



CHAMP
Consortium for Health and Military Performance

**CONSORTIUM FOR
HEALTH AND MILITARY
PERFORMANCE**

2023

ANNUAL REPORT

A large, circular gold medal with a red, white, and blue ribbon. The medal is positioned in the upper right quadrant of the cover. The text "CHAMPIONS OF HUMAN PERFORMANCE" is written in white, bold, sans-serif capital letters across the center of the medal.

**CHAMPIONS
OF HUMAN
PERFORMANCE**



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Executive Director's Letter

Last year was quite notable, and this report highlights our team's accomplishments.

I'd also like to acknowledge key successes across our pillars of Research and Scholarship, Education and Training, Leadership, and Operational Support. This starts with Director of Strategic Communications, Ayanna Shivers, who leads external and internal communication efforts, and Chief of Operations and Finance, Carolyn Chou, who keeps us on track with meeting our goals.

Under Nancy Kwon, director of Research and Scholarship, CHAMP submitted 19 proposals, and funding for two of the seven new projects was awarded to junior principal investigators Drs. Emily Ricker and Dan Clifton. Kudos also go out to Director of Human Performance Optimization (HPO) Education and Training, Dr. Lauren Messina, and Director of Performance Psychology, Dr. Gloria Park, for securing funding for the U.S. Coast Guard Resilience Coordinator curriculum and U.S. Army Office of the Chief of Chaplains social and spiritual fitness programs, respectively. These achievements help solidify CHAMP's role as paraprofessional health-and-performance educators in the federal space.

In terms of leadership and operational support, CHAMP published three articles on the 2022 Total Force Fitness (TFF) and TFF-Whole Health summits in *Military Medicine*. CHAMP also hosted two summits: Dr. Sarah de la Motte, director of Fitness and Injury Prevention, organized and presented at the TFF Musculoskeletal Summit, and Andrea Lindsey, director of Operation Supplement Safety, led the OPSS Summit. Kudos also go out to the Capability-Based Blueprinting team, with Dr. Rachel Chamberlain as the lead, who briefed Air Force leaders during their Senior Munitions Managers Conference. The team shared recommendations that leaders could take back to their unit communities to improve well-being and performance.



Another CHAMP undertaking was an External Review, led by Deputy Director CAPT J. Russell Linderman. Overall, preparing for the External Review was a terrific opportunity to review CHAMP products, foster awareness of our capabilities, and identify opportunities for future success.



One final remembrance is the dedication and naming of the Human Performance Laboratory after me. The ceremony made me proud of all the work that Chief Medical Officer, Dr. Francis O'Connor, and I have done over the past 27 years. Without his friendship and support—and our love of helping Warfighters—none of this would have happened.

My appreciation and respect for CHAMP leaders and staff—the CHAMPions—are unparalleled, and I'm grateful to those with whom I have worked over the years.

Patricia A. Deuster

Patricia A. Deuster, PhD, MPH
Acting Executive Director, Consortium
for Health and Military Performance

CHAMP Leadership



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CHAMPions of Human Performance

MISSION & VISION

The Consortium for Health and Military Performance (CHAMP) is the premier Department of Defense (DoD) readiness resource for Human Performance Optimization (HPO) across the Total Force Fitness (TFF) domains in support of DoD operations. CHAMP aims to expand HPO collaborations with federal partnerships, uniting efforts to improve the performance and resilience of Service Members and their families.

STRATEGY & OPERATIONS

CHAMP leaders maintained efforts to efficiently improve communications and processes to be more effective across all four pillars: **Research and Scholarship, Education and Training, Leadership, and Operational Support**. The objectives of each pillar support Warfighter lethality by employing a TFF orientation and systems-based approach to HPO and implementing a holistic and integrative framework of HPO and TFF at multiple levels.



Research & Scholarship



Education & Training



Leadership



Operational Support

We continue to pursue funding for new TFF projects and collaborate with our partners to share CHAMP content through hosted summits and social media campaigns. Our teams also compile program metrics and track short- and long-term impacts of research publications and related educational products. In addition, our outreach efforts highlight our different methods to reach Service Members—from airing Human Performance Resources by CHAMP (HPRC) commercials on the Armed Forces Network to Operation Supplement Safety (OPSS) team members providing presentations on dietary supplements for Service Members, healthcare personnel, and allied health professionals across the military community. We also continue to optimize users' website experiences by making content actionable, more accessible, and easier to find on HPRC-online.org and OPSS.org. CHAMP leadership continues to communicate our goals and successes with Uniformed Services University of the Health Sciences (USU) stakeholders and Service-specific leaders to improve our programs, highlight our strengths, and extend our reach to broader DoD communities.

CHAMP 2023 Accomplishments



RESEARCH & SCHOLARSHIP

Physical Fitness & Musculoskeletal Injury (MSK-I)

Joint Incentive Fund (JIF) with Comprehensive Health and Musculoskeletal Prediction, Intervention, and Optimization (CHAMPION)

The CHAMPION team collaborated with the Office of Women’s Health, Department of Veterans Affairs (VA), to create a shared analytical infrastructure between VA and DoD. This allows our team to develop models for predicting active-duty Service Members’ and Veterans’ future health risks and status as a function of their administrative and health data, with a focus on how MSK-I and chronic pain impact well-being. We received funding in 2023, and study planning began to determine processes for combining VA and DoD data and to identify report information collected from focus groups.

Proteomic Profiles Associated with Stress Fractures

Lower-extremity stress fractures (LE SFx) are a common MSK-I during military training that can lead to lost training time or attrition. The Injury Prevention Research Laboratory (IPRL) team used a proteomics approach combined with movement screening to determine if protein profiles, biomechanics, or both are associated with an increased risk for LE SFx among cadets at the U.S. Military Academy (USMA), West Point, New York. Serum samples acquired from cadets upon entry to USMA and stored in the DoD Serum Repository were used to conduct proteomics analysis. Proteins identified in cadets who sustained LE SFx in their first year at USMA (cases) were compared to age- and sex-matched cadets who did not (controls). The proteomics analyses were completed, and manuscript preparations are underway.

Initiation of Marine Physiological Combat Training (IMPACT) and Reducing Injuries with Training Enhancement, Targeted Rehabilitation, and Core Conditioning (RITE-TRACC I)

The IPRL team conducted the IMPACT study at The Basic School (TBS) at Marine Corps Base (MCB) Quantico to characterize successful officer graduates from the Basic Officer Course (BOC). The primary goal was to develop multivariate, multidisciplinary models for predicting officer performance during BOC training, including MSK-I and graduation outcomes. Prospective data were collected on nine cohorts between 2017 and 2019 for over 1,600 Marine officers. Study results were presented at the Tri-Service Nursing Program’s Women In Combat Summit, the International Congress on Soldiers’ Physical Performance, and several other forums.



Drs. Sarah de la Motte and Francis O’Connor attend the International Congress on Soldiers’ Physical Performance in London, UK.



RESEARCH & SCHOLARSHIP

RITE-TRACC I team members investigated potential risk factors associated with lower-extremity MSK-I during infantry training at the School of Infantry – West (SOI-W) at MCB Camp Pendleton. Prospective data on injury history, functional movement, physical fitness, lifestyle behaviors, and psychosocial status were collected for 1,100 Marines who were followed from enlistment to graduation between 2016 and 2019. Our team implemented study results into a targeted injury-prevention curriculum that is being used in a subsequent study, outlined below.

Following extensive statistical analyses on both projects, the final IMPACT report was presented to TBS command in May, and manuscript preparation for both projects is underway.

Effects of a Targeted Injury Reduction Program at U.S. Marine Corps West Coast Entry-level Training (RITE-TRACC II)

The IPRL team is conducting the RITE-TRACC II study in collaboration with the Naval Health Research Center to identify barriers to prompt MSK-I reporting in Marines and their instructors at SOI-W and Marine Corps Recruit Depot – San Diego (MCRD-SD). The project will also assess the impact of 1) targeted injury-prevention curriculum intervention and 2) an embedded certified athletic trainer (AT) intervention at SOI-W on care-seeking, MSK-I rates, training

outcomes, and MSK-I reporting. In 2023, the study team enrolled over 1,300 participants and completed survey and focus-group data collection at both sites. In 2024, the team will start integrating the targeted injury-prevention curriculum into training at SOI-W and MCRD-SD. The team is also working on a transition plan for the embedded AT to move from an intervention to implementation by SOI-W command. Project results will provide guidance to update policies and a prevention-and-remediation plan for MSK-I in athletic populations.

Predicting and Preventing Back Pain in Aircrew

The IPRL team is collaborating with the Ohio State University Spine Research Institute (OSU-SRI) to use a novel device (Conity system) to characterize spine kinematics in military aircrew. The study team worked with naval aeromedical safety officers to obtain command support and coordinate data collections. In 2023, 75 participants were screened and consented from three DoD aviation sites: Naval Air Station (NAS) Patuxent River, Maryland; NAS Oceana, Virginia; and MCB Quantico, Virginia. Data collection will continue into 2024. The team will combine kinematic data with health- questionnaire data to explore factors related to self-reported low back pain. We also will use these findings to develop a low-back-pain prevention-and-wellness program for aviation sites.





RESEARCH & SCHOLARSHIP

Evaluation of U.S. Army Master Fitness Trainer Utilization

This is a newly funded collaborative study with the U.S. Army Research Institute for Environmental Medicine (USARIEM) and the U.S. Army’s Holistic Health and Fitness (H2F) Academy. The study team will assess the impact of Army Master Fitness Trainers (MFTs) on MSK-I outcomes and physical readiness, and determine whether factors included in questionnaires—such as the MFTs’ knowledge, characteristics, or utilization—are associated with positive impacts. The ongoing study will include H2F Academy site visits and distribution of questionnaires to MFTs and unit leaders across the U.S. Army.

Hormonal Contraceptive Use and Stress Fracture Risk

This newly funded retrospective study assesses the association between different types of hormonal contraception and stress-fracture incidence among early-career (first six and 18 months of Service) female Service Members. The secondary aim is to assess the relationship between the type of hormonal contraception and military separation for those females who experience a stress fracture early in their career. To investigate the aims, the study team will use the existing Medical Assessment and Readiness System (MARS), a longitudinal military-specific database that houses administrative, installation, health, performance, and readiness records.

Musculoskeletal Outcomes and Readiness (MORE)

The MORE team continues to expand the MARS dataset housed at Womack Army Medical Center (WAMC) to include administrative and medical records of active-duty Service Members (conventional and Special Operations Forces) from 2011 to present, as well as U.S. Military Entrance Processing Station data. The team analyzed data on factors associated with return-to-duty time after musculoskeletal-related duty restrictions, impact of orthopedic surgeons in non-training military settings, risk of sustaining an MSK condition after suffering a concussion, and longitudinal associations between back pain and mental health disorder diagnosis or symptoms. We continue to develop this information for peer-reviewed manuscripts, abstracts, presentations, and other deliverables for the Office of the Assistant Secretary of Defense – Health Affairs (OASD-HA) in support of best practices in the military health system.





RESEARCH & SCHOLARSHIP

JIF with Active Duty and Veterans' Holistic Musculoskeletal Management and Enhancement (ADVet-HOMME)

The ADVet-HOMME team and their partners at the Dayton VA Medical Center (VAMC) hosted a three-day MSK Health Training Program in Dayton, Ohio in April. Since 2022, the team trained 30 VA and DoD healthcare providers with MSK assessment skills, and those providers refer eligible patients to the virtual rehabilitation platform hosted on the HPRC website. On this platform, USU and Dayton VAMC health-and-exercise coordinators guide patients to perform specific exercises within the Rehab, Refit, Return to Duty (Rx3) program. The release of the Rx3 app in 2023 made it even easier for participants to access their rehabilitation exercises. The study team presented on ADVet-HOMME at the Military Health Systems Research Symposium (MHSRS) to increase awareness and outreach within the military medical community. Another MSK health-training program is planned for DoD providers in January 2024 in Bethesda, Maryland.

