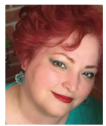




Unity and Inclusivity

THE MILLION VETERAN PROGRAM (MVP) is driven by the belief that *together* we can improve Veteran health for generations to come. Our mission relies on *unity* and *inclusivity* – MVP partners working alongside staff to turn our vision into a reality. Throughout this challenging time in our country's history responding to a global pandemic, MVP partners and staff have remained connected. One of the largest efforts of its kind in the world, MVP is truly *stronger together*. A few MVP team members share the variety of ways that they are connecting with Veterans.

GRATITUDE Texas



Graciela (Lina) Perez sends thank you letters to COVID-19 patients. *"I want to think our hearts can still connect despite the PPE and safety precautions separating us. Thank you, Veterans, for sharing your light!"*

VALUE Kansas



Jackie Pursley and Patrice Henry work as a team. *"We focus on letting all MVP partners know how valuable they are to the program,"* explains Pursley, *"regardless of race, gender, sexual orientation."* By working their schedules around Veteran needs, they foster program inclusivity.

COMMUNITY Louisiana



Eric Cousin, a former U.S. Navy Corpsman, likes sharing military stories. He often hears older Veterans reference past experiments in which minorities were subjected to unethical research.

"Participants today have many more rights," Cousin tells them.

"Many studies will benefit the African American community significantly."

CAMARADERIE New York



Mohammed Rahman shares that *"there have been a few of our Veteran Partner faces that I've gotten to know really well. The most familiar face happens to be the first person who I drew MVP blood from."* Rahman still sees this Veteran around VA. *"I found myself hoping he'd walk in,"* Rahman says, *"because I know his presence in the room could lighten up the mood."*

INSIDE

- 2 Conversation with MVP Leadership
- 3 COVID-19 & MVP Research
- 4 MVP Snapshot | MVP Inclusivity
- 5 Recruitment & Enrollment | Genetics Defined
- 6 Using MVP Data to Help Veterans
- 7 MVP Research



 **For more MVP stories, visit us online at mvp.va.gov**

We want to hear from you!

If you have an MVP story to share, please contact us at askMVP@va.gov or **866-441-6075**.

A CONVERSATION WITH MVP LEADERSHIP

Sumitra Muralidhar, Ph.D., Director of the MVP, and J. Michael Gaziano, M.D., M.P.H., MVP's Principal Investigator, answer important questions about MVP.



Q What's new in the MVP program this year, and what do you see in MVP's future?

A This year, we have expanded the amount of information we gain through blood samples. We've designed a new platform that is able to detect genetic differences in various groups, such as those of African or Hispanic ancestry. We have made significant scientific discoveries in terms of genetic associations in several areas including PTSD, anxiety, heart disease, and diabetes. When the COVID-19 pandemic started, we knew it was important to collect data through the MVP COVID-19 Survey to quickly answer questions about the pandemic. Going forward, we will be able to look not only at the hand you've been dealt genetically, but also the way in which you're playing that hand. With these findings, we aim to benefit the health of Veterans and the population at large.

How is MVP helping to better understand COVID-19?

We encourage MVP partners to respond to the MVP COVID-19 Survey. Our researchers are beginning to look at the genetic differences in COVID-19 expression.

Some people are asymptomatic, and others have a whole spectrum of complications, and even death. Survey responses and medical record information are important to helping us answer questions like: are the differences we see explained by medical conditions, genes, or something else? We're one of the few organizations that has the capacity to find answers to these and other questions.

What does unity and inclusivity mean to you in the context of MVP?

When we talk about *unity*, we mean the more than 825,000 MVP partners and over 300 people across the country working on MVP. Everyone has gone above and beyond to make this a successful program. *Inclusivity* means making sure all parts of our society are represented at all levels of the program. VA is the only place where underrepresented communities join in research projects at the same rate as majority communities in our society. Until now, most genetic research has

