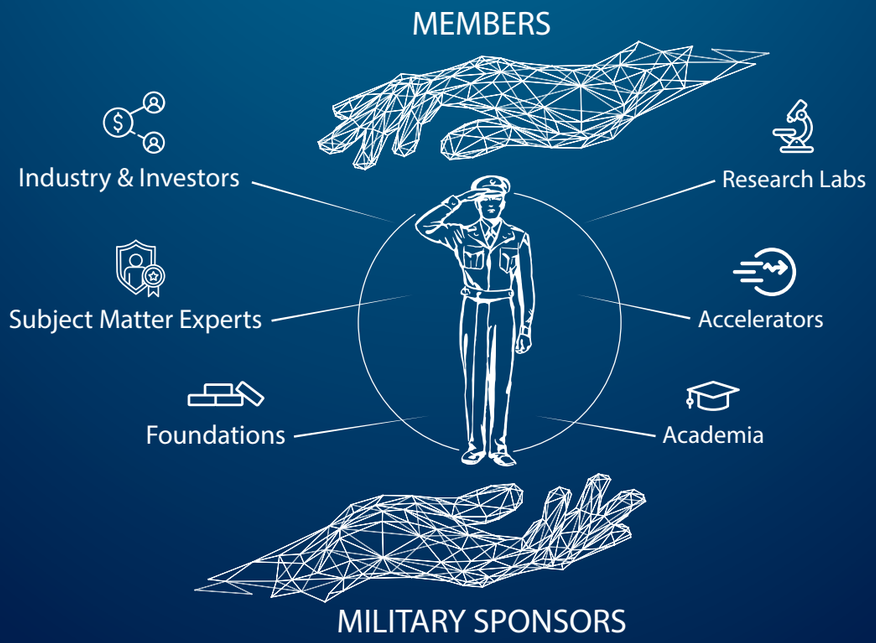
2023 MTEC

ANNUAL REPORT

What We Do

The Medical Technology Enterprise Consortium (MTEC) is a nonprofit collaborating with the U.S. Army to facilitate funding of biomedical innovation to advance military and civilian health.



Contents

Acronyms

AI- Artificial intelligence

AUSA- Association of the United States Army

IDE- Investigational device exemption

ML- Machine Learning

GMP- Good manufacturing practices

IND- Investigational new drug

MTEC- Medical Technology Enterprise Consortium

OTA- Other transaction agreement

R&D- Research and development

TBI- Traumatic brain injury

U.S. FDA- United States Food and Drug Administration

From The Chair: Ellen Embrey

This past year, MTEC experienced significant growth and surpassed $1B in total awards and commitments for medical R&D! MTEC also expanded membership support to include advanced commercialization services, increased exposure to outside funding, and offerings by the M-Corps network of service providers.

Looking ahead, the transition of leadership to the Defense Health Agency (DHA) presents opportunity to build strong relationships and expand utilization of MTEC. We are excited about the future prospects, anticipating expanded access to funding sources, and enhanced opportunities for our members.

Since MTEC inception, we have funded

in ceiling of research across 292 awards!

Key highlights from 2023 include:

of projects advanced at least one Technology Readiness Level

of projects had timely milestone achievements

29K+ human subjects were enrolled in studies

of proposals were rated fundable

2 new products commercialized:

ARA

4TDS

NOCTEM HEALTH

COAST

Additional 2023 Highlights

In 2023, MTEC awarded

$242M

with an additional $2M in cost share

to **60** new projects that were proposed to

11 funding opportunities covering **68** topic areas

of projects secured funding following initial MTEC award

Since inception, MTEC small business members secured a total of

$720M

in follow-on funding

$623M was private

and

$97M was non-MTEC Government

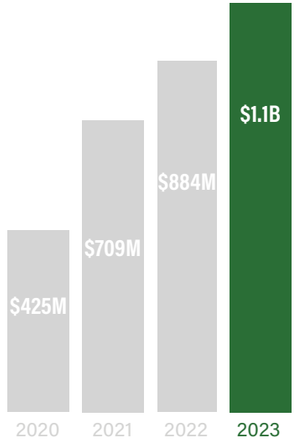
Event & Engagement Metrics

MTEC hosted **24** Webinars

Attended over **40** events

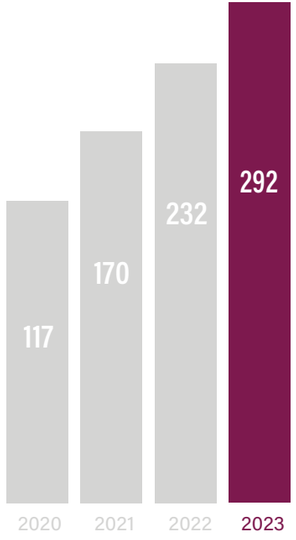
Evaluated **2K+** companies for military relevance

