



# CU Center for COMBAT Research: Saving and Improving Lives on the Battlefield and at Home

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University of Colorado  
Anschutz Medical Campus



# University of Colorado Center for Combat Medicine and Battlefield (COMBAT) Research

## Save and Improve Lives on the Battlefield and at Home

We solve the U.S. military's toughest medical challenges by leading high-impact research, education, and innovation in collaboration with government, academic, and industry partners.







**We turn military medical gains into  
better health care for all.**





# University of Colorado Healthcare Landscape

**\$1.7 billion** in research funding per year

**2,100** research faculty

**400** health clinics and **18** hospitals

**8** trauma centers

**1000+** paramedics and **130K** EMS calls



# CU Center for COMBAT Research

**80+** DoD research grants and **19** staff

**100+** research investigators

**500+** high-impact publications

High rate of funding of our research proposals

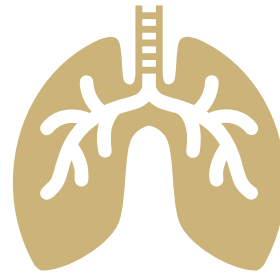
Academic, industry and military collaborators

# Research Overview

## Center for COMBAT Research Strategic Focus Areas:



Point of injury and  
prolonged casualty care



Critical injury and  
illness

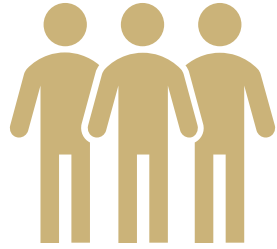


Psychological health  
and readiness



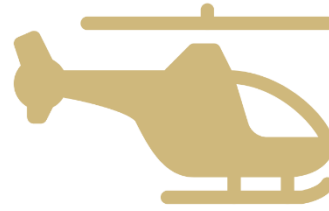
# Research Overview

## Acute and Emergency Care Deployment and Operational Areas



### Pre-deployment

Team training,  
interpersonal violence,  
human performance



### Deployment

Prehospital care & EMS,  
TBI, burns, sepsis, trauma,  
critical care, toxicology,  
chemical antidote  
arctic, women's health



### Post-deployment

Sleep, hearing loss, pain,  
substance abuse  
suicide, mental health,  
PTSD



# Accelerators

Leveraging robust capabilities to increase efficiency to conduct cutting edge research



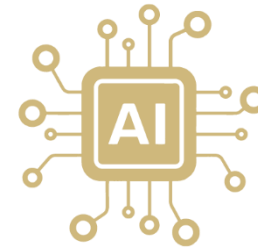
## Advanced Clinical Research Platforms

Adaptive clinical trials  
Prolonged casualty care  
Acute care and trauma



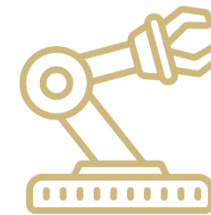
## Extreme Environments

Arctic  
Altitude  
Chemical/Radiological capabilities



## Bioinformatics

Machine learning  
Artificial intelligence  
Predictive algorithms  
Decision support



## Bioengineering

Robotics  
Wearables  
Image processing





# Military Medicine Benefitting Civilian Care

Enhanced **communication and cooperation** between our nation's military and civilian health systems would:



**Promote reciprocal learning**



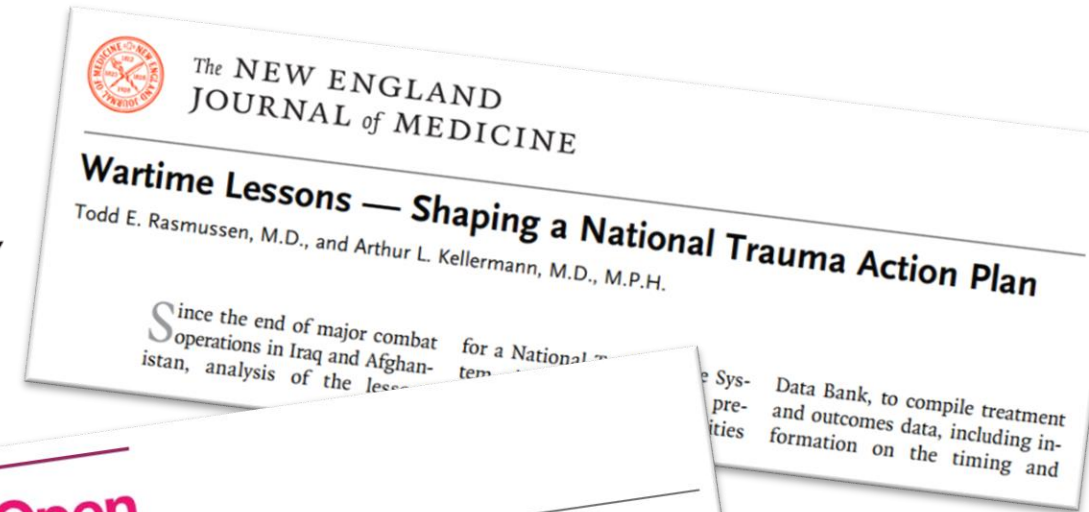
**Accelerate collaborative research**



**Strengthen our nation's capacity to meet a growing array of health and geopolitical threats**



NATIONAL ACADEMY  
OF SCIENCES



# Collaboration

## 7 Military Bases Within 45 Minutes

Research studies

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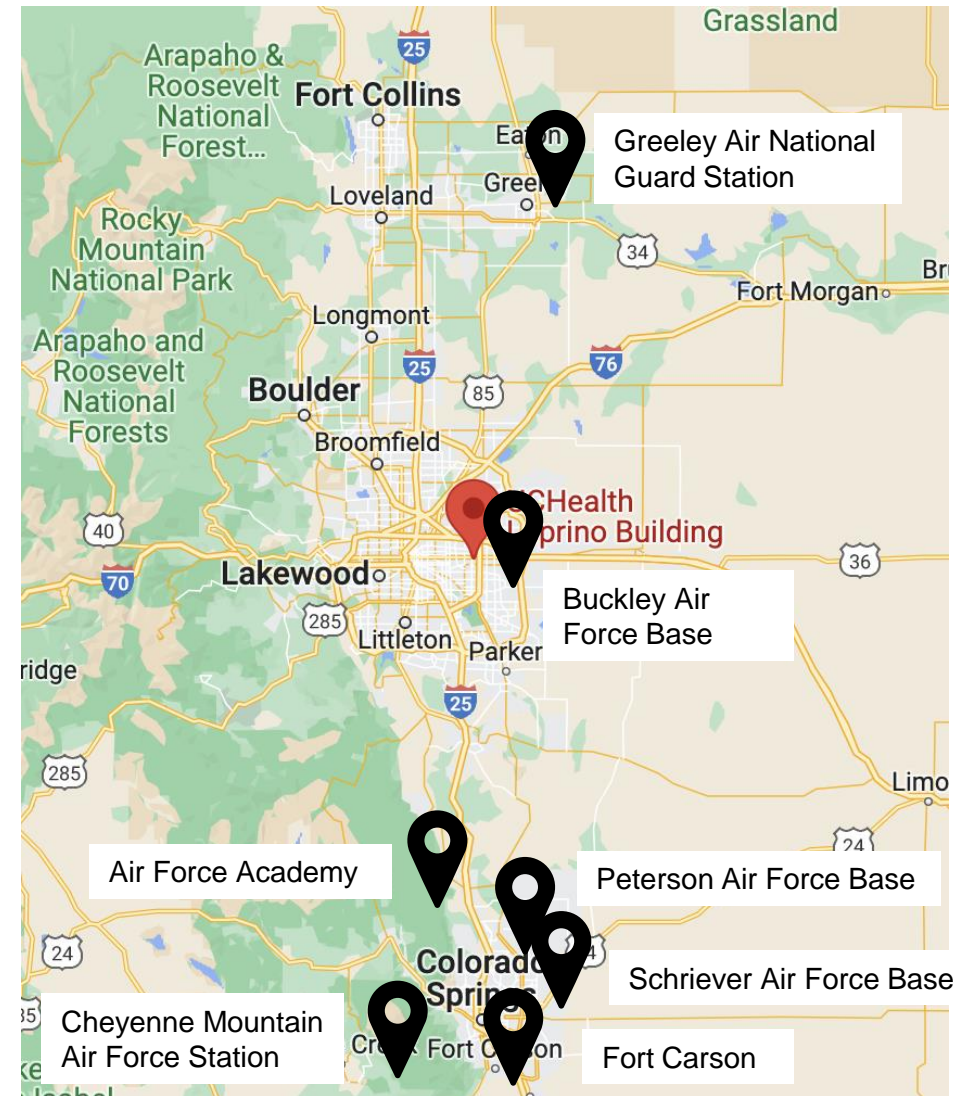
Training and education

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Community outreach

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Our neighbors, our families, our patients,  
and our workforce