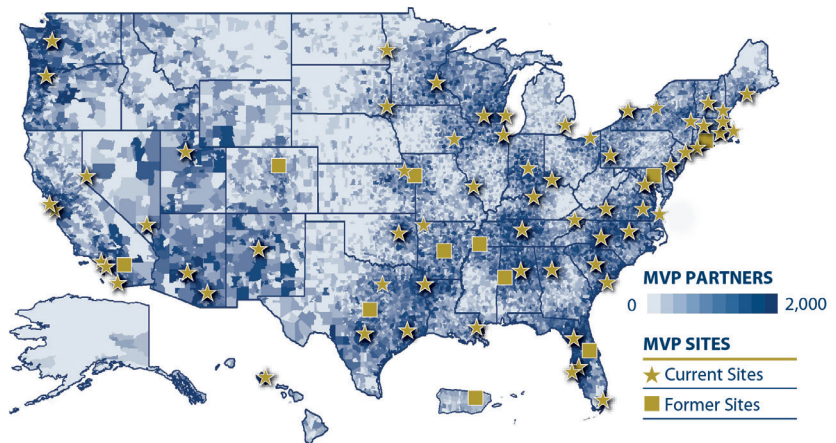
been done on individuals with European ancestry. We have more than 100,000 Black, Indigenous, and People of Color (BIPOC) Veterans in our cohort. That allows us to research important areas of health and disease on their behalf.

Do you have any special messages for MVP partners?

Thank you for your military service – and thank you for serving again in this important and enduring way to help us figure out how genes affect health, so we can improve the health of Veterans and all Americans. We know there is a lot of peer-to-peer communication about the program and appreciate your willingness to spread the word about MVP. Thanks also for the feedback you give us through your letters, emails, and phone calls. We appreciate hearing from you!

 **For the full interview, please visit us online at mvp.va.gov**

MVP PARTNER & SITE LOCATIONS





COVID-19 & MVP RESEARCH

IN NOVEMBER 2019, physicians in China reported a new type of contagious respiratory disease, which the scientific community named **Coronavirus Disease (COVID)-19**. Three months later, the first case of **COVID-19** was reported in the United States – and MVP leadership jumped into action.

“MVP was uniquely designed to be a rapid response program that could help scientists determine who is at high risk to suffer the consequences of the virus. Our genetic data could help find avenues of treatment that might prevent complications and hospitalizations,” says J.P. Casas, M.D., Ph.D., Executive Director of MVP.

Because MVP is one of the largest genomic biobanks in the world, “we have a responsibility to produce knowledge that will be helpful to the scientific community worldwide,” Casas tells us. “MVP is also one of the very few biobanks that represents the demographics of the United States. We know nonwhite populations are suffering most from COVID-19. The data we have from people of African, Hispanic, and Asian descent is incredibly important.”

In March, MVP developed a COVID-19 survey and is now looking for new biospecimens from Veterans. A random subset of MVP partners will be asked to provide blood samples for antibody tests. “We’re looking to determine the prevalence of the virus by age, geographic location, race, and other factors,” says Casas. Researchers will also ask some MVP participants who have had COVID-19 to provide blood specimens over time. “We want to know how long the immune response lasts in those recovered from COVID,” Casas explains.

“What Veterans are doing is important,” Casas concludes. “Their participation makes this necessary science possible.”

The MVP COVID-19 survey provides a way for MVP partners to help

VA researchers learn more about the disease. Available online and through the mail, the survey asks about Veteran health and how the pandemic has affected their lives.

“We are collecting the general experience of everyone living through this pandemic, not only those who have had the disease,” explains Stacey Whitbourne, Ph.D., MVP’s Program Director for Recruitment and Enrollment. “Isolation and loneliness are key factors for both physical and mental health. People’s experiences living through the COVID-19 pandemic may have long-term effects.”

Another MVP COVID-19 Survey request will be sent this fall

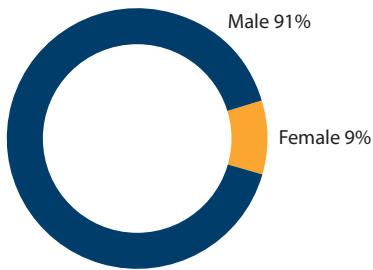
All eligible MVP partners have been asked to complete the survey. As of August 1, over 40,000 MVP partners have completed it. A second request will be sent this fall, and Veterans may complete the survey more than once.

Meanwhile, MVP staff are calling MVP partners asking for their help with completing the survey. According to Annie Nolan, Supervisor of the MVP Info Center, “we’re doing our best to reach every MVP partner,” Nolan says. “We’ve had overwhelmingly positive responses so far!” A Navy Veteran, Nolan adds, “I am really proud my MVP family is stepping up and doing their part to help further research on COVID-19.”