Funding & Membership Growth

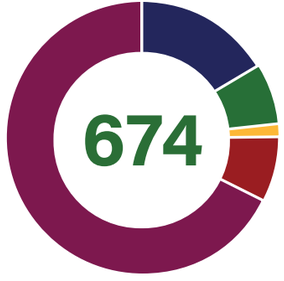


Award ceiling is up **24%** from 2022

MTEC projects awarded increased **26%** from 2022

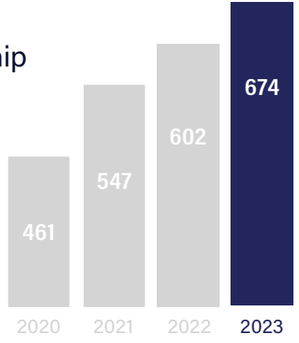


Membership at 2023 Calendar Year End



- **453** SMALL BUSINESSES
- **110** ACADEMIA
- **49** LARGE INDUSTRY
- **9** MULTI-MEMBERS
- **53** NON-PROFITS

MTEC membership increased **12%** from 2022



Member Benefits

Capabilities	Member Benefit	Outcomes
Funding	Non-dilutive funding source	Prototype and technology development
Educate	Webinars, newsletters, events	Fill knowledge gaps
Mentor	Leverage expertise	Learn from experts
Network	Partnerships	Create business opportunities
MTEC Grants	Non-dilutive funding	Advance product development
Accelerators	Entrepreneurship support	Accelerate product development
M-Corps	Access to subject matter experts	Advisory services
Foundations	Funding and branding	Advocacy and influence
Industry Partners	Market access	Follow-on funding or exit
Commercialization Services	Regulatory, market, reimbursement	De-risk and drive commercialization readiness
Investors	Access to funding	Growth and market access

Funding Distribution

USAMMDA
U.S. Army Medical Materiel Development Activity
$228M

NMRC
Naval Medical Research Center
$141M

MIDRP
Military Infectious Diseases Research Program
$90M

TATRC
Telemedicine & Advanced Technology Research Center
$53M

CCCRP
Combat Casualty Care Research Program
$180M

MOMRP
Military Operational Medicine Research Program
$139M

CRMRP
Clinical & Rehabilitative Medicine Research Program
$47M

Over the past 8 years, MTEC has created a diverse portfolio of funding sponsors:

USUHS
Uniformed Services University of the Health Sciences
$40M

ONR
Office of Naval Research
$15M

USAISR
U.S. Army Institute of Surgical Research
$8M

U.S. Army National Guard
$2.7M

JOMIS
Joint Operational Medicine Information Systems
$3M

DHA
Defense Health Agency
$12M

WRAIR
Walter Reed Army Institute of Research
$2M

USAMRDC
U.S. Army Medical Research & Development Command
$1.4M

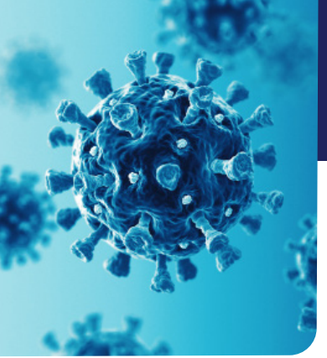
MSISRP
Medical Simulation & Information Sciences Research Program
$34M

MTEC
Medical Technology Enterprise Consortium
$3.4M

DTRA
Defense Threat Reduction Agency
$11M

USARIEM
U.S. Army Research Institute of Environmental Medicine
$1.6M

BIRCO
Blast Injury Research Coordinating Office
$800K



Military Infectious Diseases

OBJECTIVE

Prevent, predict, and treat infectious disease threats to eliminate their impacts on operational readiness and performance.

