

# MVP INSIDER



A newsletter  
for Million  
Veteran Program  
participants

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# MVP Is Almost One Million Veterans Strong

## A Letter from Dr. Mike Gaziano



Dr. Mike Gaziano (left) and Vietnam Veteran Randy Hall (right).

Dear MVP Participants,

When we talk to Veterans about joining the Million Veteran Program, we're very quickly asked about the bottom line: *Will it help other Veterans? Will it help other Americans?*

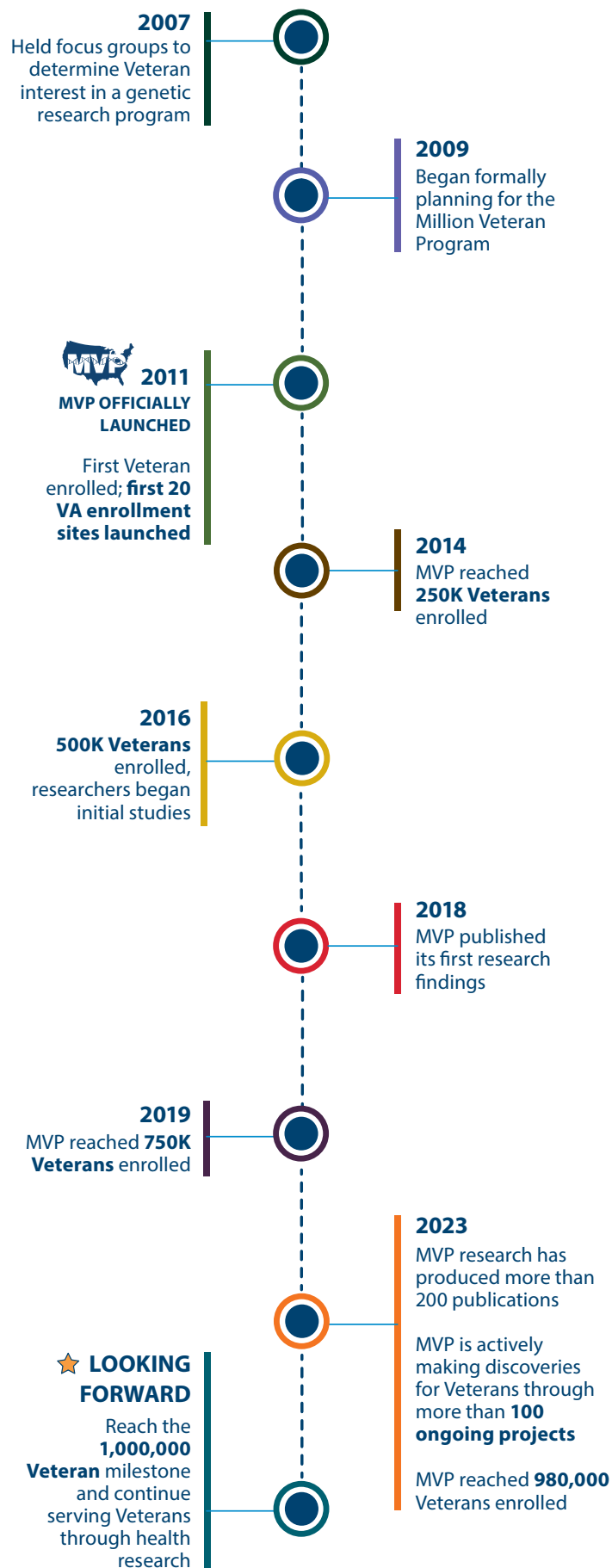
It is likely that this commitment to serving others is what encouraged you to embark on your military career—no doubt it is that same calling that led many of you, as well as my father and my son, to become one of the 980,000 Veterans who have joined MVP.

This amazing outpouring of support from the Veteran community has led MVP to be one of the most respected programs of its kind in the entire world. The diversity and depth of the information we have received from Veterans like you is truly unmatched, and we are making strides toward improving whole health for Veterans because of it. As the world's largest genomic research program tied to a national health care system, we are so excited about what this program has accomplished—and the possibilities for what comes next.

