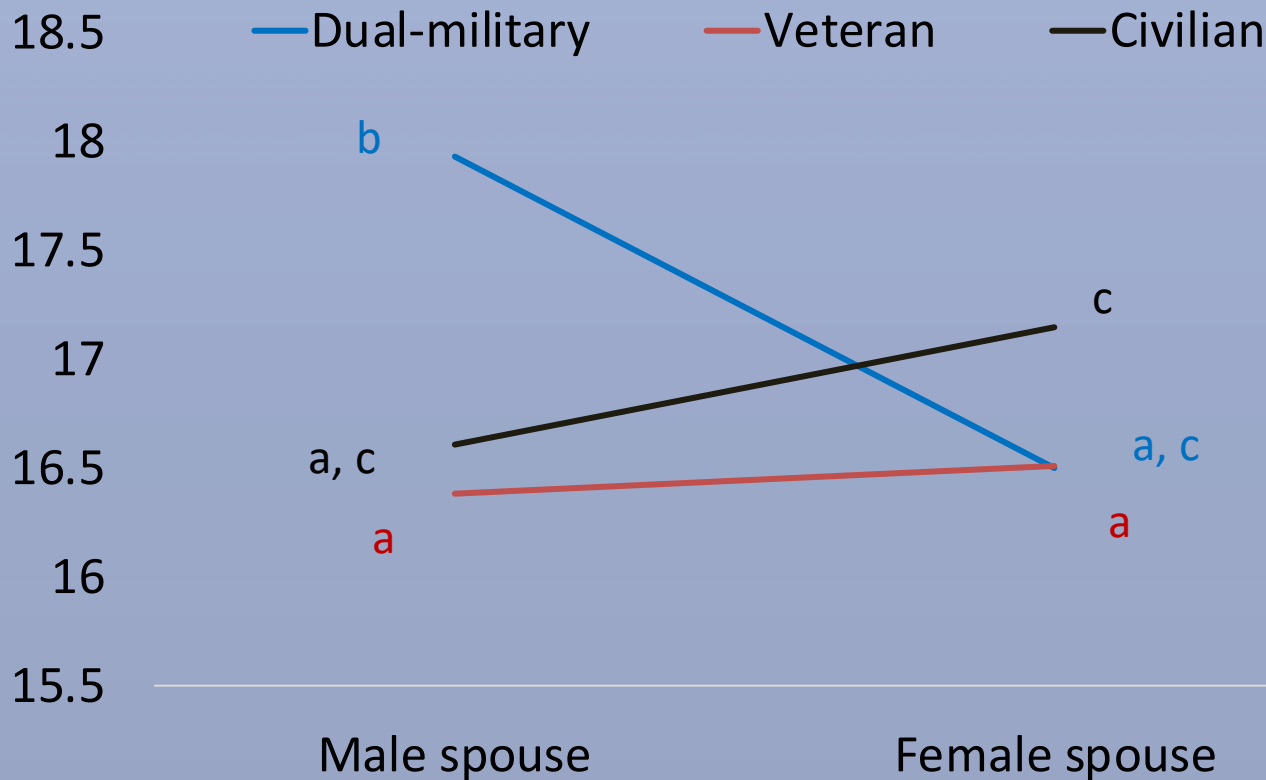
- In a study of Family Study spouses, perceived stigma, fear of social or occupational consequences, negative beliefs about mental health, and logistic barriers (e.g., time, cost) all reduced the likelihood of help-seeking
- Dual-military and Veteran spouses reported **more negative beliefs about mental health care and greater fear of negative consequences.**



Note: Differences significant at  $P < .05$  adjusted for gender, age, and race/ethnicity.



# Relationship Well-being



- Marital quality was not different for men and women overall.
- Veteran spouses' mean marital quality scores were lowest.
- Male-dual military spouses had the highest marital quality.

Note: Letters that are different indicate unadjusted mean differences. Note that in adjusted analyses, female dual-military spouses' marital quality was significantly lower than both dual-military male and civilian female spouses.



# Relationship Well-being



## WORK AND LIFE STRESSORS AMONG NON-DUAL AND DUAL-MILITARY FAMILIES

### Balancing work and family is especially challenging for dual-military couples.

For the over 700,000 military couples in the United States, balancing the competing demands of work and family can be difficult; for dual-military couples, this can be even more challenging.



6.7% of military members are in a dual-military marriage\*



Women are 5 times more likely to be married to another service member compared to men



Dual-military couples reported fewer military stress experiences (deployment, injury, intensified training schedule, PCS)



Military stress experiences were related to lower marital satisfaction through increased work-family conflict



Women in dual-military marriages reported lower marital quality than dual-military men or civilian spouses

### Insights to action

Study findings include these recommendations:

- Know what to expect in a [dual-military marriage](#).
- Make a plan to spend quality time with spouse and family, particularly when work stress is high. [Marriage enrichment programs](#) can help.
- Take advantage of military programs to reduce work-related stress: [deployment readiness support](#), [relocation assistance](#), and [military and family support centers](#).