AREAS OF INTEREST:

- Far forward diagnostics of unknown pathogens
- Treatments against combat wound infections
- Pathogen agnostic countermeasures to prevent and treat sepsis
- Prevention of Bunyavirales and dengue virus infection
- Prevention and treatment of biofilm formation
- Prophylactic for endemic diarrheal diseases
- Prevention and treatment of emerging infectious diseases

2023 NEW FUNDING:
$8.9M

2023 FUNDING INCREASES:
$1.7M

NEW PROJECT SPONSORS: **MIDRP, NMRC**

NEW PROJECT AWARDEES:

University of Pittsburgh

UNIVERSITY OF HOUSTON Cullen College of Engineering

inhalon BIOPHARMA

GeneCapture

MLM Biologics Inc.

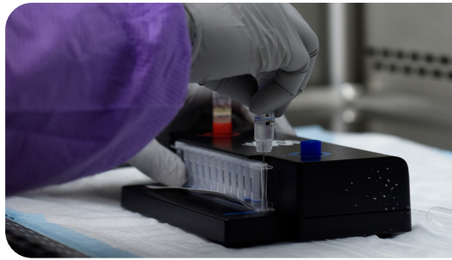
Project Highlights

BioFire Defense LLC

Funding: $4.6M

BioFire Diagnostic Wound Panel

BioFire Defense is designing and optimizing a wound infection identification panel for the FilmArray 2.0 and Torch platforms. The panel can detect bacterial and fungal organisms as well as antimicrobial resistance markers using swab samples.

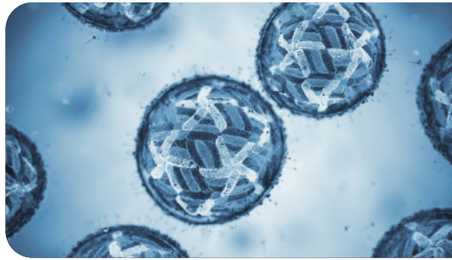


University of Maryland, Baltimore

Funding: $4.7M

Dengue Human Infection Model (DHIM) Prototype Development

The University of Maryland, Baltimore has developed a human challenge model for assessing DHIM-4 infection. The goal is to utilize the model for vaccine efficacy testing. An open-label clinical trial is now underway.



Immuron, Ltd.

Funding: $3.4M

Supplement that Prevents Traveler's Diarrhea

Immuron obtained IND-approval from the U.S. FDA to proceed with a phase 2 clinical study to evaluate Travelan® for prevention of Traveler's diarrhea. In 2023, 60 subjects completed the challenge with enterotoxigenic E. coli; results are expected mid-2024.

Combat Casualty Care

OBJECTIVE

Reduce mortality and morbidity associated with combat trauma from the battlefield to the hospital.

AREAS OF INTEREST:

- Hemorrhage control and resuscitation
- Prolonged and en route care
- Surgical support and robotics
- Burn wound assessment and treatment
- TBI diagnostics and treatments
- Solutions for extremity trauma
- Blood and blood products
- Temporary cornea repair and preservation

2023 NEW FUNDING:
$60.5M

2023 FUNDING INCREASES:
$28.1M

NEW PROJECT SPONSORS: **DHA, CCCRP, NMRC, USAMMDA, USAMRDC**

NEW PROJECT AWARDEES:

Massachusetts General Hospital
Founding Member, Mass General Brigham

TDA Research · CellPhire Therapeutics · EJENTA · CriticalInnovations · Phiex Technologies · JAG Consulting · SwRI Southwest Research Institute · Cayuga Biotech · Design Interactive · modulim · SIBEL · Wake Forest University · STERIO3 · University of Colorado Boulder | Colorado Springs | Denver | Anschutz Medical Campus · SpectralMD Seeing the Unknown

Project Highlights

Sense Diagnostics, Inc.

Funding: $2.4M

Role 1 TBI Evaluation Using Low Power Radio Frequency

Sense Diagnostics has developed a non-invasive headset to detect and monitor traumatic brain injury. The system includes 9 antennae that transmit safe, low-power radio frequency. They have successfully paired the headset with proprietary algorithms to detect intracerebral hemorrhage. Their pivotal clinical trial will be completed in 2024.