Wearable Spine Health System for Military Readiness Assessment

The IPRL team received a new subaward from OSU-SRI for a wearable spine study with the Air Force Research Laboratory to characterize and explore the utility of the Conity system to longitudinally assess low-back and neck function.

The Conity system will capture participant data using non-invasive wearable motion sensors and digital questionnaires. Our team will recruit participants from multiple sites—including USU, MCB Quantico, NAS Patuxent River, Joint Base Andrews, and Alexander T. Augusta Military Medical Center (formerly Ft. Belvoir Community Hospital)—and track them for 12 months following baseline assessments.

MSK3C – Focus on Rehabilitation of Musculoskeletal Injuries from Training

In 2022, the Defense Health Agency (DHA) funded an integrated effort among three USU research programs—Musculoskeletal Injury Rehabilitation Research for Operational Readiness (MIRROR), CHAMP, and the Center for Health Services Research (CHSR)—to address deployment-limiting MSK conditions. Each program will contribute findings from their sub-studies to joint-knowledge products for improved MSK-I clinical care. CHAMP is leading four sub-studies focused on describing and assessing current MSK-I prevention practices within the military.

Musculoskeletal Injury Prevention: A Holistic and Big Data Approach. This sub-study will use MARS data to address MSK conditions and health-related topics, including 1) change in incidence of MSK conditions as a result of the U.S. Army's new physical fitness tests, 2) impact of a large holistic health program



The ADVet-HOMME team and their partners at the Dayton VA Medical Center host a three-day MSK Health Training Program in Dayton, Ohio.



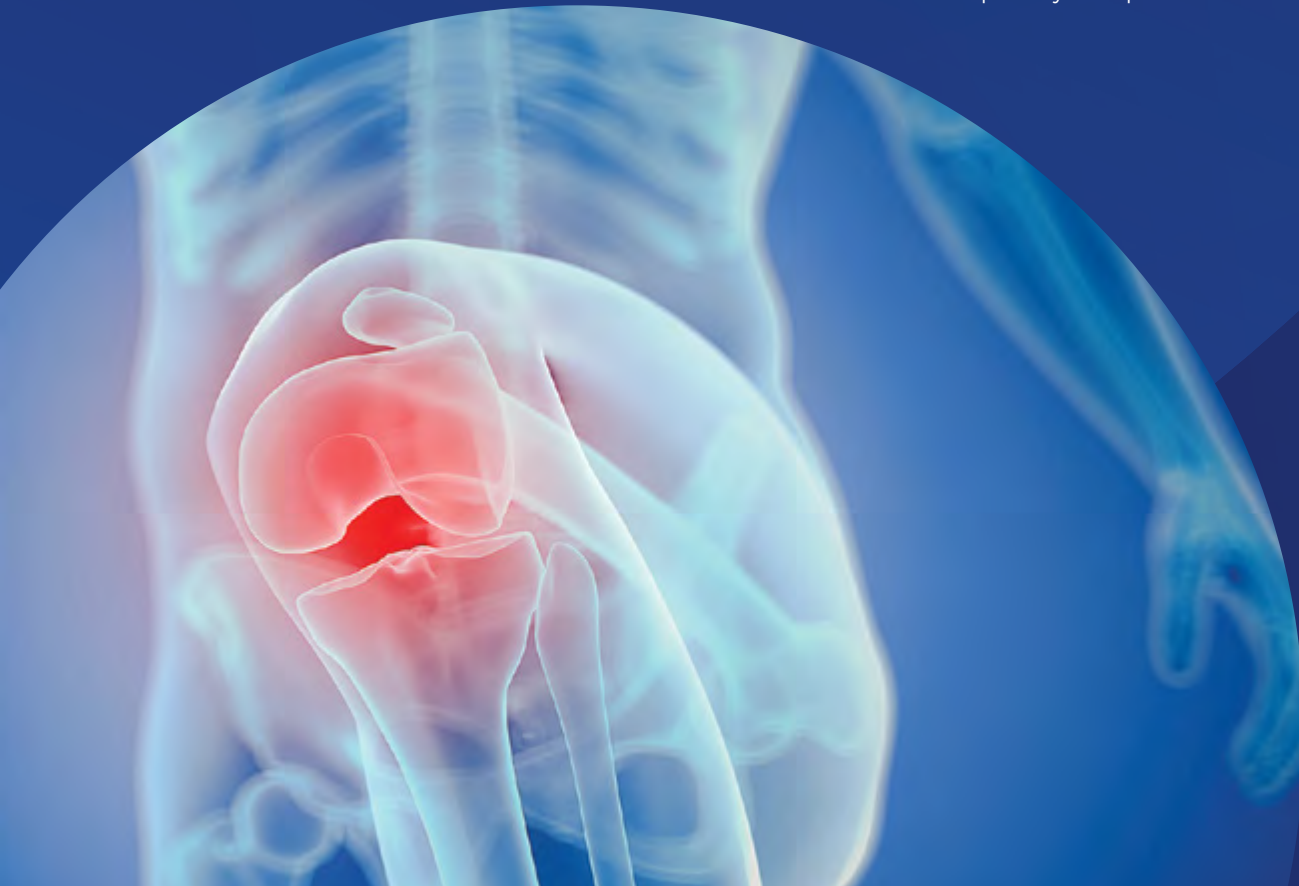
RESEARCH & SCHOLARSHIP

(H2F) on MSK health and knee conditions in the Army, and 3) rates and risk factors for incidents of tendinopathy. At the 2023 MHSRS, we presented findings on the association between H2F deployment and a reduction in non-steroidal anti-inflammatory dispensations. In addition, we plan to analyze topics related to prognosis associated with MSK conditions and impact of embedded health-and-performance programs.

Impact of Team-Based and Individual Practitioner Characteristics on MSK-I Outcomes. The sub-study aims to evaluate the impact of individual and team-based characteristics of MSK experts serving on Human Performance Teams (HPT). We received project support from U.S. Air Force Operational Support Team (OST) leadership and are working to obtain buy-in from U.S. Marine Corps Sports Medicine Injury Prevention (SMIP) leadership.

Hormonal Contraceptive Use and Stress Fracture Risk. The goal of this sub-study is to build upon the existing study to assess if incidence and recurrence of SFx at different anatomical sites (e.g., femoral neck, tibia) vary based on the type of hormonal contraceptive. Our findings could directly impact clinical guidance for hormonal contraceptive choices among female populations at heightened risk for SFx.

Improving Musculoskeletal Care for Active-Duty Service Members through Primary Care Provider Education and Holistic Self-Guided Rehabilitative Care. The sub-study team conducted outreach and held meetings at different sites with potential DoD providers to determine where the need for MSK-I education exists and how to best implement education and training. This effort began with two half-day MSK-I training lectures and hands-on labs with USU Graduate School of Nursing Family Nurse Practitioner students and a two-day MSK-I training course with primary-care providers at Ft. Cavazos, Texas.





RESEARCH & SCHOLARSHIP

Nutrition & Dietary Supplements

Military Nutrition Environment (MNE), Go for Green® (G4G), and Military Nutrition Environment Assessment Tool (mNEAT)

The military nutrition environment includes all food, drink, and dietary supplement options available in local military settings. CHAMP leads two key strategies to assess and improve access, availability, and awareness of high-performance options to contribute to a more supportive MNE: the mNEAT app and the Go for Green® program. CHAMP continued to host and manage the mNEAT app to support 425 users and over 3,400 submitted assessments to increase the knowledge of DoD’s food landscape. In addition, our team used mNEAT to evaluate and improve local food environments for 1,493 venues. To date, a total of 2,782 venues in 133 installations worldwide have been assessed with this tool.

In the research line of effort, CHAMP facilitated the MNE process and mNEAT evaluation at seven Navy sites, including five in-person site visits by the MNE team. The majority of these sites chose to focus on improving G4G program implementation efforts. The team also completed four G4G pilot studies and partnerships (including one in-person site visit) and 18 consultations for facilities across DoD.

The MNE team also translated its research findings into education through new and continued efforts. Specifically, we developed 44 marketing and educational products (including 13 customized products for 12 sites) and managed G4G program resources on the HPRC website, including over 2,700 G4G-coded recipes and a ready-to-use item database of over 1,300 G4G-coded items. In 2023, CHAMP launched the MNE section on the HPRC website to showcase the MNE process with corresponding resources, and highlight how to access and use the mNEAT app. In addition, the MNE team disseminated knowledge through DoD work groups, peer-reviewed publications, conference poster abstracts, and high-level presentations.

The G4G team continued to promote access, availability, and awareness of high-performance foods at three pilot sites (109th Airlift Wing, Scotia, New York; Sagami Army General Depot, Kyogamisaki Communications Site Warrior Restaurant, Japan; and U.S. Military Academy West Point, New York) and through a partnership with Navy Morale, Welfare, and Recreation (MWR) Fitness that targeted optimization of specific program components, including menu revisions and coding, staff training, and marketing. In addition, the MNE team supported DoD personnel, food service venues, and installations with 241 mNEAT and G4G consultative services.



The MNE team facilitates the assessment process and mNEAT evaluation at Naval Base Kitsap – Bremerton, Washington.

mNEAT



2,782
venues
assessed

2,700
G4G-coded
recipes

133
installations
worldwide

1,300
G4G-coded
items



RESEARCH & SCHOLARSHIP

Immune Health

In collaboration with the Office of Dietary Supplements at the National Institutes of Health, CHAMP completed a systematic review and expert-panel project on dietary supplement ingredients with market claims related to immune health within the context of resilience. The state of the science and expert-panel recommendations for future research directions were published in March.



Herbs & Spices

Phase 1 of the study was successfully executed in 2023 with 75 volunteers completing a background questionnaire to assess knowledge, attitudes, and barriers to vegetable consumption and familiarity with different herbs and spices. Volunteers also taste-tested eight recipes (four plain and four spiced) and provided feedback on five characteristics (appearance, aroma, flavor, texture, and overall appeal) using a nine-point summated Armed Forces Recipe Service rating scale. This study will move into Phase 2 in early 2024, with participants testing prepared meals with and without seasoned vegetables to determine their preferences.

Omega-3 Index

CHAMP completed this study to evaluate changes in cadets' omega-3 index levels at three U.S. Service Academies (Navy, Army, and Air Force). Findings from 198 participants indicate that offering multiple omega-3 food options, including smoothies, for 12 weeks can improve their omega-3 index, and smoothies may be further explored as a post-workout option to enhance muscle recovery. These findings were presented at two professional conferences and published in *Nutrition Research*. The results were also translated into educational materials for the MNE team to educate Service Members on the benefits, availability, and accessibility of omega-3-rich foods to encourage nutritious eating habits.

Effects of Dietary Ingredients on Heat Stress

This research study, funded by the Office of Dietary Supplements at the National Institutes of Health, is currently in Phase 2. In Phase 1, we discovered that heat-induced skeletal muscle injury is characterized by oxidative stress and mitochondrial dysfunction. Notably, we identified specific dietary supplements—curcumin (CUR) and astaxanthin (AST)—that demonstrate protective effects against heat-induced injury. Recent findings indicate that maintaining mitochondrial NAD⁺ homeostasis could also be a therapeutic target for preventing heat-induced skeletal muscle injury. We continue to evaluate the protective efficacy of dietary supplement combinations against heat-stress damage and examine the impact of heat stress on intestinal-barrier and renal functions.