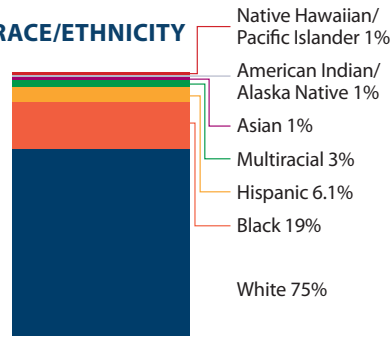
“We thank Veterans for their continued partnership with us,” Whitbourne concludes, “and service to our nation.”

WHO'S IN MVP?

GENDER



RACE/ETHNICITY



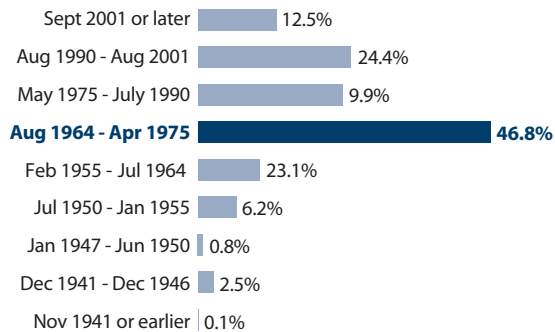
Top 5 Conditions for Men

- Hypertension (48%)
- High Cholesterol (36%)
- Cataracts (36%)
- Skin Condition (32%)
- Tinnitus (31%)

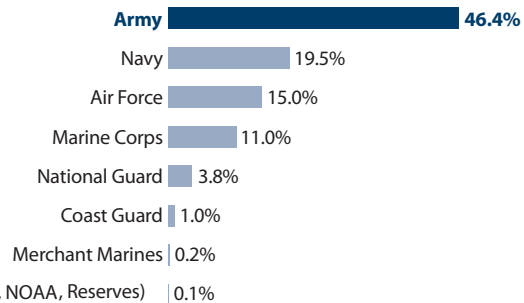
Top 5 Conditions for Women

- Depression (36%)
- Skin Condition (32%)
- Hypertension (31%)
- Acid Reflux/GERD (28%)
- Osteoarthritis (28%)

SERVICE AREA



SERVICE BRANCH



MVP is an Inclusive Group

INCLUSIVITY ISN'T JUST A SLOGAN FOR MVP – ensuring that MVP partners reflect the gender, racial, and ethnic groups to which Veterans belong is vital to the success of the program.



“For us to do impactful scientific research and identify differences between these groups, we really need the power of numbers,” says Jennifer Deen, MVP Program Manager, National Outreach and Communications.

Through outreach, MVP seeks diversity across groups - women Veterans, BIPOC Americans, rural Veterans, and Veterans of

different socioeconomic statuses. MVP’s outreach efforts include working closely with specific VA organizations, like the Center for Women Veterans and the Center for Minority Veterans. “We also value the feedback we receive from Veterans on how we can continue to improve our outreach,” Deen tells us.

MVP is working with Mobile Vet Centers to do outreach in areas distant from VA facilities. Staff visit state fairs and stand-downs for Veterans experiencing homelessness to recruit new enrollees. “We know those experiencing homelessness also deal with mental health and other

health conditions, and there’s much we can learn from them,” Deen explains.

The outreach team and local staff also visit national and state Veterans Service Organization (VSO) events. They are hoping to resume visits to local VSO posts as well once travel restrictions caused by COVID-19 are lifted.

MVP Online is another great way to encourage participation. “It has given us a tool to reach other populations we haven’t been able to reach out to in the past,” says Deen. “We’re no longer limited to brick and mortar enrollment and education opportunities.”

“The MVP cohort is very representative of the entire VA population,” she concludes. “It’s important to know they represent the people we are serving.”

MVP RECRUITMENT AND ENROLLMENT AND THE PANDEMIC RESPONSE

LAST FALL, VA LAUNCHED MVP ONLINE (mvp.va.gov). To date, more than 30,000 Veterans have logged on, over 6,000 have joined, and 3,000 have scheduled MVP visits online.