University of Colorado School of Medicine

Funding: $6M

Multicenter Implementation Trial of Targeted Normoxia Strategy to Define Oxygen Requirements

This clinical study aims to determine the optimal use of oxygen therapy to treat patients with significant burns and major trauma. They have shown that a multimodal approach to managing these patients improves time in normoxemia, while reducing the amount of supplemental oxygen used across institutions.

MediWound, Ltd.

Funding: $5M

Development of NexoBrid as a Non-Surgical Debriding Solution for Far Forward Burn Treatment

MediWound is reformulating NexoBrid® for remote military settings. The team validated it in porcine burn models and innovated the packaging for use in a far forward environment. Regulatory engagement with the U.S. FDA is ongoing.

Military Operational Medicine

OBJECTIVE

Maximize health, readiness, and performance by countering, preventing, and treating injuries.

AREAS OF INTEREST:

- Environmental health and protection
- Injury prevention and reduction
- Psychological and physiological health and performance
- Musculoskeletal injury prevention, treatment, and rehabilitation
- Warfighter performance optimization
- Post-traumatic stress disorder

2023 NEW FUNDING:
$37.4M

2023 FUNDING INCREASES:
$32.9M

NEW PROJECT SPONSORS: **BIRCO, MOMRP, NMRC**

NEW PROJECT AWARDEES: BLUEHALO, CFD RESEARCH, The Geneva Foundation, corneat vision, UCLA, The University of North Carolina at Chapel Hill, University of Pittsburgh, Phycin, hjf Henry M. Jackson Foundation for the Advancement of Military Medicine, RTI International, ARA, Circadian Positioning Systems, Kendall Square Sciences

Project Highlights

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

Funding: $1.4M

Better Together: A Primary Prevention Intervention Targeting Transdiagnostic Interpersonal Emotion Regulation

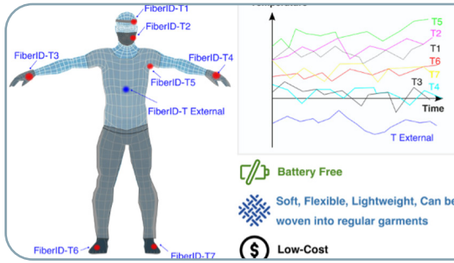
Better Together, a couple-based program, aims to reduce suicide, partner violence, and alcohol misuse. 44 military couples found it highly acceptable, with 99% planning to use the strategies taught. PREP, Inc. has recently licensed it for commercialization.

International Fabric Machines

Funding: $2.6M

Temperature and Sound Detecting Fabric

The team is focused on developing intelligent fabrics for military use. In an arctic field test, they were able to demonstrate the ability to monitor temperatures at specific locations of the body to ultimately predict and prevent injury from frostbite. The fibers are also under development to analyze physiological and ambient sound.



Defender Pharmaceuticals, Inc.

Funding: $1.7M

Scopolamine and Synthetic Scopolamine for the Treatment of Motion Sickness and Associated Symptoms

The team has completed multiple clinical studies demonstrating the safety and effectiveness of intranasally-delivered scopolamine for the prevention of nausea and vomiting, induced by motion, in adults. Diligent efforts are underway to obtain U.S. FDA approval for this treatment for military and commercial distribution.

Defender Pharmaceuticals

Medical Simulation & Information Sciences

OBJECTIVE

Optimize front line medical care and interventions through robotics, intelligent systems, and improved education and training.

AREAS OF INTEREST:

- Optimization of medical training
- Battlefield medical automation
- Autonomous care at the point-of-injury in austere environments
- Remote tele-monitoring
- Health informatics
- Human-machine integration
- Virtual and augmented education tools
- Interoperable automatic systems
- AI/ML support of battlefield triage and resupply

2023 NEW FUNDING:
$25.7M

2023 FUNDING INCREASES:
$23.9M

NEW PROJECT SPONSORS: **DHA, USUHS**

NEW PROJECT AWARDEES: STRAC Southwest Texas Regional Advisory Council; Deloitte.; University of Colorado; University of Nebraska Medical Center; The George Washington University; MDB, Inc. Doing Well by Doing Good; California State University Long Beach; UC Davis University of California