RESEARCH & SCHOLARSHIP

Psychological, Social & Spiritual Fitness (PSS)

The PSS team engaged in a broad range of activities spanning research, program evaluation, and consultation. The team is spearheading innovative exploratory research on teams of multidisciplinary human performance practitioners, examining meaningful intersections between the psychological, social, and spiritual fitness domains of TFF, collaborating on projects related to the physical and nutritional domains, and conducting program evaluation to strengthen the evidence base for social and spiritual fitness programs in DoD. Team members presented at the American Psychological Association annual conference, Mayo/Stanford High Performance Resuscitation Summit, Air Force Research Lab's Contingency Mental Health Summit, VA/DOD Women's Mini Residency, and other invited forums.

At the request of DHA, CHAMP's PSS team will host a TFF Summit on psychological, social, and spiritual fitness in 2024.

Human Performance Team (HPT)

The main goal of this project is to compile and consolidate data to innovate and improve precision of HPO service delivery, and maximize the impact of HPT staff on Warfighter medical and mission readiness. The PSS team will gather information through assessments of HPT staff service delivery, integration within the operational communities, and cross-specialty collaboration. In 2023, the team completed data coding and analysis for 12 focus groups of 68 HPT professionals from a broad range of TFF domains to explore the capabilities that enable integrated and holistic care. Study findings will be translated into a playbook on how to train and deploy HPT staff in operational communities that foster collaboration with existing medical professionals to effectively coordinate and leverage resources for Service Members across their lifespan. In partnership with other CHAMP investigators, the team secured funding for two additional studies exploring individual and

team-based competencies and their relationships to the quality of MSK care in the military.

Evidence-based Spiritual Fitness

This collaborative study with Marine Corps Training and Education Command chaplains aims to obtain spiritual, social, and psychological fitness information crucial for developing evidence-based spiritual fitness programs and services within the context of Total Force Fitness. Its secondary aim is to further validate CHAMP's Spiritual Fitness Scale. The study team collaborated with Marine Corps chaplains and resiliency branch leaders to obtain the necessary study approvals and complete all data collection. Qualitative/focus group data were collected from 32 Marines at Quantico in April, and quantitative/survey data from a total of 576 participants were collected from August to October. All study results are being analyzed with an anticipated completion date in 2024.

Evidence-based Social and Spiritual Fitness Programming

Social and spiritual fitness are key components of health and performance that are considered much less often than physical and psychological factors in programs, despite their direct impact on well-being. This year, the PSS team partnered with the Army Office of the Chief of Chaplains to develop a framework for strengthening the quality, focus, and evidence base of social and spiritual programs within the military with implications for a publicly available program design. To start, the current Building Strong and Ready Teams program will be used as the pilot case for the framework. This multi-year collaboration aims to engage in community-based participatory research to assess the social and spiritual needs of Soldiers and their families. This information, along with reviewing current curricula, will help to strengthen the quality of social and spiritual programs.





RESEARCH & SCHOLARSHIP

Integrative Health & Technology

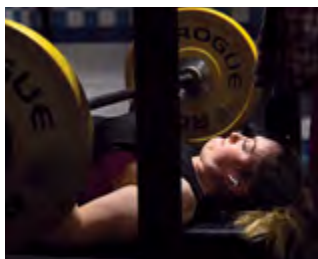
Technology Enhanced Mobile Platform for Performance Optimization (TEMPPPO)

The TEMPPPO app provides an interactive virtual coaching platform to improve Service Member readiness within the TFF framework. Users complete an initial fitness assessment, and the app suggests customized fitness content in the form of challenges, resources, and daily motivational messages. This pilot feasibility study assesses interest in and use of the app to determine whether it can help National Guard members reach and maintain their optimum levels of fitness and readiness. The study team will use several outcomes to evaluate app usability, including user satisfaction, content that influences participant engagement, use by geographically dispersed participants, and the perceived effectiveness of meeting personal TFF goals.

In 2023, the TEMPPPO team successfully recruited over 300 Army National Guard (ARNG) members from Washington, New Mexico, Kansas, Minnesota, Georgia, and Pennsylvania. The team found recruitment was most successful with in-person presentations at Yellow Ribbon events. The team plans to wrap up recruitment and survey-data collection in 2024.

Musculoskeletal and Associated Behavioral-related Outcomes (MSK BH)

The MSK BH project aims to mine big data sources throughout DoD to compile a data set for characterizing the overlap between behavioral health and MSK conditions. Data variables will include both epidemiological/disease burden and treatment-and-prognosis perspectives. The team is currently investigating the interrelationships among back pain, other MSK conditions, and onset of behavioral symptoms. Key data variables have been compiled, and the team intends to publish on this effort and investigate additional topics in 2024.





RESEARCH & SCHOLARSHIP

Environment

Exertion-Related Injuries Study (ERIS)

The ERIS team uses an interdisciplinary approach to determine molecular subtypes of exertion-related injuries (ERI) and aims to develop a framework to translate study findings into clinical practice. Our team continues to evaluate the current, established risk-stratification process for ERI recurrence by tracking Service Members with ERI over two years. The team worked with five main sites in 2023 (USU, Ft. Liberty, Ft. Moore, MCB Quantico, and MCB Camp Pendleton) to collect data. The team initiated the site-approval process for three additional sites (Camp Lejeune, Ft. Belvoir, and Lackland Air Force Base) and expects enrollment to begin at these sites in 2024. In addition, participants are directly referred from our network (U.S. Naval Academy, Ft. Cavazos, Joint Base Lewis-McChord, USMA, Ft. Campbell, Ft. Knox, Ft. Jackson, and Ft. Drum), which expanded this year to include Ft. Stewart, Ft. Polk, and Marine Corps Recruit Depot Parris Island. We enrolled 92 participants and conducted 17 heat tolerance tests in 2023, bringing the total enrollment to 302 (60.4% of our target of 500). Study data will inform the conversion of the current criteria for those at high risk for ERI recurrence into a more refined scoring system for providers to optimize return-to-duty decisions.

Exercise Collapse Associated with Sickle Cell Trait (ECAST)

The ECAST study began in 2022 to identify risk factors in sickle-cell-trait (SCT) carriers with (case) and without (control) a history of ECAST. This study also aims to determine whether any biomarkers can be applied to identify varying levels of risk for individuals with SCT. In 2023, the study team began using electronic forms to improve the consenting and data-collection processes, and in March, a DHA sharing agreement was executed for the team to collect additional relevant participant information. The team also used online participant registries such as ResearchMatch and USU’s Military Traumatic Brain Injury Initiative’s referral program (TBI Research Opportunities and Outreach for Participation in Studies; TROOPS) along with HPRC’s social media pages to enhance recruitment efforts. Fourteen potential participants were screened with nine participants (six controls; three cases) enrolled, thus reaching 30% of our enrollment target (N=30).

Warrior Heat- and Exertion-Related Events Collaborative (WHEC) Outcome Analysis

This newly funded WHEC Outcome Analysis study aims to create a database and registry for exertion-related events (ERE) and assess related outcomes to analyze the impact of ERE-related policy reform and implementation. This database and registry will be made available to researchers and healthcare providers and will contribute to the clinical ERE knowledge base. The WHEC team will compile and analyze data from the Multidisciplinary Case Review Committee (MDCRC) and MARS to determine clinical variables that are applicable to ERE prevention, diagnosis, and mitigation. In 2023, the team established a steering committee of ERE experts from across USU and DoD, and are working closely with Joint Trauma System (JTS) members to ensure the ERE registry aligns with the existing DOD Trauma Registry for future seamless integration.



17

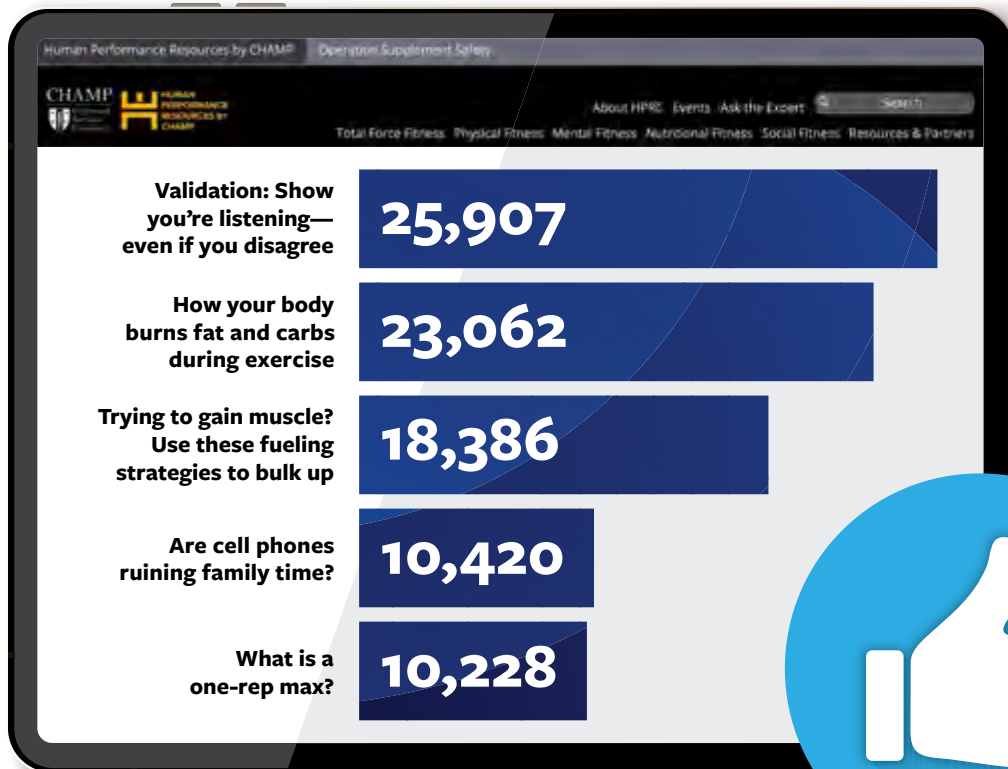
heat tolerance tests by ERIS in 2023



Human Performance Resources by CHAMP (HPRC)

The HPRC team completed many live presentations and virtual events in 2023. We engaged in several collaborations with various stakeholders, ramped up our social media content, and developed TFF courses and other educational materials for better Service Member well-being, performance, and readiness.

HPRC-online.org’s most popular content in 2023 (in views):



Presentations & Virtual Events

In 2023, the HPRC team presented to multiple audiences.

- Air Force Health & Readiness Optimization
- Alaska Army National Guard*
- Arizona Army National Guard*
- Armed Forces Health Center–Aberdeen
- Defense Threat Reduction Agency
- Defense Centers for Public Health – Aberdeen
- Foreign Service Institute Resilience Symposium
- Ft. Belvoir Community Hospital Sports Medicine Fellows

- H2F Symposium Day at Ft. Eustis, Virginia
- HPO Summit at Georgia Southern University
- Iowa Army National Guard
- Maryland’s Commitment to Veterans
- National Physical Fitness Alliance*
- National Veterans Memorial and Museum
- “Mind, Body and Spirit” Resilience Summit*
- Nursing Professional Advisory Committee of the U.S. Public Health Service*



EDUCATION & TRAINING

- North Dakota National Guard
- Ohio Army National Guard
- TriService Nursing Research Program
- U.S. State Department
- U.S. Army 81st Readiness Division at Ft. Jackson, South Carolina
- U.S. Army Directorate of Prevention, Resilience, and Readiness
- U.S. Army Forces Command
- U.S. Army H2F Industry Day
- U.S. Army Legal Services Agency at Ft. Belvoir, Virginia
- U.S. Army National Guard Professional Education Center

- U.S. Army National Guard General Officer Training*
- U.S. Coast Guard Air Station Cape Cod*
- U.S. Coast Guard Wellness Wednesday
- USU Graduate School of Nursing
- University of Pennsylvania
- VA Women’s Health Monthly Call
- 16th Special Operations Squadron at Cannon Air Force Base, New Mexico
- 27th Special Operations Wing at Cannon Air Force Base, New Mexico

* new partnership or audience

Rehab, Refit, Return to Duty (Rx3)

The Rx3 program is designed for Service Members and Veterans to self-manage common musculoskeletal conditions following referral by their medical providers. In 2023, team members built and tested the related app. Within two months of its September release, we had over 18,000 active users, 575 app downloads, and over 1,300 workouts completed. Notably, our online print materials have been downloaded 7,300 times since the app’s release.