MVP Online has proven particularly valuable during the COVID-19 pandemic. “In mid-March, MVP staff across the nation pivoted, practically overnight, to protect and support Veterans and their local medical centers in the face of the pandemic,” explains Jessica Brewer, M.P.H., MVP’s Deputy Program Director, Recruitment and Enrollment. “We quickly stopped in-person recruitment and enrollment in mid-

March,” Brewer continued. “We canceled all MVP visits and suggested that Veterans visit us online.”

Brewer’s team has also been working on ways to collect specimens remotely. In 2019, they piloted at-home saliva collection and are exploring options to allow Veterans a way to provide blood specimens without having to visit a VA facility.

“From day one, we put Veterans’ and our team’s safety first,” she concludes. “We can’t wait to invite Veterans back to our MVP locations – but we’re being very cautious to ensure everyone’s safety.”

MVP sites started re-opening in August and will continue to open gradually over the next several months.

GENETICS EXPLAINED

WHY IS IT IMPORTANT TO STUDY GENES? “Genes are tiny molecules found in our cells that are made up of DNA and act as the blueprint for making proteins,” Philip Tsao, Ph.D., Co-Principal Investigator for MVP, tells us. Proteins regulate and build many of the biological pieces and processes that keep our bodies functioning. There are variations, or differences, within every individual’s DNA that impact how proteins are made. For example, DNA variations can result in differences in height or hair color. They can also impact proteins that affect important biological functions essential to health.

Tsao cites insulin as an example of how these processes affect health. If a particular protein is important for producing insulin on a daily basis, it needs to work well all the time. If the protein is unable to do its job, it can increase a person’s likelihood of developing diabetes.

Scientists now know it’s rare for a single DNA or protein variation to cause an illness or disease. Rather,

common diseases are likely due to the combined effects of one or more variations in many different parts of DNA that create proteins.

“To identify these subtle effects,” Tsao continues, “you need lots and lots of data from many individuals.” MVP researchers concentrate on health issues related to Veterans, including heart disease, diabetes, PTSD, and anxiety. They also look



at Veterans’ histories, such as the combat deployment, possible environmental exposures, as well as their post-deployment lives.

Participating in research projects like MVP is another important contribution Veterans make to their country, and scientists and all MVP staff thank them.

MVP Data is Helping Veterans Live Healthier Lives

Improving Health through Lifestyle Change

“Veterans’ diet and fitness levels are not very different from other Americans,” explains Luc Djousse, M.D., M.P.H., Sc.D., an MVP Investigator. “Less than 1% of both groups follow the healthy eating recommendations and few meet the guidelines for fitness activity. There’s a lot of work to be done.”

“The good news is there are a variety of ways to follow a healthy diet, lose weight, and create healthy habits,” continues Djousse. “You have to pick one that fits your habits to follow over the long run.”

MVP researchers recommend cutting down on fried foods, reducing salt intake, and avoiding processed options. “We’re not trying to radically change Veterans’ diets,” says J. Michael Gaziano, M.D., M.P.H., Principal Investigator for the MVP program and a VA cardiologist. “We’re trying to impart some relatively simple rules.”

To increase physical activity, Gaziano suggests daily aerobic exercise; strength training, flexibility, and balance training two days a week; and other physical activities throughout the day.

“Figure out where you are when you start,” Gaziano recommends, “and build on that slowly and steadily.”

Gulf War Illness and Genetics

Between 2018-19, surveys were sent to 110,000 MVP partners who served during 1990-91. “We hope to identify some of the genomic underpinnings of Gulf War Illness,” explains Drew Helmer, M.D., M.S., Deputy Director for VA’s Center for Innovations in Quality, Effectiveness, and Safety. The team is also looking at environmental interactions, such as pesticides and other chemicals, that may interplay with Veterans’ genetics to influence illness. “We very much value the contributions of Veterans to our study,” Helmer concludes. “We want our findings to have a positive impact on their lives.”

New Pilot Projects:

MVP is exploring the ability to provide genetic information back to MVP partners by piloting two small research projects. Based on the results of this research, MVP may expand this work to more MVP partners.

Preventing Heart Disease Through Genetic Research

Eligible MVP partners are being invited to participate in MVP-ROAR (Return of Actionable Results) for heart disease. “MVP-ROAR is the first step in honoring the gift MVP partners have given us by reaching out to those who may have a medically important condition and providing them information

responsibly,” says Jason Vassy, M.D., M.P.H., a Primary Care Physician with the VA Boston Healthcare System. Participants are clinically tested for a genetic variant that increases their risk for heart disease. Once the results are received, genetic counselor Morgan Danowski, M.S., C.G.C., helps Veterans understand their results and encourages them to share the information with their relatives and healthcare providers.