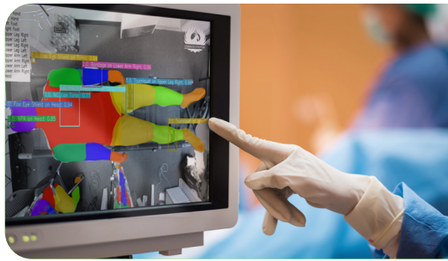
Project Highlights

Crimson Government LLC

Funding: $5.7M

iMAS Data Analytics and AI Algorithm Development for iACT

This program is integrating AI computer vision into tactical combat casualty care. Crimson has made great progress toward training the system to identify at least 20 procedures commonly conducted by operational medicine providers. Ultimately, this project will be leveraged for the advancement of autonomous battlefield care.



Moberg Analytics, Inc.

Funding: $2M

Data Fusion and AI to Optimize Severe Brain Injury Management in Prolonged Care

The Moberg Analytics AI Ecosystem is the only AI-based system that enables clinicians to understand the progression of TBI and provide individualized care. Currently available in Role 4 hospitals, the current project is to create a mobile battlefield version, the TBI Navigator, for triage and prolonged care guidance.

Chenega Healthcare Services LLC

Funding: $5.3M

Burn Patient Transfer System (BPTS)

Chenega Healthcare Services has conducted a technology demonstration of a working prototype to triage and manage burn patient transport to hospitals with available beds. The system includes a highly scalable, industry/open standards-based infrastructure, and new technology applications providing highly reliable, high-integrity, resilient capabilities on a nationwide basis.

Clinical & Rehabilitative Medicine

OBJECTIVE

Improve restorative treatments and rehabilitative care to maximize function for return to duty or civilian life.

AREAS OF INTEREST:

- Cellular therapies for trauma and critical care
- Craniomaxillofacial and extremity regeneration
- Anti-scarring and skin regeneration
- Genitourinary/lower abdomen reconstruction
- Ex vivo/on demand blood
- Musculoskeletal injury rehabilitation
- Sensory systems preservation and restoration

2023 NEW FUNDING:
$5M

2023 FUNDING INCREASES:
$16.9M

NEW PROJECT SPONSORS: **NMRC**

NEW PROJECT AWARDEES:

cohesys

Project Highlights

NuShores Biosciences LLC

Funding: $3.3M

NuCress™ Intelligent Factory in a Box

NuShores innovated an automated platform for their patented bone regeneration scaffolds. The team is refining the system, integrating quality monitoring, and aiming for high-quality, sterilized products. The vision is an adaptive, hands-free factory for large-scale or remote production with tailored solutions.

University of Pittsburgh

Funding: $2M

Large Scale Manufacturing of Extracellular Matrix Hydrogels for Regenerative Medicine Applications

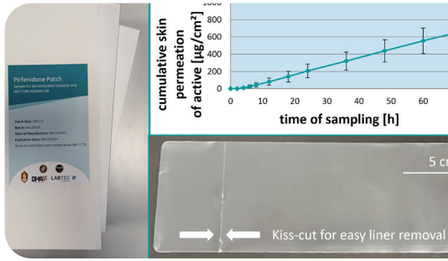
The team has developed a novel extracellular matrix hydrogel with both hemostatic and tissue regenerative properties. They have produced the hydrogel under GMP conditions and demonstrated safety and efficacy in a rodent liver laceration preclinical model.

Labtec GmbH

Funding: $6.3M

Anti-Scar Treatment for Deep Partial Thickness Burns

This project is conducting formulation and process development, supported by IND-enabling studies, to repurpose Pirfenidone (generic drug approved for pulmonary fibrosis) for use in deep partial-thickness burns and other wound types for reducing hypertrophic scarring.



Chemical & Biological Threat

OBJECTIVE

Developing products that maintain technological superiority in countering chemical and biological threats, mitigating the risks of surprise, and responding to the warfighter's urgent needs.

AREAS OF INTEREST:

- Protection and hazard mitigation
- Prevention, reduction, and elimination of chemical and biological threats
- Detection and diagnostics of environmental threats
- Strategic and operational support

2023 NEW FUNDING:
$1.2M

NEW PROJECT SPONSORS: **DTRA**

NEW PROJECT AWARDEES:

VISTENDO · RTI INTERNATIONAL · AiRANACULUS®

MTEC Innovation on the Frontlines

SurgiBox

Deployed their disposable, inflatable bubble to provide a sterile environment for medical procedures conducted under austere conditions.