U.S. Department of Defense. 2019 Demographic profile of the military community. Retrieved from <https://www.militarypersonnel.mil/ia-research-and-statistics/military-community-demographics/2019-demographic-profile>  
Source: Woodall, K. A., Richardson, S. M., Pflieger, C. C., Hawkins, S. A., & Standen, V. A. (2020). Influence of work and life stressors on marital quality among dual and nondual military couples. *Journal of Family Issues*, 41(11), 2045–2064.

For more information, go to <http://www.familycohort.org>

The Millennium Cohort Family Study follows nearly 10,000 spouses of junior military personnel for 21 years to help the Department of Defense understand the needs of families and provide better support.



- Dual military spouses (versus civilians) reported less military life stress
- Dual military spouses reported less work–family conflict than civilians.
- Spouses who reported more military life stress had significantly higher work–family conflict and lower marital quality.
- Work-family conflict mediated the relationship between military life stress and lower marital quality.
- Spouses’ military status did not moderate the association of work-family conflict on marital quality.



# Intimate Partner Violence



## Recent Contributions

- Stander, V. A., Woodall, K. A., Richardson, S. M., Thomsen, C. J., Milner, J. S., McCarroll, J. E., Riggs, D. S., & Cozza, S. J. (2021). The role of posttraumatic stress symptoms and negative affect in predicting substantiated intimate partner violence incidents among military personnel. *Military Behavioral Health, 9*, 442-462.  
<https://doi.org/https://doi.org/10.1080/21635781.2021.1953644>
- Portnoy, G. A., Rodriguez, A., Kroll-Desrosiers, A., Kessner, M. A., Walls, S., Parkes, D. J., Bruce, L. E., Estabrooks, E. A., & Yano, E. (2022). *Prevalence of Intimate Partner Violence (IPV) among Veterans: A secondary analysis study. [Unpublished report]. U.S. Department of Veterans Affairs*



# Intimate Partner Violence



- Intimate Partner Violence (IPV) Report
  - VA tasked with establishing prevalence of IPV among Veteran families (Veterans Health Care and Benefits Improvement Act of 2020, Section 5305)
  - Millennium Cohort Family Study asked to contribute to a meta-analysis of existing data on IPV among Veterans.
  - Planned follow-on work with the Veteran's Affairs IPV Center for Innovation and Research (IPV-CIR).



Photo By: Marine Corps Lance Cpl. Jacob Wilson  
Marine Corps Sgt. Cameron Demaison helps his wife, Brooke, advance through an obstacle course at Marine Corps Base Hawaii, Dec. 13, 2018  
<https://www.defense.gov/Multimedia/Photos/igphoto/2002074064/>



# Millennium Cohort Family Study: Research Collaborations



**Do you conduct  
research with  
military and/or  
Veteran families?**



# MCP-VA Collaboration



- VA Cooperative Studies Program (CSP) #505: Millennium Cohort Study (Dr. Edward Boyko): longstanding research collaborator
- Bidirectional VA data linkage established (2021)
  - VA healthcare utilization, disability, and benefits data
  - MCP data access for VA researchers
  - Newly funded studies
    - Parkinson's disease (Michael J. Fox Foundation)
    - Melanoma (CDMRP)
- MCS-Million Veteran Program (MVP) co-enrollment (~10,000)



Photo By: Air Force Senior Airman Kristin Weathersby  
<https://www.defense.gov/Multimedia/Photos/igphoto/2002980818/>





# Research Collaboration



- MCP subject matter experts and collaborators come from military, Veteran and academic organizations.
- MCP research collaborations are essential to the program.
- The MCP:
  - Seeks external subject matter experts as coauthors on projects
  - Accepts proposals from external investigators to lead relevant projects
  - Has a committee that assists in reviewing concept sheets for new projects
  - Facilitates data use agreements to provide access to de-identified data
  - Has limited staffing to provide analytic support for research collaborations
  - Does not provide monetary support for external research projects
  - Participates in grant writing with research partners



The research questions fall within the objectives of a Millennium Cohort Program (MCP) portfolio.

The MCP study design can optimally address the research questions.



# Research Priorities

A written military requirement states a need for the research.

A stakeholder requests the work, asserting its military relevance.

The work addresses a knowledge gap in the research literature.

There is an ethical need for the research

Results could help large numbers or growing subgroups.

The research is needed to establish the scientific rigor of the MCP.

The military relevance of the work is clearly evident.

The work promotes collaboration with low burden and/or leveraged funds.

5

4

3

2

1

No STOP

## Priority Weighting



# Audience Questions