Thanks to your participation, our MVP research team is able to work on some incredibly exciting science. This past year, we published over 100 research studies about dozens of health conditions, including tinnitus, Alzheimer's Disease, prostate cancer, endometriosis, and more. We released one of the largest genome-by-phenome wide association studies ever conducted—and the outcome of this research has unparalleled opportunities to improve health care for all people. We continue to make these discoveries because you've allowed us to study how genes, lifestyle, military experiences, and exposures interact to form a picture of a Veteran's whole health. Without you, none of this is possible.

It is the greatest honor of my life to be able to serve Veterans through MVP, and I know that the entire team feels the same. The sense of service and loyalty that we see in MVP's Veteran participants is echoed in the sense of mission and pride we feel to work on this program.

Thank you for joining MVP and continuing your lifetime of service to others.



# Veteran Stories From the Field

At MVP, each Veteran participant brings their unique genes, health, and experiences to the program. Four Veterans shared their one-in-a-million stories with us. What's yours?

## 9/11 Survivor 900,000th Veteran in Million Veteran Program



*Greg Amira, Retired Army Reservist and MVP's 900,000th Veteran.*

During a trip to the VA Hospital in Tampa, Florida, retired Army Reservist Greg Amira saw something that caught his eye: a banner for the Million Veteran Program. He asked a few questions and signed up on the spot, becoming the 900,000th Veteran to join VA's largest-ever research program.

Service to others is a lifelong calling for Amira. He was on his way up to his office on the 73rd floor of the World Trade Center when the first plane hit on 9/11. He evacuated, but once he reached the lobby, he immediately turned back to help first responders. An Army Reservist, he said, "You run to the catastrophe, it's just instinct." During search and rescue, he suffered back and neck trauma, shrapnel wounds, and a traumatic brain injury (TBI).

In 2006, Amira received a letter from the US Army Special Operations Command, recalling him to deploy in support of Operation Iraqi Freedom. While he'd been on permanent disability from his civilian career since 9/11, the Army Reserve had

placed him in the Individual Ready Reserve. He had two choices: deploy or resign. He chose to deploy.

He landed in Iraq during one of the deadliest years of the war. "I was tasked with helping people meet with business leaders and local politicians and trying to rebuild," Amira explained.

Just weeks before coming home, an improvised explosive device (IED) struck his convoy. He leapt from his vehicle to try and rescue those who were in the Humvee that the IED hit directly, including his company commander who died in the attack. Due to injuries sustained in the attack, Amira received a Purple Heart.

Amira's wounds from 9/11 and Iraq are not readily visible to others, but he carries them every day. Now he focuses on giving back wherever he can, like starting a non-profit to support fellow combat wounded Veterans.

He viewed joining MVP as another opportunity to give back. "That's usually what I look for, if it's going to help somebody else," said Amira. When he learned that enrollment would only take a few minutes and help researchers forever improve health care for Veterans, he rolled up his sleeve. Now he's part of the over 980,000 Veterans in MVP continuing to make a difference.

## Marine Corps Veteran Jennifer Higginbotham Finds Hope and Purpose in MVP



*Marine Veteran Jennifer Higginbotham becomes Huntington VA's 100th Veteran to join MVP.*

Spring 2002 in Kenosha, Wisconsin, Jennifer Higginbotham walked across her high school graduation stage and into the Marine Corps recruiter's office. "It's going to be hard. It's going to be tough, especially being a female," the recruiter told Higginbotham. "Awesome," she replied. "Sign me up."

Higginbotham remembers her first deployment to Iraq as loud, with constant noise from mortars and small arms fire near her air base west of Baghdad. She worked in logistics, running convoys to Fallujah, Blue Diamond, Ramadi, and Al Asad. Sometimes, they'd drive through the desert in the middle of the night to avoid enemy detection. Five months after arriving home, she volunteered to go again. "My parents weren't too happy," she chuckled, recounting the memory.

By the time Higginbotham left the military, she'd fallen in love with another Marine. They moved to his hometown of Barboursville, West Virginia, planted roots, and grew their family over the last 16 years. Higginbotham's experiences from her two combat deployments stuck with her after returning home. The young mother of three struggled with memories of explosions,

dark nights riding in armored vehicles, and the fear of not knowing whether she'd make it back to the base alive.