PRYTIME MEDICAL™ The REBOA Company™

Provided REBOA products for minimally invasive, endovascular hemorrhage control of bleeding casualties in the field and during transportation.

MediWound

Supplied NexoBrid®, a topical agent that removes eschar, to aid casualties with deep partial and full-thickness burn wounds.

HUMACYTE®

Provided off-the-shelf bioengineered blood vessels to save lives and limbs by repairing vascular injuries resulting from trauma.

DELTA DEVELOPMENT TEAM

Distributed portable blood refrigeration systems to aid in blood transport.

REVMEDX™

Evaluated their expanding dressing for the treatment of non-compressible torso hemorrhage at the point of injury.

Strategic Partnerships

MTEC engaged in several partnerships in 2023 to increase research opportunities, capabilities, and visibility for medical issues of importance.

BARDA and **CCCRP** State of the Technology meeting for Blood and Blood Products was filled with great discussions with 202 people in attendance.

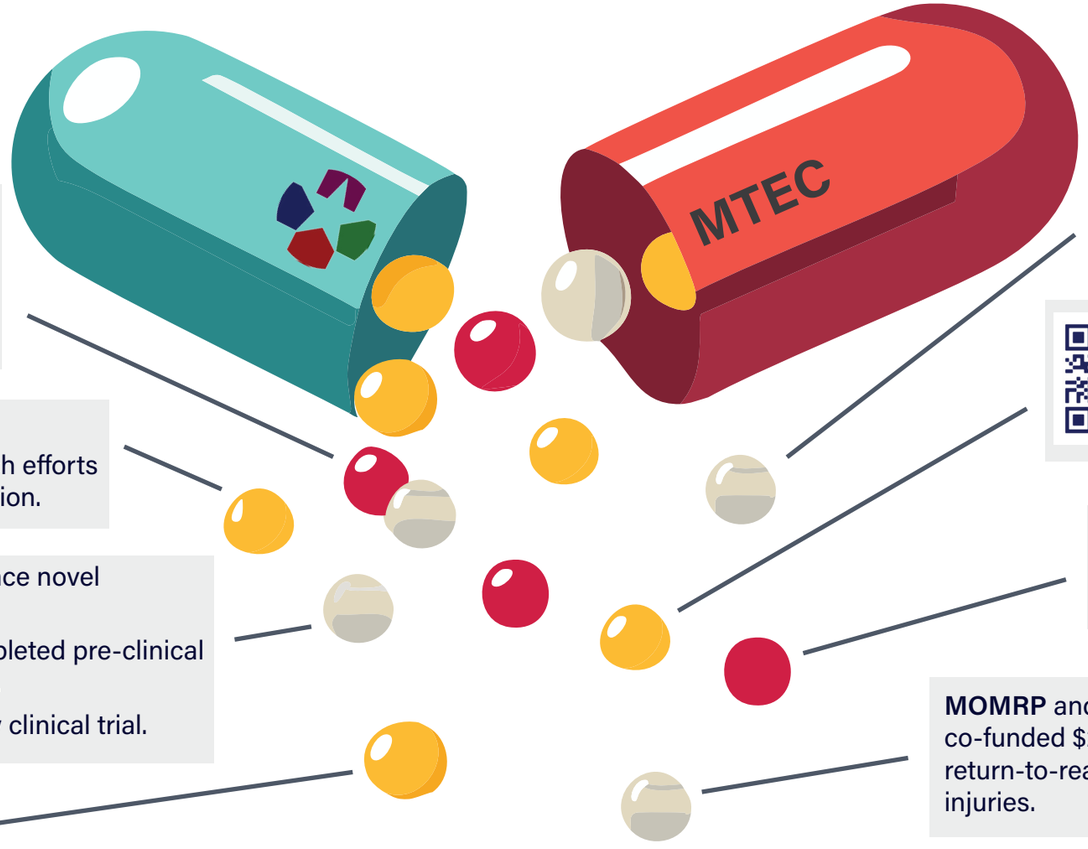
MTEC joined the Programming, Engagement and Outreach Committee of the **American Brain Coalition**, leading outreach efforts and membership engagement activities offered by the Coalition.