Project Refuel

In 2023, the HPRC team worked with the Air Force to update and modify 100 articles and infographics of HPRC content for inclusion in the Project Refuel app. Developed for the Air Force and Space Force communities, the app is the first of its kind to bring together emotional and physical health data, and it uses artificial intelligence algorithms to make total health recommendations for users. Service Members beta-testing the app will find HPRC content on mindfulness, strategic habits, attachment injury, heart-rate zones, and nutrient timing.



18,000
active users



575
app downloads



1,300
workouts completed



7,300
PDFs downloaded





EDUCATION & TRAINING

Curriculum Efforts

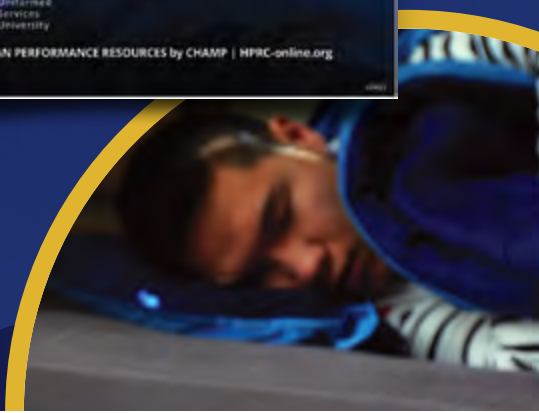
The HPRC team secured a contract with USCG’s Integrated Primary Prevention program to create, deliver, and evaluate a train-the-trainer curriculum for a Resilience Coordinator collateral duty role. The Resilience Coordinator will serve as an accessible point of contact for Coast Guardsmen to obtain evidence-based information and resources on sleep, physical fitness, nutrition, behavior modification, theories of change, stress management, and smoking and nicotine cessation. The HPRC team began to develop the five-day curriculum along with learning outcomes, facilitator guide, and evaluation tools. The team plans to pilot the course twice in 2024 before finalizing the project materials.

Due to the growth of the Army’s H2F program, the Military Health and Performance Optimization-Integrator (MHPO-I) curriculum was retitled to H2F-Integrator (H2F-I). In June, the HPRC team worked with the 81st Readiness Division of the Army Reserve to offer the H2F-I course to 50 Army Reserve members at Ft. Jackson, South Carolina. During the five-day course, students learned basic concepts of sleep readiness, nutritional readiness, physical readiness, mental readiness, and spiritual readiness. They also learned coaching skills to help them have effective conversations about health and wellness topics with their fellow Soldiers. Post-course student evaluations revealed that the course materials were useful, the instructors demonstrated a thorough knowledge of the subjects, and the course climate stimulated learning in a collaborative atmosphere.

The team also built an online space with materials, recorded videos, discussion boards, and submitted assignments for a virtual version of the course for 36 ARNG members in September, and a hybrid version was delivered in December to New Mexico Army National Guard members. Feedback indicated that participants strongly valued the sleep-readiness content and felt the course material was relevant to their job duties. Since the development of this course in 2022, the material has been delivered to more than 250 Guard and Reserve members.

Leader Guides

In 2023, the HPRC team published three Leader Guides on sleep (“**The impact of sleep on Total Force Fitness**,” “Sleep habits to optimize performance, mental health, and resilience,” and “Sleep self-study to optimize sleep duration”). The guides also summarize research on TFF and its impact on performance, resilience, and military wellness, and offer strategies for implementing total fitness concepts. These tools are meant for military leaders to use in 1:1 sessions, hip-pocket trainings, presentations to military audiences, or in standard training practices to influence behavior change. These Leader Guides are important resources for leaders looking to bring evidence-based TFF information to their units.





EDUCATION & TRAINING

Campaigns

#GetFightingFit. A spin on the “New Year, New Me” theme, the campaign highlights all areas of Total Force Fitness to help Service Members take a holistic approach to meet their Service-specific weight and fitness standards and overall wellness goals. OPSS and HPRC social media pages featured weekly content from HPRC’s “Get Into Fighting Weight Guide” and related challenges to encourage Service Members to take a balanced approach to managing their weight for better performance and readiness.

National Nutrition Month. HPRC, OPSS, and MNE teams ran a National Nutrition Month campaign in March in support of the Academy of Nutrition and Dietetics’ annual campaign. The goal was to engage with military members to promote healthy eating by focusing on the Academy’s “Fuel for the Future” theme and highlighting information from CHAMP’s nutrition and dietary supplement programs.

Army STRONG B.A.N.D.S. (Balance, Activity, Nutrition, Determination, and Strength). In partnership with the U.S. Army Family and Morale, Welfare, and Recreation program, HPRC helped run the 12th annual STRONG B.A.N.D.S. campaign to encourage Army communities to commit to staying fit. Using #STRONGBANDS, the HPRC team created a social media tool kit complete with graphics and messaging for partners to post in May. Each week promoted themes that aligned with the B.A.N.D.S. acronym and disseminated related evidence-based resources. The HPRC team also contributed questions for Tuesday Trivia and HPRC-branded materials for trivia prizes, and created an **Army Combat Fitness Test (ACFT) prep poster for the campaign.**



Walk, Run, Move. HPRC partnered with the National Guard Professional Education Center, National Physical Activity Plan (NPAP) Military Settings Sector, and Office of Disease Prevention and Health Promotion in July for the first Walk, Run, Move social media campaign. The campaign promoted a TFF approach to combat physical inactivity and improve the health and performance of Service Members and their families. The HPRC team promoted weekly fitness challenges and trivia contests, and highlighted the benefits of physical fitness using existing HPRC-online.org resources. HPRC social media platforms executed the campaign with fitness-challenge themes of movement, performance, environment, and injury prevention.

The challenge reels performed well on Instagram, and the team set a new reels record with the step challenge: roughly 13,900 plays. In addition, the President’s Council and Military OneSource retweeted us—significant in that both organizations have over 50,000 followers each.

ACFT PREP
Getting ready for your fitness test is a months-long effort.
To best prepare, **GET FIT, FUEL UP, BE MENTALLY STRONG, and BUDDY UP.**

GET FIT

MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY & SUNDAY
LOWER BODY	AEROBIC	UPPER BODY	ANAEROBIC	AEROBIC	RECOVERY
• Squats • Deadlifts • Lunges	• 2-mile jog (every other)	• Bench press • Overhead press • Lat pull-down	• Sprint • 10-15s • 50-100s	• 2-mile jog (interval pace)	• Walk • Stretch • Foam roll

FUEL UP

	WHAT	WHEN	EXAMPLES
PRE-ACTIVITY (1-2 HOURS)	1-2 cups of water or more at 200-300 calories Small snack or light meal 30-60 min before workout	30-60 min before	Banana, yogurt, cereal and milk Banana, apple, oatmeal
POST-ACTIVITY	50-75g	1-2 hours after	None
HYDRATION (OPTIONAL)	60-75oz	30-60 min before	16oz water or Flavored electrolyte sports drink

BE MENTALLY STRONG

- BE SMART:** Set SMART goals (Specific, Measurable, Achievable, Relevant & Time-oriented) leading up to the test.
- BE POSITIVE:** Negative self-talk brings you down. Enter on the track. You got this.
- BE PRESENT:** Stay in the moment. The only component that matters is the one you're doing now.

BUDDY UP

- ACCOUNTABILITY:** Setting goals with others can help you stay on track.
- PROGRESSION:** Pushing each other up can help you make faster progress.
- SOCIAL SUPPORT:** Feeling supported can lead to making healthy decisions.

Human Performance Resources by CHAMP, annual partner of STRONG B.A.N.D.S., is the military's go-to source for ways to maximize performance, fitness, wellness, and nutrition. Learn more at hprc-online.org or scan the QR code.



EDUCATION & TRAINING

Heat. During the June campaign, the WHEC team remained committed to its goal of raising awareness about effective techniques to reduce heat-related illnesses and supporting the safe reintegration of Service Members into active duty. A specific focus on ECAST highlighted the importance of understanding this condition and implementing appropriate precautions. The campaign’s ECAST reel had 7,200 views and 96 likes.

#GotMySix. HPRC’s 2023 approach to promoting gratitude in our #GotMySix campaign again helped Service Members express thanks to those they can count on to “have their six.” This year, in addition to providing the physical tool kits for partners’ #GotMySix display boards and social media tool kits for partners to support the campaign, we added a family tool kit with an emphasis on nutrition.

 **300,000**
views of #GotMySix content online

 **703**
views of the family toolkit, downloaded 65 times, and sent to over 100 contacts

HPRC Blog

The HPRC blog site published about 40 blog posts in 2023 by guest bloggers and CHAMP staff members, reaching over 11,500 people. HPRC’s most popular blog content in 2023:

“ How stress helped my father overcome a gambling addiction ”

“ Test your ‘social fitness’ and firm up problem areas ”

“ Humility breeds confidence ”

Print Material Requests & Dissemination Efforts

CHAMP Education teams developed an online catalog of downloadable materials to streamline requests for print products. Often-requested materials are included in the catalog to make them available and accessible via the new self-service process for users across the Services, starting in 2024.

Throughout 2023, however, the HPRC team fielded more than 200 requests for a variety of print materials listed below. The #GotMySix gratitude kit, “Get Into Fighting Weight Guide,” and STRONG B.A.N.D.S ACFT posters were the most requested, each with over 50 copies printed and distributed.

- HPRC Sleep Leader Guides
- Warfighter Nutrition Guide
- Sleep and nutrition posters
- HPRC, OPSS, and WHEC posters and flyers
- “Build Your Plate” posters and handouts and plant-based-eating handouts
- G4G program materials





EDUCATION & TRAINING

HPRC resources were mentioned or included in reports, publications, and websites, helping spread the message about Total Force Fitness.

- The PROHealth website, designed by the 374th Medical Group at the Yokota Air Force Base, Japan
- 15th Marine Expeditionary Unit Marine Air Ground Task Force Resilience Curriculum
- Social Fitness and the Social Domain: A Holistic Approach Based on Total Force Fitness (*Journal of Special Operations Medicine*, October 2023)
- Total Force Fitness Education: A Critical Enabler of Human Performance Optimization (*Military Medicine*, September/October 2023)

MNE programs, including G4G and mNEAT, were also referenced in several high-profile reports and publications.

- Report to the Congressional Defense Committees: Military Food Transformation (May 2023)
- Army H2F Handbook (June 2023)
- Partnerships to Facilitate Total Force Fitness (*Military Medicine*, September/ October 2023)

In addition, HPRC and MNE programs (including G4G and mNEAT) were mentioned or included online.

- Nutrition’s Role in Total Force Fitness Examined at Conference (health.mil, June 2023)
- DoD Resources for Physical Health, Wellness, Nutrition and Injury Prevention and Recovery (military.com, 2023)

JIF with Cardiovascular Disease (CVD) Prevention

The CVD team continued collaborations with Loma Linda VA to grow the VA Virtual Medical Center (VMC) and engage users in synchronous and asynchronous educational programs. In February, the team hosted a virtual event with multidisciplinary subject-matter experts discussing the disproportionate effects of COVID-19 on various populations and how to optimize heart-health outcomes moving forward. Speakers presented “in-world” from VA VMC to showcase the new, interactive, and educational platform.

In accordance with the National Strategy on Hunger, Nutrition, and Health and as part of the White House Nutrition Interagency Policy Committee, the team hosted a virtual conference in June to highlight nutrition-focused initiatives across DoD in support of Service Member fitness and CVD prevention. Invited speakers represented CHAMP, DHA, VA, DoD Education Activity, Air Force Medical Readiness Agency, Air Force Lifestyle & Performance Medicine Working Group, Armed Forces Wellness Center, Defense Centers of Public Health – Aberdeen, and Brooke Army Medical Center.

