

Continuing Research on Known Submarine Health and Performance Challenges:

- **Mental health and resilience**, especially for younger, new Sailors
- **Physical fitness**
- **Nutrition** (food that is good for you) and morale (food that may not be so good for you)
- **Pre-deployment screening**,
 - Especially given inability of the force to be as selective as in the past
- **Infectious disease prevention and management** (COVID lessons)
- **Fatigue and daily sleep cycle** / circadian rhythm
- **Mixed gender crew interactions** and well-being

New Opportunities in Submarine Health and Combat Performance:

- **Enabling the opportunity created by customized wearables**
 - Day-to-day stress, health and fitness trend monitoring
 - Combat environment performance monitoring
 - Casualty and crisis (e.g., battle-stations) monitoring and response
 - Location tracking of personnel within the ship for casualty mitigation
- **Better understanding how to optimize future submarine design for:**
 - Mixed gender crews
 - Fitness and nutrition
 - Damage prevention and control (e.g., automated damage limitation)
 - Crew protection in combat shock environments
- **Learning how to maximize future crew mental health and resiliency**
 - Broad cultural trends suggest that this will likely be a bigger/different challenge in the future