She decided to get help and reached out to the Hershel "Woody" Williams VA Medical Center. She received treatment from mental health professionals and met with fellow Veterans going through similar experiences, which helped her break down the stigma she had associated with posttraumatic stress disorder (PTSD).

"There's a sense of connection here I wouldn't get anywhere else. At VA, you're with your fellow brothers and sisters," she said.

She now works in Peer Support at the same VA Medical Center. Every day, Higginbotham meets with Veterans who are reaching out for help and spends time sharing stories. Through this process, she lets other Veterans know they are not alone—and she offers hope.

One day, Higginbotham received an invitation to join MVP. She thought, "If there is anything that would improve [Veteran] care in the future, then I would be happy to be part of it."

Higginbotham made an appointment for the following week to enroll, becoming the 100th Veteran to enroll in MVP at the Huntington VA.

"Serving is in our blood," she said. "That desire never goes away. I'm proud to be a part of this."



## VA Press Secretary, an Army Veteran, Joins MVP

Terrence Hayes, VA Press Secretary and 20-year Army Veteran, knows his calling is to help other Veterans. We sat down with Terrence to learn how his calling led him to become part of MVP.

### Why did you join MVP?

"MVP can have a huge impact on folks who may have been affected by military exposures. I served in Iraq. I was in areas where burn pits were. I need to be part of MVP because it could possibly impact others who have been there, as well."

### What was your military experience like?

"I deployed to Iraq in December of 2006 to March of 2008, a



VA Press Secretary and Army Veteran Terrence Hayes pictured here with his daughters.

15-month deployment. And we were there during what's called 'the surge.' It was one of the most challenging, difficult times of that period in Iraq.

"[Upon returning from deployment], I was diagnosed with general anxiety disorder. I had no idea I had my first anxiety attack when I was in Iraq. I didn't know what it was. I had no clue then. I couldn't describe it to anyone. Fortunately, one day, I experienced one of those episodes in front of my wife and she knew what it was."

### Why is it important for Veterans like you to join MVP?

"I believe in Veterans helping other Veterans. I believe that's my calling. I've served in the military for 20 years, fighting alongside my battle buddies and I want to do that in this field as well. I want to be able to raise my hand, be a part of some research that can be groundbreaking for men and women just like myself, who have served."

"I'm encouraging every Veteran, no matter where they're from, no matter what demographic: if you are thinking about helping other folks, if you want to continue your service, sign up for MVP. This will help us really make some groundbreaking efforts for our health."

## Veteran Zaneta Adams Gives Back to VA Community That Helped Her Heal

In 2006, Zaneta Adams was sitting in her wheelchair at home in Wauconda, Illinois, and reflecting. "People expect dads to go to the military. No one really expects moms to go," she said. As a young mother with disabilities who was experiencing depression, Adams felt alone. As a woman Veteran, she felt invisible.

Adams had recently undergone several back surgeries to address a hematoma that had grown into a tumor after she sustained a 10+ foot fall during a pre-deployment combat training exercise. "Because I had my flak jacket and all of those things on, I fell hard," said Adams. Following her last surgery, the doctors were not sure she would ever walk again.



Veteran Zaneta Adams continues to give back by advocating for Veteran health care.

Soon after, Adams attended an adaptive recreation event in Aspen with other wounded Veterans, all of whom were women. She was amazed to find them rock climbing, skiing, and hiking—activities she'd never participated in before her accident, let alone after. With the help of trained staff and volunteers, she strapped into adaptive equipment to ski the peaks of the Rocky Mountains.

Flying down the slopes, she felt alive for the first time since her fall. She realized: "As long as I believed I would be in that wheelchair, I stayed in it." She set out to change that.

After Adams committed herself to walking again, she achieved that goal and more: eventually making her way through law school and into the Michigan state capitol. There she stood, nearly two decades after her injury, a gubernatorially-appointed director of the Michigan Department of Military and Veterans Affairs. She was the first female and the first Black Veteran to serve in the role.