CVD team member Stephanie Barrientos and Dr. Sabina Gandhi of Loma Linda VA also presented “Cardiovascular Disease Prevention and Diabetes Education” at the Defense Threat Reduction Agency Education Seminar in July, where they also provided an introduction to the VA VMC. The team will continue to collaborate with the Loma Linda VA to finish curating evidence-based resources for use in the VA VMC and its educational programs.





EDUCATION & TRAINING

USCG Air Station Cape Cod Resilience Days Seminar

HPRC collaborated with USCG Air Station Cape Cod (ASCC) to develop a two-day schedule for USCG Cape Cod Resilience Days held in March. The team provided educational presentations and evidence-based resources related to mental, spiritual, and physical readiness. This two-day seminar was open to ASCC, Maritime Safety and Security Team (MSST) Cape Cod, and Base Cape Cod members. Both ASCC and MSST committed approximately 50% of their respective units to attend the seminar each day. Presentation topics included stress optimization, leadership, preventing and managing neck and back pain, and a review of relevant USCG medicine policies and available resources. In addition, a spiritual-fitness case study was led by the ASCC chaplain.

Ask the Expert (ATE)

The MNE team fielded 224 questions (mNEAT: 184 and G4G: 40) via team and staff emails, and from the HPRC ATE portal or team email. We received questions on G4G program implementation, education and marketing material requests, mNEAT user access and troubleshooting, and general G4G and mNEAT information.

The HPRC team fielded 106 ATE questions across all domains, including queries from the Rx3 and WHEC web pages. Some notable questions were:

- “ Is there a diet you would recommend after having my gallbladder removed and an umbilical hernia repair done? ”
- “ I am in phase 2 of knee rehab via your website as I wait for PT appointment. My question is rowing on concept 2 ok for rehab? ”
- “ I was hoping this was the appropriate email to discuss possible heat tolerance testing for a West Point cadet with a history of heat stroke during air assault course. ”
- “ We are in the process of revising our primary flight training syllabus, and have some organizational interest in incorporating stress management tactics/ techniques as a ground training component. Looking to talk to a Stress Management/MPO expert to discuss efficient ways to accomplish this. ”
- “ I have a member who suffered from a rhabdomyolysis event and was admitted from 22–24 May that is complicated in the outpatient setting by an apparent persistent ulnar neuropathy. ”



330
 “Ask the Expert”
 questions in
 2023

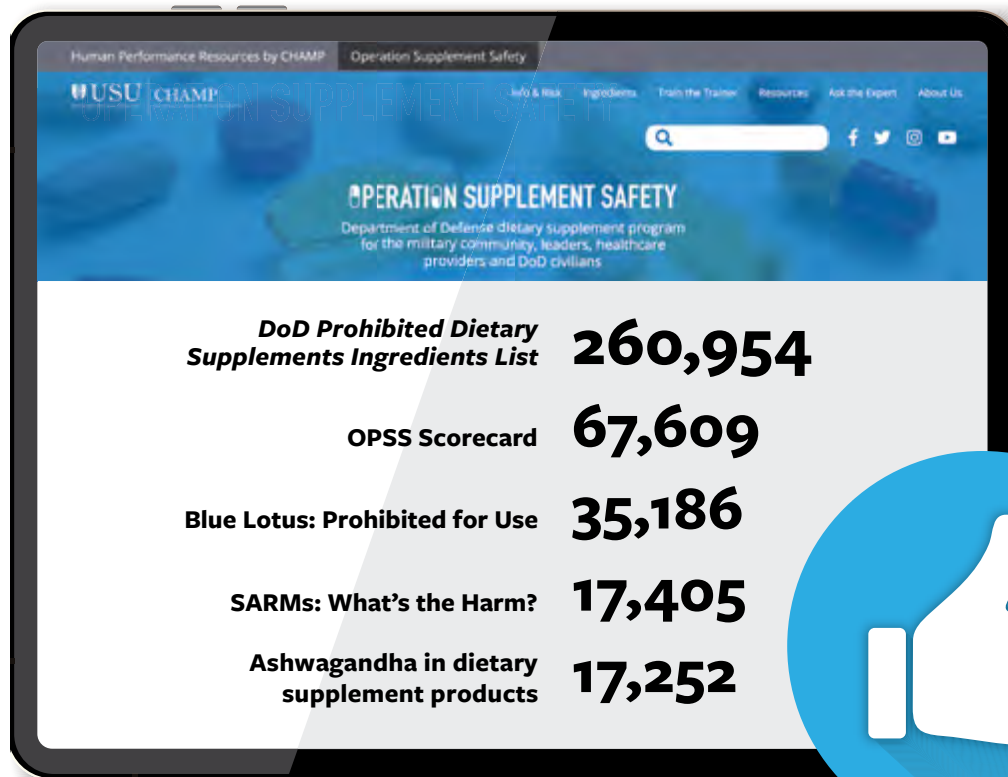


EDUCATION & TRAINING

Dietary Supplements & Operation Supplement Safety (OPSS)

The OPSS team increased social media content output, grew campaigns, leveraged partnerships, and consistently mentioned social media platforms in presentations, exhibits, and through word of mouth. The OPSS website had a net increase in page views of 32.03% and drew 7.43% of users from social media accounts in 2023, compared to 6.9% last year.

OPSS.org’s most popular content in 2023 in views:



Presentations & Virtual Events

The OPSS team continued to prioritize a full schedule of educational presentations and training sessions, completing 63 in-person and virtual events to Service Members, healthcare providers, and DoD leaders. OPSS resources and initiatives were also presented at ten professional conferences and symposia, including the Oxford International Conference on the Science of Botanicals, the Joint Service Drug Testing Program Manager Symposium, American Society

of Nutrition conference, Academy of Nutrition and Dietetics Food and Nutrition Conference and Expo, and the American Public Health Association Annual Meeting and Expo.

In addition, a series of four related podcasts were produced and shared through social media, involving OPSS and other diverse stakeholders and expert dietary supplement panelists. Other educational materials—including an



EDUCATION & TRAINING

immune-health guide, handouts, and OPSS website articles—were made available on the OPSS website and shared on CHAMP social media platforms. The OPSS team also piloted a train-the-trainer series, with OPSS Director Andrea Lindsey spending a full week each at Ft. Drum, U.S. Army Rock Island Arsenal, and Ft. Liberty to present this education to over 900 participants. She also met with Human Performance Teams while on bases. The OPSS team also hosted four virtual train-the-trainer sessions, in addition to many other virtual sessions, which were open to all military healthcare providers and allied health professionals with a reach of over 80 participants. Quarterly virtual sessions will be scheduled in 2024 to continue to meet demand.

To the right are a few comments received from a post-session survey for the train-the-trainer presentations at U.S. Army Rock Island Arsenal.

Finally, OPSS worked with DHA to secure Continuing Education Units (CEUs) for dietitians who attend an OPSS train-the-trainer session and pass a quiz based on the material presented.

OPSS Director Andrea Lindsey pilots a train-the-trainer series on the safe use of dietary supplements at Ft. Drum, New York.

“ I threw some supplements away that I had been using that may have had bad effects on me. I now have told 3 other people I know what to look out for and now they are looking at what they have in their cabinets that they take. ”

“ This was a much more useful training than most substance abuse trainings. I’ll definitely be more conscious of ingredients if I (or someone in my family) is considering using one of these! ”

“ I can truly say that it was one of the most informative training sessions that I have received in my over 41 years of federal service. ”

“ Very important and critical information that the U.S. military should’ve put out a long time ago, too many soldiers died or are in bad shape because of the lack of knowledge these items can cause. The Supplement stores on all military installations should be removed. ”





EDUCATION & TRAINING

In 2023, the OPSS team presented to audiences at the following:

Addictive Substance Misuse Advisory Committee • American Public Health Association Annual Meeting and Expo • American Society of Nutrition • B3 Dietary Supplement Intersession at USU • Brigade Healthcare Provider Course • Camp Lejeune • Cannon Air Force Base • Council for Responsible Nutrition • Defense Health Agency/Defense Threat Reduction Agency • Dietary Supplement Label Database Working Group • Division Surgeon Course • DoD Nutrition Committee • Academy of Nutrition and Dietetics Food and Nutrition Conference and Expo • Food, Nutrition, and Dietary Supplements and Other Self-Care Products Subcommittees meeting • Force Fitness Instructors at U.S. Marine Corps Base Quantico • Ft. Belvoir Community Hospital Active Duty Medical Weight Clinic Program • Ft. Bliss • Ft. Campbell • Ft. Drum • Ft. Liberty • Ft. Myer • Guam Army National Guard Substance Abuse Program • H2F-Integrator Course • HPRC Quarterly HPO Leadership Professional Development Series • Integrative Medicine and Health Symposium • International Sports Pharmacy Symposium • Joint Service Drug Testing Program Manager Symposium • Joint Special Operations Forces Conference • Massachusetts National Guard • Military OneSource/NATO Technical Team • Naval Air Station Whidbey Island • Naval Special Warfare Dietitians • Naval Supply Systems Command Fleet Drumbeat • Navy MWR Fitness Professionals Summit • Naval Support Activity Hampton Roads • Office of Dietary Supplements Research Practicum • Oxford International Conference on the Science of Botanicals • Port Hueneme • Army Medical Specialist Corps • U.S. Army Rock Island Arsenal • U.S. Military Academy • U.S. Naval Reserve Sioux Falls • U.S. Air Force Drug Demand Reduction • U.S. Air Force Health Promotion Workshop • Walter Reed National Military Medical Center

Dietary Supplements Safety Information and Performance Enhancing Substances (PES)

OPSS obtained additional funding from the Office of Drug Demand Reduction (ODDR) to present evidence-based information about PES on the OPSS digital platform. This will include a dedicated PES section on the OPSS website and increased social media coverage on PES content to be rolled out in 2024. This initiative is in addition to ODDR’s annual support of OPSS education efforts with Dietary Supplements Safety Information. The OPSS team also established a partnership with Major League Baseball for PES efforts, in which the U.S. Anti-Doping Agency is also a partner.

“Let’s Talk Dietary Supplements” Campaign



Returning for a second year, this social media campaign centered around promoting the safe, informed use of dietary supplements, particularly within DoD. In 2023, the campaign expanded to bring awareness to critical information surrounding PES and to engage military, industry, and federal partners. The October campaign included nine partner videos and 100 posts across OPSS social media channels, with eight of the ten reels receiving 14K–40K views. The campaign had greater reach, higher engagement, and a drastic decrease in costs per click for ads than last year’s campaign, indicating the materials and messaging resonated well with our audience. In addition, it had the highest viewership of all CHAMP campaign reels to date.





EDUCATION & TRAINING

DoD Prohibited Ingredients List

The OPSS team maintains and updates the DoD Prohibited Dietary Supplement Ingredients List, which grew to include nearly 4,600 terms this year (over 800 primary substances plus roughly 3,780 “synonyms”). The team continues to update this list as new information becomes available (from our federal partners and the scientific literature) and following the biannual OPSS Advisory Board meetings to vote on inclusion of new substances.

4,600

searchable terms on the DoD Prohibited Dietary Supplement Ingredients List

OPSS Ingredient Database (OPSSID), OPSSup App, and OPSS Admin Portal

OPSSID is a database of substances found in or on labels of products marketed as dietary supplements. It also contains substances that have been found in dietary supplements that may have not been listed on the label, and identified in the U.S. Food and Drug Administration’s Warning Letters. The database serves as a central repository of ingredients that directly supports the *DoD Prohibited Ingredients List* and OPSSup app initiatives. An online “OPSS Admin Portal” was created in 2023 to house OPSSID and allow the OPSS team to collaboratively update and access the information, which has been critical to our work. The OPSS team continued to add new ingredients into OPSSID from labels of dietary supplement products and from results of testing dietary supplement products, as well as updated research associated with pre-existing substances in the database. The OPSS team also assembled and twice convened a panel of 13 experts to

assist with creating a list of criteria to classify OPSSID substances into a clear and appropriate stoplight safety-rating system (red, yellow, and green) for dietary supplements. Categories are based on current available evidence for safety and effectiveness, and finalizing this classification criteria is necessary to complete the OPSSup app by the end of 2024.