MTEC and **BrightFocus Foundation** co-funded $1M to advance novel treatments for repeated, mild TBI:

-University of Kentucky & Mitochon Pharmaceuticals completed pre-clinical work and requested a pre-IND meeting with the U.S. FDA.

-Astrocyte Pharmaceuticals completed their Phase I safety clinical trial.

MTEC funded a military mental health cohort of 3 mentees at the **APA Research Colloquium**.



MTEC partnered with **AUSA** to issue a first-of-its-kind scholarship, which supports the continued academic aspirations of Army medics, soldiers or officers in health care roles pursuing careers in biomedical research or health care services.

MTEC was featured on the **American Brain Coalition** podcast, Voices for the Brain. Scan the QR code to give it a listen!

The MTEC accelerator and integrator networks expanded to include multiple formal engagements, like with **MedTech Innovator** and **MATTER**.

MOMRP and the **Orthopaedic Research and Education Foundation** co-funded $2M through MTEC to advance solutions to accelerate return-to-readiness for Service Members with musculoskeletal injuries.

M-Corps Partners

M-Corps is a group of 32 subject matter expert organizations providing services to MTEC members in the following domains:

Regulatory & Clinical

- Navigate complex regulatory pathways and ensure compliance with healthcare regulations.
- Services include regulatory strategy, U.S. FDA meeting assistance, and clinical trial management.

Scientific & Engineering

- Offer design and development expertise for medical products that include small molecules, biologics, diagnostics, medical devices, and IT.
- Services include IND and IDE-enabling studies, product design, prototyping, and testing.

Business

- Enable refinement and focus on commercial planning and implementation.
- Services include strategic planning, market entry, reimbursement, investment advisory, and corporate development.

Scan to meet the M-Corps!

Commercialization Grants

In 2023, MTEC awarded 9 Commercialization Grants totaling $450K in non-dilutive funds to small business members. These grants facilitated partnerships with M-Corps Partners for product development.

Awardee: Diagnostic Biochips, Inc.
M-Corps: Convergent Clinical, Inc.

Awardee: Limax Biosciences, Inc.
M-Corps: AliraHealth

Awardee: Sonogen Medical, Inc.
M-Corps: RPMTech

Awardee: Moberg Analytics, Inc.
M-Corps: CORNERSTONE — AN EMPLOYEE-OWNED COMPANY

Awardee: NIRSense, LLC
M-Corps: Latham BIOPHARM GROUP

Awardee: Purgo Scientific, LLC
M-Corps: TreMonti

Awardee: Sense Diagnostics, Inc.
M-Corps: AliraHealth

Awardee: Matregenix
M-Corps: greenlight guru

Awardee: Vistendo Inc.
M-Corps: The Conafay Group — GOVERNMENT RELATIONS + SCIENTIFIC PERSPECTIVES

Accelerators

MTEC's accelerator partners provide members with support in mentorship, networking, and additional resources.

MEDTECH INNOVATOR

- Premiere global medical device accelerator.
- MedTech Advantage Fund announced in 2023.
- Dedicated MTEC Military Medical scouting track.

MATTER

- Members have exclusive access to Flex.
- Flex is a knowledge library with expert clinics, and other resources for life science start ups.

COMING IN 2024

- In 2024, members can look forward to more opportunities coming from accelerator partners.

MTEC Ventures

MTEC Ventures provides investment preparation support services to MTEC small business members that have gap funding needs and are fundraising to advance their medical technology development for both military and civilian use.

Scan to meet the Ventures Council!

MTEC Ventures Goals

Network Building

Expand investor network for emerging medical technology companies serving MTEC's mission.

Readiness Enhancement

Enhance investment readiness of MTEC small businesses and connect with investors.

Capital Access

Facilitate capital access for MTEC member medical technology development.

How To Join MTEC Membership

Joining MTEC is Easy!