Moving Medicine Forward – Prostate Cancer

Eligible MVP partners are being invited to participate in a project exploring a genetic risk factor for metastatic prostate cancer. “Genetics is more involved with metastatic prostate cancer than we had thought,” explains Bruce Montgomery, M.D., Medical Oncologist with the VA Puget Sound Health Care System and the University of Washington. Participants are clinically tested to confirm that they do have the genetic variant, and, if so, work with their physician to improve care. Participants receive genetic counseling and may also receive genetic counseling and testing for their relatives. “It’s a special benefit of participating in the MVP program,” Montgomery concludes, “and it’s a great example of how MVP can move the field of medicine forward.”

For more information on these projects, please visit us online at mvp.va.gov

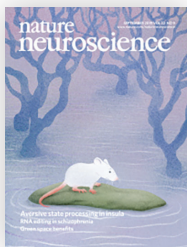
RECENTLY PUBLISHED MVP RESEARCH

MVP IS USING DATA FROM 825,000 PARTNERS in various genomic and epidemiological research projects to learn about and help improve Veterans' health.

"The contributions of MVP partners have led to many new discoveries that have really furthered our understanding of the possible mechanisms of diseases that impact Veterans. These discoveries are helping us identify new and better ways to prevent major diseases and treat them in our Veterans," explains Christopher O'Donnell, M.D., M.P.H., who, along with J. Michael Gaziano, M.D., M.P.H. and Philip Tsao, Ph.D., serves as a Co-Principal Investigator for MVP.

"Just by participating in MVP," O'Donnell concluded, "Veterans are making essential contributions to COVID-19 understanding and research. Stay tuned!"

Here are some recently published MVP articles:



Strong genetic component to PTSD found

Strong genetic component to PTSD found – From over

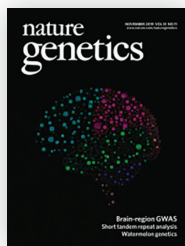
160,000 MVP Partners, researchers confirmed that the risk of reexperiencing post traumatic stress disorder (PTSD) symptoms after a traumatic event is inherited. They identified eight regions in the human genetic code that zero in on a number of genes that may help us understand the causes and treatments for PTSD. The research is described in the September 2019 issue of *Nature Neuroscience*.



New genetic variants linked to type 2 diabetes

From more than 200,000 MVP Partners, VA

researchers were able to find hundreds of genetic variants that had never before been linked to type 2 (adult onset) diabetes, a condition that affects many Veterans. The researchers also identified alterations in genes for diabetes that vary by ethnicity, as well as variants related to conditions like coronary heart disease and chronic kidney disease. The research is described in the July 2020 issue of *Nature Genetics*.



New genomic regions linked to common vascular disorder

Venous thromboembolism

(VTE) is a common but dangerous disorder involving blood clots that start in a vein and can travel

through the circulatory system until they reach the lungs. From more than 650,000 participants, researchers found 33 locations in the genome that may play a role in the disease, 22 of those locations were not previously known. The team also developed a genetic score that may be used to identify patients at highest risk. The research is described in the November 2019 edition of *Nature Genetics*.



Anxiety and Depression

Researchers have identified six alterations in genes linked to anxiety. Some

had previously been identified as risk factors for other psychiatric disorders, including bipolar disorder, post traumatic stress disorder (PTSD), and schizophrenia. Five were found in Americans of European descent and one was found in Americans of African descent. The research is described in the March 2020 edition of the *American Journal of Psychiatry*.



Million Veteran Program

Department of Veterans Affairs
Million Veteran Program
PO Box 6378
Chicago, IL 60680-9919

PRSR STD
U.S. POSTAGE
PAID
CONYERS, GA
PERMIT NO. 18

Visit us online at mvp.va.gov!



MVP Insider

A newsletter for Million Veteran Program partners

GO GREEN! Contact the MVP Info Center and let them know you want to “go green.” Give them your email address to receive newsletters and other MVP information electronically.

HAVE QUESTIONS, suggestions, or would like to request MVP materials for distribution? Please contact us at askmvp@va.gov or toll-free at 866-441-6075 (M-F, 8a-6p ET).