Health Professional Training Module

After taking a pause to work on OPSSID and the OPSS Admin Portal, the OPSS team began to revise and update three existing sections of the Module to include current information about regulations, ingredients, and the *DoD Prohibited Ingredients List*. Completion is targeted for the end of 2024. In addition, the team was tasked to create a dietary-supplement awareness training for Service Members.

Ask the Expert (ATE)

The OPSS team continues to receive a large number of ATE inquiries following the signing of DoD Instruction 6130.06, “Use of Dietary Supplements in the DoD,” in March 2022. In 2023, the team fielded over 1,500 questions from Service Members, healthcare providers, leaders, judge advocates, and civilians. Observed trends from the ATEs are then used to inform new content on the OPSS website and social media channels. For example, the OPSS team received an increase in questions about weight-loss drugs, particularly semaglutide, so the team wrote an article on its safe use for the OPSS website. The article amassed nearly 1,200 views in the last quarter of 2023. The team also produced a website article on berberine for weight loss (due to its popularity on social media outlets), and it received roughly 5,800 views in the latter half of 2023.



1,500

“Ask the Expert” questions in 2023



1,181 views

Weight-loss substances: Semaglutide: Uses and safety



5,782 views

Berberine: The hype for “Nature’s Ozempic”



CHAMP 2023 Accomplishments • LEADERSHIP

Warrior Heat- and Exertion-Related Events Collaborative (WHEC)

WHEC is dedicated to clinical care, education, research, and policy development to mitigate exertional illness and optimize readiness. In February, WHEC hosted the 7th annual Heat Forum at the Army Heat Center in Ft. Moore, Georgia. The event showcased presentations from military leaders and medical providers, drawing about 500 in-person and virtual attendees, plus 366 views on the HPRC Events web page.

CHAMP’s Exertional Illness team, in conjunction with WHEC and the Ft. Moore Army Heat Center, began developing a joint-service CPG on the prevention and management of exertional heat illness. The team aims to unveil this effort at the 2024 Heat Forum at Ft. Moore, and begin work on creating five DHA clinical practice parameters for publication from this CPG and for use by medical providers.

WHEC on HPRC

The WHEC web page hosted on the HPRC website continues to be a comprehensive resource for up-to-date ERI information for providers and Service Members. New WHEC content included infographics and articles on heatstroke, heat-exhaustion symptoms, heat first aid, heat-illness mitigation, and ECAST.

In June, the WHEC team ran its annual social media Heat campaign to continue raising awareness about heat-related illnesses, with a focus on bringing awareness to ECAST. The initiative resulted in 761 page views of WHEC content in

the first two months of 2023. In addition, the campaign achieved notable engagement with 1.5K interactions and 61 mentions, reaching an audience of 300,000. Social media also drove 4,500 users to the WHEC web page. These statistics underscore the need for information and affirm our commitment to disseminating educational resources to inform the military community, facilitate informed decision-making, and encourage proactive measures to prevent and treat heat-related illnesses.

CHAMP researchers continued to monitor operational metrics to assess success in return to duty of Warfighters, sustained performance, and injury prevention. Metrics tracked included DHA practice-parameter publications, clinical-practice guideline publications and updates, unit educational visits, clinical consultations, and presentations. In 2023, we presented on exertional illness during visits to Ft. Stewart, Joint Base Lewis-McCord, Ft. Moore for the U.S. Army Heat Center’s annual heat forum, and the International Congress on Soldiers’ Physical Performance conference in London. Goals for 2024 include attending an international conference on exertional rhabdomyolysis and providing over 100 clinical consultations to expedite return-to-duty decisions.

CHAMP’s Exertional Illness team initiated an effort to stand up a DoD registry focused on identifying, recording, and organizing Service Member exertional-illness cases. This effort includes working with USU’s Military Cardiovascular Outcomes Research team, the Armed Forces Medical Examiners System team in Dover, Delaware, and COL Jennifer Gurney and the JTS team to create an exertional illness database that will “nest” inside JTS. Our goal for 2024 is to stand up this exertional-illness database.



300,000

impressions of WHEC content on social media



LEADERSHIP

Clinical Consultations

Multidisciplinary Case Review Committee (MDCRC)

MDCRC provided multidisciplinary clinical consultations for 23 Service Members with diagnosis or combination of high-risk exertional rhabdomyolysis, exertion-associated hyponatremia, exertional heat stroke, ECAST, and exertional sudden cardiac arrest. MDCRC works with WHEC on complex ATE clinical consultation requests, which may become MDCRC referrals depending on the severity of the Service Member’s condition. MDCRC—with standing members from nephrology, hematology-oncology, pulmonary sports medicine, neurology, cardiology, physiology, genetics, physical medicine and rehabilitation, and nutrition—invites the referring provider to participate in the clinical discussion. The ability for clinicians to consult with MDCRC provides just-in-time evaluation and treatment recommendations, and assists in coordinating follow-up referrals to keep patients within the military treatment network—resulting in faster access to military treatment facility (MTF) providers. The other benefits of MDCRC keeping patients within the MTF network are to 1) facilitate faster return-to-duty decisions, 2) ensure clinicians with

expertise in evaluating military-specific health issues are evaluating Service Members, 3) maintain clinical competence, 4) educate clinicians on exertional heat illness differential diagnosis, and 5) contribute to controlling military health costs.

MDCRC team members presented a poster on MDCRC at USU Research Days and MHSRS, and are preparing a manuscript to document proof of concept for MDCRC. The team also participated in the development of an Exertional Heat Registry in cooperation with the Joint Trauma Registry, worked to expand the current data-collection methods to simplify data analysis, and explored avenues to provide clinical consultation to civilian providers.

WHEC

WHEC processed 66 consults, comprising 46 clinical and 18 educational inquiries in 2023. Inquiries ranged from asking for the most recent guidance and research on heat acclimation to seeking clinical advice on heat-related cases. There was a notable increase in queries related to ECAST, reflecting a growing awareness and concern about this condition.



Francesca Cariello and Dr. Francis O'Connor present a poster on the Multidisciplinary Case Review Committee at the Military Health System Research Symposium.



LEADERSHIP

Federal Working Groups

The HPRC team continued to represent CHAMP on work-group calls for the Equitable Long-Term Recovery and Resilience (ELTRR) plan. The group consists of members and representatives from 35 federal agencies and departments seeking to align federal resources to improve individual and community resilience and cooperatively strengthen the well-being of the nation. CHAMP—the only DoD representative on the call—seeks to contribute ideas about how we can facilitate bringing ELTRR principles to military communities.

The MNE team is involved in several work groups, including DoD’s Military Nutrition Environment Work Group and Performance Nutrition Working Group along with multiple federal work groups: Food Service Guideline Collaborative, Nutrition & Obesity Policy Research and Evaluation Network (NOPREN) Food Service Guidelines Work Group, and Nutrition Promotion Working Group.

The OPSS team participates in a monthly DoD Adverse Event Tiger Team event to create an effective method for DoD providers to report adverse events associated with dietary supplement use in the electronic health record. The team will continue this effort in 2024.

Dietary Supplements & OPSS

OPSS Advisory Board. The board convened in July and voted to add two new ingredients (demelverine and N,N-dimethylethylamine) to the *DoD Prohibited Dietary Supplements Ingredients List*.

OPSS Working Group. Led by OPSS Director Andrea Lindsey, the group met six times in 2023 to provide updates about dietary supplement initiatives across each of the Service branches and DoD. They also discussed trending topics and issues related to dietary supplement use in the military, with participants from all the Services.

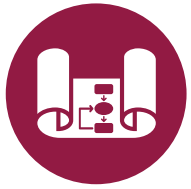
Summits

Total Force Fitness Musculoskeletal Health Summit. CHAMP collaborated with USU’s CHSR and MIRROR programs to host the Total Force Fitness Musculoskeletal Health Summit in May. The goal of this two-day hybrid event was to promote the mission of optimizing MSK health, well-being, and readiness of Service Members across their careers. Over 350 participants attended the summit, featuring USU President Jonathan Woodson and other keynote speakers across DoD. Work-group sessions were held for all attendees to discuss ways to further optimize MSK health through TFF.

OPSS Summit. The OPSS team hosted its inaugural OPSS Summit in October in accordance with the DoDI 6130.06 requirement. The summit was attended by over 250 people and included opening remarks from USU President Jonathan Woodson. The event featured presentations from OPSS and ODDR, as well as two discussion panels of federal partners and healthcare providers to discuss topics related to dietary supplements.



USU President Jonathan Woodson gives opening remarks at the OPSS Summit.



CHAMP 2023 Accomplishments • OPERATIONAL SUPPORT

TFF & HPO Future Operations

In collaboration with members of the U.S. Air Force 2W1 Aircraft Armament System Technicians career field assigned to the 366th Maintenance Group (366 MXG) at Mountain Home Air Force Base, the HPO Future Operations team built a Capability-Based Blueprint (CBB) and accompanying action plan, which will be launched in 2024 to realign health and performance service delivery. In May, the team presented findings and recommendations from three CBBs with the 355th, 366th, and 388th MXGs at the Senior Munitions Managers Conference at Langley Air Force Base, Virginia, to over 150 2W1 senior leaders across commands. Findings were also presented at the TFF MSK health summit, to demonstrate how needs assessments considering all TFF domains holistically can provide critical insight into context for physical health and performance priorities. Finally, the team is compiling findings from all three 2W1 blueprints into a final report for Headquarters Air Force 2W1 career field managers and participating stakeholders. The report will highlight common health and performance priorities for 2W1s working on fighter aircraft, as well as provide recommendations to support their mission readiness. To date, several MXGs have built upon their blueprints. The 355th MXG created a Center for Resilience with embedded health and performance assets and a 24-hour gym and kitchen for the Maintainers on the flightline. The 388th MXG created a “Maintain the Maintainer” program, bringing installation health and performance assets to their shops to address a range of Maintainer-specific health and performance priorities.

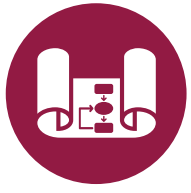


366th Fighter Wing U.S. Air Force Col. Isaac Bell, then 366th Fighter Wing deputy commander, and Lt. Col. Travis Slack, 366th Maintenance Group director of operations (Photo by Airman Keagan Lee).

In-depth Resource Requests

HPRC. The HPRC team responded to requests from the field to print and ship our performance-optimization materials to various military bases around the world in 2023. The team sent sleep resources to the Idaho Army National Guard and copies of the “Get Into Fighting Weight Guide” to contacts at Ft. Moore. The HPRC team also distributed copies to Service Members and military families attending the medical weight-loss program at Ft. Belvoir, Virginia. The Guide was provided to participants at the start of a 14-week program as a reliable source of evidence-based information. Typically, the program has about 15-20 participants per cohort, with three cohorts per year. The military medical provider overseeing the program said, “The guides, in my opinion, have been excellent and well received. I have personally been structuring any talks I’ve had to give using the information provided from the guide.”





OPERATIONAL SUPPORT

MNE. The team also provided a range of resources to USU medical students and staff completing Operation Bushmaster, a military medical field experience. The team also sent multiple posters to Ft. Bliss, including ones on high-performance eating, tips to equip a kitchen, hydration, optimal nutrition, and gratitude. In addition, team members created 12 customized MNE (G4G and mNEAT) resources to target specific populations.