Adams continues to draw strength from her story and those of other women Veterans who've struggled with depression, anxiety, and posttraumatic stress disorder (PTSD). She's driven by a desire to make their experiences better understood by fellow Veterans and the health care community. That desire led her to join MVP and continue giving back to other Veterans.

# How Could Genes Affect Your Mental Health?

When our team asks Veterans what research areas are important to them, we often hear a similar answer: “mental health.” The numbers support this answer—more than 1.7 million Veterans received mental health services at VA last year.

One key aspect of mental health care is mental health research. At MVP, we’re studying how genes, lifestyle, military experiences, and exposures interact to affect health—including mental health.

## Research Findings



### PTSD

- We found genes related to re-experiencing traumatic memories, a common symptom of PTSD.
- We confirmed that the likelihood of experiencing PTSD can be inherited, meaning a person’s chance of carrying genes related to PTSD is higher if one or both parents had PTSD.

**This research may lead to improved PTSD screenings, preventions, and treatments for Veterans.**

*Of the six million Veterans who received care from VA in 2021, 10% of men and 19% of women were diagnosed with PTSD.*



### Substance Use

- We found genes linked to opioid use disorder (OUD) that are related to substance use and psychiatric disorders. These genes may impact the brain more than the rest of the body, meaning OUD could be a brain disease.
- We found new parts of the gene linked to alcohol use disorder, which can help researchers understand the biology of alcohol use.

**This research may lead to reduced stigma and improved treatments for Veterans experiencing addiction and substance use.**

*More than 20% of Veterans with PTSD also have substance use disorder which is known to affect both physical and mental health.*



### Suicide Prevention

- We learned that many Veterans who report a suicide attempt also experience severe sleep problems like insomnia.
- We found that Veterans who attempted suicide had a harder time absorbing oxytocin—a natural hormone that helps us form feelings of bonding and trust—than Veterans who did not attempt suicide. A lack of oxytocin may contribute to feelings of social isolation.

**This research can help doctors better understand potential risk factors for suicide, which may lead to improved screenings and preventions.**

*If you or someone you know is in crisis, you are not alone. For 24/7 confidential crisis help, dial 988 and press 1.*



### Anxiety

- We learned more about the genetic structure of anxiety disorders and their relationship to other mental disorders.
- We found new insights into the biological basis for anxiety and related conditions.

**This research may help doctors better identify and treat anxiety in Veterans.**

*Nearly one-third of adults will experience a form of anxiety at some point in their lifetime.*

# How One Veteran and VA Researcher Is Changing the Future of Alzheimer's Disease



Army Veteran and MVP Researcher Dr. Mark Logue pictured here during his time in service in the '80s.

Army Veteran Dr. Mark Logue, a VA statistician and genetics researcher, is reminded every day why he's chosen to research factors that influence health risks for Veterans. "When I walk through the lobby downstairs [at VA], I see people waiting for treatments and I know we're helping Veterans just like them."

Dr. Logue wanted to search for potential links between various aspects of brain health, including PTSD, traumatic brain injury (TBI), and Alzheimer's and other related dementias (ADRD). He set out to answer an important question: do PTSD and TBI interact with Alzheimer's disease genes to lead to even more cases of ADRD?

The findings were clear: PTSD and TBI do increase a Veteran's risk for developing ADRD, and these effects were higher in those with high-risk Alzheimer's genes.

Dr. Logue's research already has positive implications for Veteran health. The Department of Defense and the Veteran's Brain Injury Center estimate that 22% of all Operation Enduring Freedom/Operation Iraqi Freedom combat wounds are brain injuries; better screening and identification of these injuries, like TBI, may lead to earlier detection and better outcomes for Veterans at risk of ADRD.

There is also the potential for new discoveries that could help researchers and doctors develop better treatments and preventions. Someday, researchers may even be able to identify people with a high risk of Alzheimer's long before symptoms begin, and to help prevent the neurological effects of Alzheimer's.

"A lot of us have family members or friends who have been diagnosed with Alzheimer's disease. Many of us know someone experiencing PTSD or living with the effects of a TBI," Dr. Logue said. "I'm grateful that I can be involved [in MVP], and I'm motivated to keep doing research for the Veterans who made it possible."