# Collaboration

## DoD Research Sponsors and Collaborators

Defense Health Agency (DHA)  
DoD Combat Casualty Care Research  
Prog (JPC6)  
U.S. Army Institute of Surgical Research  
U.S. Army Medical Research Institute of  
Chemical Defense  
Brooke Army Medical Center  
USAF 59<sup>th</sup> Medical Wing  
USAF 711<sup>th</sup> Human Performance Wing

Uniformed Services University of the Health  
Sciences  
Special Operations Command  
U.S. Space Force  
U.S. Air Force Academy  
U.S. Army Office of the Surgeon General (in  
development)  
Naval Health Research Center (in development)  
U.S. Army Research Institute for Environmental  
Medicine (in development)



# Collaboration

## Recent Visits

**Assistant Secretary Defense Health Affairs**  
**Deputy Assist Secretary of Defense for Health Affairs**  
**General Officers** from Combatant Commands  
**Directors**, Defense Health Agency Research  
**Commanders**, Special Operations Command and AFSOC  
**Directors**, Army Institute of Surgical Research  
**Directors**, Air Force Chief Scientist Office  
**Director** DoD Combat Casualty Care Research  
**Director** DoD Infectious Disease Research  
**Vice President**, Uniformed Services University





# CU Innovations

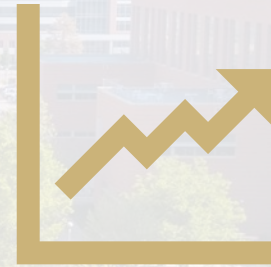
In 2022, CU Anschutz was ranked globally as fourth top university for innovation



**\$692 million in  
research funding**



**2 million  
patient visits**



**\$3.73 billion annual  
economic impact  
for the US**



**2,000 patents filed  
since 2002**

# UCHealth Care Innovation Center

Partners with **CU School of Medicine** and leading industry and start-ups to revolutionize health care delivery

Innovation platform with exceptional **speed and operational efficiency** to develop solutions quickly

**Largest Virtual Health Center** in the country serving 2.7 million patients with over 70,000 virtual visits a month



npj | digital medicine

Comment

Published in partnership with Seoul National University Bundang Hospital



<https://doi.org/10.1038/s41746-024-01184-8>

**UCHealth's virtual health center: How Colorado's largest health system creates and integrates technology into patient care**

Elizabeth Goldberg, Dave Kao, Bethany Kwan, Hemali Patel, Amy Hassell & Richard Zane

Check for updates





# Why COMBAT Launched – bridging military and civilian gaps

**Silos** in civilian and military healthcare and innovation efforts

**Need a connector** to bridge both sides

**Both sides hungry** to help, exchange ideas, and solve problems

**Translating both directions** - military expertise to civilian clinical and research leaders



# Why **COMBAT Thrives** – bridging research & innovation into healthcare delivery improvement

**Turning research into practice and policy** – Research, innovation, and clinical trials **implemented** into policy, new training, practice guidelines, acquisition changes, and SecDef memos

**Collaboration outside the DoD** – NIH, BARDA, PCORI, DHS, other leading civilian institutions, industry/start-ups

**Partnerships beyond trauma, and in public health**

**Recruit and retain** combat-tested, experienced, military talent





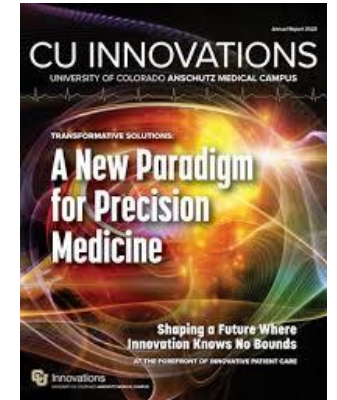
# Bridging local industry and innovation into DoD healthcare delivery improvement

Bioinformatics and cutting-edge teams in AI

Innovative clinical trials platforms

Bioengineering teams addressing DOD needs as problem sets

Digital health and novel healthcare delivery systems



# Connect With Us

<https://www.cuelitesymposium.com>



[COMBATresearch@ucdenver.edu](mailto:COMBATresearch@ucdenver.edu)

[www.combatresearch.org](http://www.combatresearch.org)



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# Back up Slides





# Connect With Us

**Email:**

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# Collaboration

## Research Agreements



### Defense Health Agency Educational Partnership Agreement (EPA)

Partnership to evaluate DoD  
research scientist training programs

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### Uniformed Services University (USU) Research Affiliation Agreement (with CU)

Streamlined program for research  
collaborations USU military medical  
students

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### United States Air Force Academy Educational Partnership Agreement (EPA)

Partnership for research  
collaborations and training





# Examples of Recent Research Studies