OPSS. The OPSS team continued to push out posters, handouts, postcards, and other resources to educate the military community on popular dietary supplement ingredients and promote the Operation Supplement Safety program. The team also sent materials to healthcare providers and allied health professionals at Camp Arifjan, Ft. Bliss, Ft. Drum, Ft. Moore, and Ft. Sam Houston. The OPSS team also worked directly with military healthcare providers to create other resources, including a SARMs poster, an OPSS Ask the Expert poster, and a pocket card for Service Members.

Consultative Services

HPRC. The HPRC team hosted four HPO Leadership Professional Development (LPD) presentations to support military leaders and past students of the MHPO-I course in their efforts to bring performance-optimization resources to the Services. LPD sessions provided participants with HPRC resources and recommendations on how best to use them to encourage behavior change and health-sustaining behaviors among Service Members. Topics included active-constructive responding, HPRC’s sleep leader guides, OPSS dietary supplement safety, and HPRC’s Warfighter Nutrition Guide.

HPRC team members also provided operational support to military units and commands throughout 2023. This included a request from the Executive Officer at USCG Air Station Cape Cod for information on the use of physical fitness tests during a unit fitness competition. The team recommended fitness-test scoring methods used in USCG basic training and provided

information for comparing unit fitness levels. The team also provided feedback to Camp Lejeune on standing up a Human Performance Center and consulted with Barksdale Air Force Base on how to leverage HPRC resources for their HPO programming.

MNE. The MNE team provided 186 consultative services on the MNE improvement process, including mNEAT assessment and action planning, G4G planning, implementation, and sustainment across DoD (levels based on effort).



186
MNE consults
in 2023

Level 1 <i>(consult form completed and/or general recommendations provided)</i>	163
Level 2 <i>(installation or facility request for customized recommendations for specific program requirement area(s), including requests to code ready-to-use items)</i>	14
Level 3 <i>(pilot-site planning or partnership)</i>	6
Level 4 <i>(pilot site with completed letter of support)</i>	3

OPSS. Among the more than 1,200 ATE questions OPSS received in 2023, some required more than the usual effort to respond. For these cases, CHAMP’s Acting Executive Director, Dr. Patricia Deuster, and OPSS Director, Andrea Lindsey, reached out directly to the inquirers (typically healthcare providers or military judge advocates) to discuss their questions related to DoD policies, specific medical or legal cases, and prohibited substances. Military leaders also asked the OPSS team for input on dietary supplement topics in military guidance and policies.



Internal Activities

External Reviews

In March, a panel of subject-matter experts from multiple Services and federal agencies conducted an independent external review of our organizational pillars. The panel identified gaps and offered recommendations to optimize programs and deliverables for relevance and future success. Experts highlighted multiple organizational strengths and opportunities, and described CHAMP as a leader in the HPO/TFF arena. Per panel recommendations, CHAMP leadership also initiated steps to strengthen our programs and presence within DoD. Director of Strategic Communications Ayanna Shivers will lead efforts to emphasize the positive impact of CHAMP programs and products within military communities. In addition, leadership has taken steps to improve the funding process, communication, collaboration, and transparency. Overall, this provided an opportunity to spread the word about CHAMP programs and expand our reach to military and federal leadership.

In addition, the bi-annual external advisory board (EAB) meeting of DoD, federal, and academic external advisors ensures that CHAMP activities are consistent with its Concept of Operations and addresses operational challenges that face human-performance requirements

across DoD, MHS, and the U.S. Public Health Service. In August, CHAMP briefed the EAB on findings from the external review. CHAMP relies on the EAB to review our strategic milestones and deliverables and recommend solutions for issues encountered while executing our mission. This advisory group also provides helpful insight on future trends and funding sources.

Intranet and Newsletter

CHAMP leverages a variety of digital tools to cultivate an environment where staff can feel connected and empowered while contributing to our mission. Our intranet serves as the central repository for resources and information to facilitate efficient onboarding, access to organizational and program materials, and team cohesion. It also features a comment box for staff to anonymously share feedback and concerns with leadership.

CHAMP's commitment to open communication, collaboration, and sharing of knowledge includes a monthly staff newsletter for our 80 members. This publication complements our monthly staff meeting and helps keep everyone informed about notable activities and achievements. In addition, each issue features a staff member spotlight to celebrate individual contributions and promote camaraderie.



Staff Retreat

The 2023 retreat provided an opportunity for staff members to build or strengthen their connections to CHAMP's mission and each other through two key components. First, staff were grouped (in person and virtually) across different projects and roles to engage in storytelling, interactive challenges, and one-on-one interviews. This provided several opportunities for staff members to learn about one another and facilitate the creation of shared, memorable experiences. Second, the retreat enabled staff members to meaningfully reflect on CHAMP's mission by sharing stories about learning or applying it in one's personal life. We also explored the impact our work has on each other and the military community as a whole.

Internship Program

Five undergraduates interned with CHAMP research staff in 2023. Two interns with the Human Performance Research Lab (HPRL) learned about ongoing ERI projects by observing data collection, as well as entering and organizing data. The third HPRL intern, a Marine Corps reservist, worked on a genomics-related ERI project and received training on how to use publicly available biobanks for genetic data analysis. Two interns with the PSS team contributed to the

development of research products from the HPT study and worked with CHAMP biostatisticians.

Diversity, Equity & Inclusion (DEI) Work Group

CHAMP's DEI Work Group provides opportunities for all staff to access, learn about, and apply DEI resources (including those from USU and HJF) throughout all CHAMP efforts. Our group continues to increase DEI resource accessibility through a monthly email digest, CHAMP newsletter, and presentations for CHAMP staff. As part of our efforts to connect CHAMP staff with diversity efforts at USU and HJF, we invited Dr. Lisa Harris, USU's lead on the Addressing Racism & Bias Task Force, to discuss efforts to address racism and bias in medicine and health education. The team also worked with USU's Allyship Journal Club to connect CHAMP staff with a training session on inclusive language with Dr. Krista Highland, lead on USU's Lesbian, Gay, Bisexual, Transgender, Queer or Questioning, Intersex, Asexual, and other identities Affirming Curriculum Taskforce. Dr. Highland is also the lead on the Project for Actionable Support for Promoting Education Networks, a train-the-trainer program to support the use of inclusive language at USU. The team also continues to provide resources of interest on the CHAMP intranet DEI page.



LCDR Maile Richert and CHAMP interns at the Yuval Heled Heat Lab in Bethesda, Maryland.

2023 Publications, Posters & Presentations

Selected Peer-reviewed Publications

Bullock, G. S., **Dartt, C. E., Ricker, E. A.**, Fallowfield, J. L., Arden, N., **Clifton, D.**, Danelson, K., Fraser, J. J., Gomez, C., Greenlee, T. A., Gregory, A., **Gribbin, T.**, Losciale, J., Molloy, J. M., Nicholson, K. F., Polich, J. G., Raisanen, A., Shah, K., **Smuda, M.**, . . . Rhon, D. I. (2023). Barriers and facilitators to implementation of musculoskeletal injury mitigation programmes for military service members around the world: A scoping review. *Injury Prevention*, 29(6), 461–473. doi:10.1136/ip-2023-044905

Costello, R. B., **Lindsey, A. T., & Deuster, P.** (2023). Challenges in reporting adverse events from dietary supplements. *Nutrition Today*, 58(1), 34–38. doi:10.1097/nt.0000000000000587

Crawford, C., Brown, L. L., Costello, R. B., & **Deuster, P. A.** (2023). Immune supplements under the magnifying glass: An expert panel develops priorities and evidence-based recommendations for future research regarding dietary supplements. *Journal of Integrative and Complementary Medicine*, 29(4), 261–267. doi:10.1089/jicm.2022.0800

DeGroot, D. W., Henderson, K. N., & **O'Connor, F. G.** (2023). Cooling modality effectiveness and mortality associate with prehospital care of exertional heat stroke casualties. *Journal of Emergency Medicine*, 64(2), 175–180. doi:10.1016/j.jemermed.2022.12.015

Givens, M., **O'Connor, F. G., & Deuster, P. A.** (2023). Total Force Fitness Summit 2021: Maximizing the health and well-being of service members and their families.

Military Medicine, 188(Suppl 5), 4–7. doi:10.1093/milmed/usac440

Kegel, J. L., Kazman, J. B., Clifton, D. R., Emanuele, P., Nelson, D. A., & **Deuster, P. A.** (2023). The combined effects of coping and pain interference on army readiness [Original Research]. *Frontiers in Pain Research (Lausanne)*, 4, 1175574. doi:10.3389/fpain.2023.1175574

Kirkpatrick, K., Billington, J., & **Robinson, D.** (2023). Ready-to-use-item database to improve nutrition labeling program efficiency. *Journal of Food Composition and Analysis*, 124, 105704. doi:10.1016/j.jfca.2023.105704

Kirkpatrick, K., Kleinberger, C., Kazman, J., Libretto, S., Boyd, C., & Deuster, P. A. (2023). Total Force Kitchen: Exploring active-duty service member performance optimization through cooking. *Journal of Integrative and Complementary Medicine*, 30(1), 66–76. doi:10.1089/jicm.2023.0025

McCarthy, R. G., Park, G. H., Barczak-Scarboro, N. E., Barrientos, S., Chamberlin, R. A., Hansom, A., & Messina, L. A. (2023). Social fitness and the social domain: A holistic approach based on Total Force Fitness. *Journal of Special Operations Medicine*, 23(3), 85–90. doi:10.55460/TRM7-423O

Messina, L. A., & Park, G. H. (2023). Total Force Fitness education: A critical enabler of human performance optimization. *Military Medicine*, 188(Suppl 5), 12–15. doi:10.1093/milmed/usad205



32
publications

49
poster & research
abstract presentations

17
presentations at
scientific & other conferences



Visit the publications page on the CHAMP website for a full list.

Park, G. H., Scarboro, N.E. (2023). Total Force Fitness: Bridging performance optimization and health approaches for Warfighter readiness and psychological health. *International Review of the Armed Forces Medical Services*, 96(3), 4–10.

Rittenhouse, M. A., Barringer, N. D., Jaffe, D. A., Morigiello, J. M., **Kegel, J. L., McNally, B. A., & Deuster, P. A.** (2023). Omega-3 index improves after increased intake of foods with omega-3 polyunsaturated fatty acids among US service academy cadets. *Nutrition Research*, 117, 30–37. doi:10.1016/j.nutres.2023.06.005

Roberts, W. O., Armstrong, L. E., Sawka, M. N., Yeargin, S. W., Heled, Y., & **O'Connor, F. G.** (2023). ACSM expert consensus statement on exertional heat illness: Recognition, management, and return to activity. *Current Sports Medicine Reports*, 22(4), 134–149. doi:10.1249/JSR.0000000000001058

Scott, J. M., & Deuster, P. A. (2023). Role of nutrition in human performance in military populations. *BMJ Military Health*, e002311. Advance online publication. doi:10.1136/military-2022-002311

Van Arsdale, S., Cooper, V., Bernhardt, J. S., **Barrientos, S., Messina, L. A.**, Gandhi, S., Ferry, L. H., Shell, D., & **Deuster, P. A.** (2023). Bridging Total Force Fitness and whole health in cardiovascular disease prevention. *Military Medicine*, 188(Suppl 5), 38–42. doi:10.1093/milmed/usad166

Yu, T., Wang, L., Zhang, L., & **Deuster, P. A.** (2023). Mitochondrial fission as a therapeutic target for metabolic diseases: Insights into antioxidant strategies. *Antioxidants (Basel)*, 12(6), 1163. doi:10.3390/antiox12061163

Research Poster & Research Abstract Presentations

American Orthopaedic Society for Sports Medicine • American Psychological Association • American Public Health Association • American Society for Nutrition • Association of Military Surgeons of the United States • Division 19 Military Psychology Summit • Food and Nutrition Conference and Expo • Integrative Medicine and Health Symposium • International Congress on Soldier Physical Performance • Military Health System Research Symposium • Military Injury Prevention Research to Practice Education Seminar • National Athletic Trainers' Association Clinical Symposia & AT Expo • Sport and Human Performance Nutrition Spring Symposium • Uniformed Service Academy of Family Physicians Annual Meeting & Exposition • USU Research Days • USU Tri-Service Nursing Program Research & Evidence-Based Practice Dissemination Course

Presentations at Scientific & Other Conferences

Defense Science Board • Defense Science Board Summer Study on Climate Change and Global Security • Food and Nutrition Conference and Expo • Mary Frances Picciano Dietary Supplement Research Practicum • NutraIngredients - USA Sports & Active Nutrition Summit • Senior Munitions Managers Conference • 7th Annual Heat Forum at Ft. Moore Army Heat Center

Partners & Collaborators

Internal DoD USU Stakeholders

Center for Deployment Psychology

Center for Health Services Research

Center for Neuroscience and Regenerative Medicine

Center for Rehabilitation Sciences Research

Center for the Study of Traumatic Stress

College of Allied Health Sciences

Daniel K. Inouye Graduate School of Nursing

Defense and Veterans Center for Integrative Pain Management

Department of Anatomy, Physiology & Genetics

Department of Anesthesiology

Department of Military and Emergency Medicine

DoD Medical Ethics Center

Drug Demand Reduction Program

Fellowship Program

Henry M. Jackson Foundation for the Advancement of Military Medicine, Inc.