## Spotlight: Women's Health

One in 10 MVP participants are women. Over the last year, our researchers made new discoveries about women's health that were made possible by women Veterans in MVP.



### Endometriosis

Endometriosis is a condition affecting up to 10% of women between ages 15 and 44. It occurs when part of the uterus, called the endometrium, grows outside the uterus. It may cause infertility or difficulty getting pregnant.

- We identified part of a gene that's connected to both depression and endometriosis, meaning that endometriosis may be linked to mental health conditions in women.
- We learned that care for endometriosis may be improved by taking a whole health approach, rather than treating just physical symptoms.

***"Our findings support that endometriosis is a chronic systemic disease, with complex links to women's mental health, rather than a classic gynecological disease."***

- Dr. Dora Koller, VA researcher and postdoctoral fellow at Yale School of Medicine.



### Osteoarthritis

Osteoarthritis is a form of arthritis that affects joints in the hands, spine, knees, and hips. More than two in five women Veterans in MVP report having osteoarthritis, making it one of the most common conditions experienced by women in MVP.

- We learned more about the genetic risk factors for osteoarthritis, which could lead to new interventions and treatments for women with osteoarthritis.
- We discovered that drugs currently used to treat other conditions may be able to treat osteoarthritis pain.



### Heart Disease

Heart disease is the leading cause of death for women in the United States.

- Women and men in MVP who report eating nuts, but not peanut butter, more than 5x per week have a lower risk of coronary artery disease.
- We learned more about three genes that protect against different types of heart disease. This could lead to improved detection, prevention, and treatment for heart disease.

# Thank You to MVP's Participants

A letter from Dr. Sumitra Muralidhar, MVP's Program Director



Dr. Sumitra Muralidhar,  
MVP's Program Director.

As we approach our goal of one million Veteran participants in MVP, I find myself looking back to when MVP was just an idea—one that truly seemed like a dream. We left our initial meetings feeling excited about the possibilities, but aware of the hard work and dedication it would take for us to realize that dream. Over a decade later, it is thanks to each of you that MVP is now a reality. We are achieving our dream of bettering health care for Veterans, and all Americans, thanks to the 980,000 of you that once again stepped up in service of your country.

## MVP Is for Every Veteran

MVP is one of the most diverse programs of its kind in the entire world. Regardless of race, ethnicity, age, gender, abilities, conditions, exposures, illnesses, or service eras—we want MVP to help every single Veteran. As we near the million Veteran milestone, we are doubling down on our efforts to ensure MVP is representative of all Veterans. More participants from all backgrounds means more opportunities to find positive, real-world applications to improve Veteran health care in clinical settings for every Veteran.

## Making Research Matter

The goal for our research—made possible by you—is to help doctors find new ways to detect, prevent, and treat health conditions that matter to Veterans, including different types of cancers, heart disease, mental health, and more. The PACT Act recently expanded VA health care and benefits for Veterans with military exposures; at MVP, we're gearing up to study how these exposures may affect health.

Your contribution also helps us positively affect health care nationwide. MVP's research will assist in the Cancer Moonshot initiative, aiming to cut the death rate from cancer by at least 50% over the next 25 years. Your involvement in this program will help improve health care for all Americans.

## Thank You

We can never thank you enough for your participation in MVP. Without you, there is no Million Veteran Program. Your willingness to continue serving your fellow Veterans gives our team the opportunity to turn that service into science. Each and every day our team works to turn the incredible data in MVP into practical and positive applications. We will continue striving for better health care for all Veterans, including better screenings for diseases like Alzheimer's and dementia, earlier detection for various cancers, and preventive strategies for conditions like PTSD and traumatic brain injuries.

Thank you for being a part of this legacy. The opportunity to study genetics, lifestyle, exposures, and how it all combines to affect a Veteran's whole health is truly one of a kind. And it's an opportunity to make a difference in the lives of all Veterans—those who served before you, alongside you, and those who will serve after you.

## Invite More Veterans to Join the Million Veteran Program

- Cut out the invitation below and share it with a Veteran you know to help us reach the million milestone
- Tell us why you joined MVP on social media by using the hashtag #MyMVPMoment



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