Step 1:
Review the Consortium Member Agreement

Step 2:
Fill out and submit the online MTEC Membership Application

To determine if your organization is a good fit, contact MTEC Chief Science Officer at lauren.palestrini@mtec-sc.org

START HERE

www.mtec-sc.org/how-to-join

Annual Membership Dues:

$5,000 - Large Businesses
$1,000 - Small Businesses, Academic Research Institutions, Not-for-Profits
$500 - Multi-member Organizations

Testimonials

FOUNDATION PARTNER

"The American Brain Coalition takes immense pride in our collaboration with the MTEC. Our partnership stands as a powerful symbol of the unified commitment shared by civilian and military leaders toward advancing brain health."

Katie Sale, Executive Director, American Brain Coalition, AmericanBrainCoalition.org

MILITARY SPONSOR

"We are extremely thankful for the assistance that MTEC provided in execution of the 2-day Blood and Blood Products State of the Technology meeting that was co-sponsored by CCCRP and BARDA. The meeting brought together experts from academia, industry, and government for frank discussion regarding current and future technologies, as well as the current state of the national blood system. The output from this meeting will assist the Government in planning for future investments to meet military and civilian blood requirements."

Captain Travis Polk, Director, U.S. Army Medical Research and Development Command's Combat Casualty Care Research Program, CCCRP.Health.mil

MTEC MEMBERS

"MTEC, as a consortium manager, provides world-class service to combine a simplified acquisition approach with technology innovation that meet the military's most challenging needs. From its scientific team to contracts staff, MTEC provides best-in-class support to advance medical innovations for Warfighter health."

Brad Becker, Co-Founder, Crimson Phoenix, CrimsonPhoenix.com

"MTEC has been and continues to be a key partner with Sense Diagnostics in its development of our prototype device for military use. Their assistance in acquisition of funding and critical feedback has been critical to our success."

Joseph Korfhagen, VP Product Development, Sense Neuro Diagnostics, SenseNeuro.com

M-CORPS

"Thanks to MTEC for supporting NIRSense with a commercialization grant! We learned a lot working with M-Corps partner Latham Biopharm Group, who is assisting us in transitioning our technology to improve chronic disease management. Dan Rodenhaver and I really enjoyed the pitch practice and dialogue, and I'm excited about what the future holds!"

Casey Boutwell, CEO, NIRSense, NIRSense.com

MTEC Board of Directors

MTEC Board Chair
Ellen Embrey
Stratitia, Inc.

Device Manufacturer

Mark D. Breyen
Medtronic, Inc.

At Large

Michael Brown
GE HealthCare Technology & Innovation Center

At Large

Ross Donaldson
Critical Innovations LLC

Small Business

Christopher Hlubb
Agrilogics Group

At Large

Kent Kester, MD
IAVI

Academia/ Nonprofit

Pierre Noel, MD
Mayo Clinic

Large Business

Andrew Omidvar, PhD, MBA
Philips Healthcare, Inc.

At Large

Ron Poropatich, MD
University of Pittsburgh

At Large

Amy Salzhauer, PhD, MBA
Good Growth Capital Ventures, LLC

At Large

Peter H. Soderberg
Worthy Venture Resources LLC

MTEC Leadership

Bill Howell
President

Shawn J. Green
Chief Strategy & Business Development

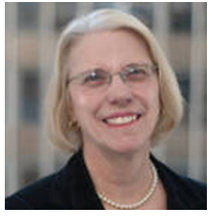
Julia Martin
Chief Financial Officer

Jill Sorensen
Chief Development Officer

Dr. Lauren Palestrini
Chief Science Officer

Bill Evans
Treasurer

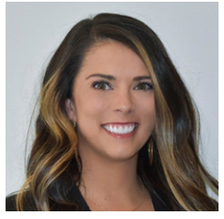
Kathy Zolman
Chief of Consortium Operations



Dr. Susan Raymond
Director of Foundation Relations

Richard Satcher
Director of Commercialization

Rebecca Harmon
Chief Contracting & Compliance Officer



Taylor Hummell
Contracts Manager

Evan Kellinger
Program Manager

Madison Bell
Marketing & Communications

2023 Highlights:

- $1 Billion Dollars in Ceiling
- 13 Solicitations, 60 Awards, $242M Awarded
- 3 New Funding Sponsors Added to the MTEC
- Released First Prize Competition
- Hosted State of the Technology Meeting with DoD and BARDA

MTEC
Medical Technology
Enterprise Consortium

Connect with MTEC

Join MTEC Membership

Visit mtec-sc.org