Military Cardiovascular Outcomes Research

Musculoskeletal Injury Rehabilitation Research for Operational Readiness

Naval Support Activity Bethesda

Office for Student Affairs

School of Medicine

Traumatic Injury Research Program

External DoD Stakeholders

Air Force Lifestyle & Performance Medicine Working Group

Air National Guard

Armed Forces Health Surveillance Division

Army Holistic Health and Fitness

Army National Guard

Army Office of the Chief of Chaplains

Army Resilience Directorate

Assistant Secretary of the Air Force for Energy, Installations, and Environment

Defense Advanced Research Projects Agency

Defense Centers for Public Health – Aberdeen

Defense Commissary Agency

Defense Health Agency

Defense Media Activity

Defense Suicide Prevention Office

Defense Threat Reduction Agency

DiLorenzo Pentagon Health Clinic Fit to Win (Wellness)

Grand Forks Air Force Base

Hearing Center of Excellence

Joint Culinary Center of Excellence

Keller Army Community Hospital

Medical Education and Training Campus

Military Community and Family Policy

Military OneSource

Morale, Welfare and Recreation
National Defense University
National Guard Bureau
National Guard Professional Education Center
Naval Health Research Center
Naval Medical Forces Support Command
Navy Marine Corps Public Health Center
Office of Naval Intelligence
Psychological Health Center of Excellence
Semper Fit
Too Much To Lose
U.S. Air Force
U.S. Air Force Academy
U.S. Air Force Research Laboratory
U.S. Army
U.S. Army Center for Initial Military Training
U.S. Army Forces Command
U.S. Army Office of the Chief of Chaplains
U.S. Army Research Institute of Environmental Medicine
U.S. Coast Guard
U.S. Coast Guard Academy
U.S. Marine Corps
U.S. Marine Corps Training and Education Command
U.S. Military Academy at West Point
U.S. Naval Academy
U.S. Navy
U.S. Space Force

U.S. Special Operations Command
Walter Reed Army Institute of Research
Walter Reed National Military Medical Center
81st Readiness Division, Army Reserve
116th Military Intelligence Brigade

External Federal Partners

Armed Forces Recipe Service
Centers for Disease Control and Prevention
Federal Trade Commission
National Center for Complementary and Integrative Health, National Institutes of Health
Office of Dietary Supplements, National Institutes of Health
U.S. Department of Agriculture
U.S. Department of Health and Human Services
U.S. Department of Homeland Security
U.S. Department of Justice
U.S. Department of Veterans Affairs
U.S. Department of Veterans Affairs, Dayton Healthcare
U.S. Drug Enforcement Administration
U.S. Food and Drug Administration
U.S. Naval War College

Collaborators: Academic Institutions

Andrew Weil Center for Integrative Medicine,
University of Arizona

Center for Applied Proteomics and Molecular Medicine,
George Mason University

Centre for Trauma, Asylum and Refugees,
University of Essex

Clemson University

Cohen Career Center, William & Mary

Duke University

Georgia Institute of Technology

Heller Institute of Medical Research

Joint Special Operations University

Kinsey Institute

Korey Stringer Institute, University of Connecticut

Stanford University

The Ohio State University

The University of Tampa

The University of Tennessee at Chattanooga

Tufts University

University of Minnesota

University of Mississippi, Oxford

University of North Carolina at Chapel Hill

University of Pennsylvania

University of Pittsburgh

University of Toronto

Virginia Commonwealth University

Professional Associations

Academic Consortium for Integrative Medicine
and Health

Academy of Nutrition and Dietetics

American College of Lifestyle Medicine

American College of Sports Medicine

American Medical Society for Sports Medicine

American Public Health Association

American Psychological Association, Division 19:
Society for Military Psychology

American Society for Nutrition

College of Pastoral Supervision and Psychotherapy

Collegiate and Professional Sports Dietitians Association

Council for Responsible Nutrition

National Athletic Trainers' Association

National Collegiate Athletic Association

National Strength and Conditioning Association

Other Partners & Collaborators

Major League Baseball

Military Families Learning Network

North Atlantic Treaty Organization

OmegaQuant

The Institute for Integrative Health

Therapeutic Research Center

U.S. Anti-Doping Agency

CHAMP Goals for 2024

Overall Internal

- › Effectively communicate goals, priorities, and successes across the organization.
- › Make CHAMP program information more accessible for sharing with internal and external audiences and tracking metrics.
- › Improve CHAMP processes, focusing on those necessary to meet demands for content development and website responses that are time-sensitive.
- › Pursue new partners to finance CHAMP programs to ensure sustainable long-term funding.
- › Support the CHAMP 2022–2026 Strategic Plan to grow the Operational Support pillar to provide direct, accessible, and responsive clinical and operational support across all the Services to enhance the readiness, health, and well-being of Warfighters, beneficiaries, and their families.



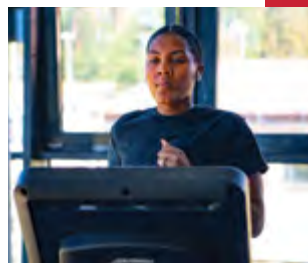
RESEARCH & SCHOLARSHIP

- › Understand barriers and facilitators for care-seeking for musculoskeletal injury during USMC basic and secondary training. Evaluate the implementation of an embedded athletic trainer into USMC infantry training.
- › Characterize spine kinematics in aircrew and explore factors related to those experiencing self-reported low-back pain. Provide low-back pain prevention-and-wellness educational programming to aircrew personnel at study sites.
- › Continue to provide musculoskeletal skills training to DoD medical providers and guide patients through our virtual rehabilitation platform. Explore the relationship between hormonal-contraception administration and stress-fracture incidence during early military training.
- › Evaluate the effectiveness of musculoskeletal injury prevention and/or treatment programs and practices across DoD.
- › Conduct analysis using the TEMPPPO app to provide Army National Guard Soldiers with an accessible tool to help improve fitness and readiness.
- › Understand unit/career-field community health and performance needs, and how health and performance providers can support those needs to improve job performance, mitigate occupational risks, and improve community health outcomes through Community-Based Blueprints.
- › Evaluate the spiritual fitness program from the U.S. Army Office of the Chief of Chaplains.
- › Continue utilizing the mNEAT app and Go for Green® program to improve the military nutrition environment while also evaluating whether the addition of spices and herbs to vegetables can promote increased vegetable intake among junior Service Members. Lastly, evaluate whether intake of omega-3 in a protein shake can increase performance of active-duty enlisted.
- › Conduct ongoing research on heat- and exertion-related injuries by investigating biological and clinical markers associated with ECAST.
- › Conduct dietary supplement product testing and analyses for weight-loss products being advertised to Service Members.
- › Conduct a state-of-the-science review on creatine monohydrate dietary supplements to inform recommendations for appropriate use in the military.
- › Merge existing small ERE databases into pilot WHEC Data Registry and develop database format.



EDUCATION & TRAINING

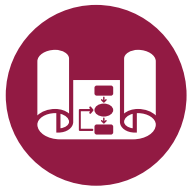
- › Complete the development of the OPSSup app and deploy by the end of 2024.
- › Continue to develop and add substances to the OPSS Ingredient Database (OPSSID) as part of the ongoing efforts to support the *DoD Prohibited Dietary Supplement Ingredients List*, the OPSSup app, and other dietary supplement projects.
- › Complete development of the OPSS Health Professional Module and deploy it in JKO by the end of 2024.
- › Develop a dietary-supplement awareness training for Service Members.
- › As mandated by DoDI 6130.06, continue to provide dietary supplement education for Service Members, healthcare personnel, and allied health professionals across the military community.
- › Continue to maintain the *DoD Prohibited Dietary Supplement Ingredients List* and further enhance its search capability.
- › Create and publish a dedicated section of evidence-based information on Performance Enhancing Substances on the OPSS website.
- › Co-host a Performance Enhancing Substances Summit with Major League Baseball.
- › Host and expand participation for the 2nd annual OPSS Summit.
- › Expand HPRC’s coordination with CHAMP and USU/MEM research initiatives to develop cutting-edge HPO/TFF content, tools, and training.
- › Enhance user experience by updating the HPRC website landing page and domains, ensuring a more intuitive and user-friendly interface and mobile-device usability.
- › Develop comprehensive resources and tools on the HPRC website for military service providers to use with Service Members, their families, and other DOD stakeholders.
- › Create more Service-specific resources for publication on the HPRC website, providing valuable content tailored to the diverse needs of each Service branch.
- › Analyze the type of data the HPRC team collects for the HPRC website and presentations/trainings, aiming to leverage insights for continuous improvement of content and processes.
- › Enhance visibility through strategic outreach initiatives, exploring innovative methods such as webinar series, podcasts, conferences, campaigns, and resource development to effectively showcase the impactful work of the HPRC team.
- › Successfully develop and deliver a train-the-trainer curriculum on HPO and TFF.
- › Develop promotional materials highlighting our training packages, enhancing visibility and awareness of the valuable resources offered by the HPRC team.
- › Strengthen integration with USU’s Department of Military and Emergency Medicine and actively serve the needs of USU, fostering collaborative relationships and increasing the visibility and value of HPRC resources.
- › Continuously explore opportunities to align HPO education with college credits, aiming for broader recognition and accreditation.





LEADERSHIP

- › Host a Total Force Fitness Psycho-Social-Spiritual Summit.
- › Finalize clinical practice guidelines on exertional heat illness, and present on exertional rhabdomyolysis at an international conference.
- › Contribute to revisions of DoD-level joint requirements and policies.



OPERATIONAL SUPPORT

- › Explore funding mechanisms and establish SOPs to make Operational Support a financially viable strategic pillar for CHAMP. Collaborate with HJF and USU entities to reduce barriers to accepting funding and executing contracts.
- › Develop pathways to better understand and meet the needs of operational communities through the implementation of advisory groups, building connections with community stakeholders, actively serving on working groups, and formally and informally engaging with the operational community on a regular basis.
- › Build on existing partnerships and foster new collaborations with organizations within and beyond DoD.
- › Explore opportunities to expand the reach of and embed/integrate CHAMP tools, metrics, curricula, and tangible resources into operational communities.



Middle photo: Digital Manager Tammy Ireland provides an overview of the HPRC website for personnel at U.S. Army Garrison Bavaria in Grafenwoehr, Germany.



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