

**Sara Vetter:** “I have some obligatory notes to say from the U.S. government:

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“Welcome Dan.”

[applause]

**Dan Evans:** “Oh, God, I love disclaimers. [laughter] All right. Good evening, everyone. Thank you for the introduction. I'm Dan. I am a genomic epidemiologist in the Minnesota Public Health Lab. I use whole genome sequencing technology, which is the successor to Steph's PFGE, to identify and track novel outbreaks of infectious diseases that spread in Minnesota. You can probably tell by now as well, I'm also in the Army. I'm first lieutenant Daniel Evans. I am an environmental science officer in the United States Army Reserve. I'm assigned to an organization called the Defense Centers for Public Health to support their mission to use molecular biology as a tool to prevent the spread of diseases among Americans service members. But if tonight is dedicated to public health in Minnesota, then why am I here, in uniform, talking about my military service? There's a few good reasons.

“First, the U.S. military has been in the business of public health for far longer than our state governments, if that. Throughout the history of our country, diseases and non-battle injuries have caused more casualties among our service members, than have bullets and bombs and bayonets. Ever since the War of Independence, we have been engaged in a practice now known as Force Health Protection, which is the prevention and control of these DMBI's. Military loves its acronyms. [laughter] Many of the most foundational steps taken towards the modern practice of public health took place in whole or in part because of the U.S. military. One famous example of this was our immunization of the Continental Army against smallpox in the 1770s. This was our country's first mass public health disease surveillance initiative. Many of the most famous and successful public health labs and programs in infectious disease also have their roots in military funded programs. In field hygiene and sanitation, entomology, and biodefense. Even the CDC, the most prolific public health agency in the world, one voice here, has its roots in the military. It was started in 1942 as the Office of National Defense Malaria Control Activities.

“Second, the military continues to be a key contributor to public health today, both overseas and at home. It's not just defense funded labs and programs who collaborate with civilian agencies to perform pathogen surveillance, develop and test novel vaccines and therapeutics, and perform translational research. All across the world, uniformed service personnel, including reservists, are working with civilians and allies in other countries to strengthen their public health infrastructure and help them prepare for and respond to, deadly outbreaks. One great example of this was our support of the international response to the Ebola epidemic in West Africa in 2014. We mobilized thousands of service members to that area to build hospitals, provide medical care, transport supplies and train the local populace and how to handle or not handle Ebola patients. And during the COVID pandemic, the National Guard mobilized thousands of reservists, citizen soldiers and citizen airmen to backfill overwhelmed health care facilities, run COVID testing and vaccination sites, and to provide infection control support.

Military operational public health both directly supports our state in times of need, and works in the background to prevent the spread of diseases that could make it to Minnesota. And I'm reminded of this every day when I report to work, because right next door to the Public Health lab building is an armory for the Minnesota Army National Guard.

"It's also important to note that Force Health Protection is not limited only to specialized labs and facilities and medical units in response forces. Those entities certainly exist, and they play critical roles. But in U.S. military doctrine, every unit commander in every branch has the ultimate responsibility to protect the health and welfare of the service members under their command. This is a huge responsibility because the threats to those formations can range from, obviously, enemy attacks to food borne and water borne illnesses, heat and cold injuries, and even poor mental health. To address these many challenges, commanders rely on subject matter experts from a wide variety of fields, including those who work in public health, like me. Before I was assigned to the DCPH, I spent three years in an infantry brigade in the Army National Guard, and I did all kinds of public health stuff there. I responded to outbreaks of COVID, I trained soldiers in field sanitation, I inspected barracks and dining facilities to assess hygiene risks, and I also trained our combat medics in good infection control practices to follow when putting our hands on service members. And in case you're wondering, yes, the infantry comes up with some thoroughly innovative ways to find themselves needing medical care. [laughter]

"So while the COVIDepi- sorry - the COVID pandemic and the Ebola epidemic highlight some of the high profile work that the Department of Defense does in public health, it's also important to highlight and celebrate those of us who work in the background to keep service members and, by extension, their families and friends, healthy and free of disease. These labs, programs and personnel collectively give the Department of Defense one of the largest and most widespread and most impactful public health footprints of any organization in the world.

"Third, there are many reservists and veterans who work in the Minnesota state government, including in the health department, like I do. These folks have extensive experience from living and working in a culture of rigorous standards and steep consequences for making mistakes. Even though I only serve part time, I need to complete all the same key foundational standards as those who serve full time. I need to pass the same physical fitness test, I need to keep my weight and body fat within regulations, I need to qualify at the rifle range with my assigned weapon, I need to wear all the same uniforms correctly, and I also need to complete all the same key leadership training courses. This leadership course component is really important, at least in the Army, for nearly every promotion and rank. Every soldier who leads or commands other soldiers must complete an increasingly lengthy and rigorous training course in leadership to qualify for that next promotion. This is true from corporals and sergeants, who lead only a few soldiers all the way up to generals who command thousands. I personally needed to spend four months training at two different military bases in order to be considered a minimally qualified, basically trained Medical Service Corps officer. And my path into the Army is one of the shortest and most direct that there is. Think about the civilian world for a second. Can you imagine if all of our bosses and employers, from all of our different disciplines we use were held to the same standard of training and retraining and leadership? Think about it.

"My point is the reservists and veterans who work in the state government have extensive experience and unique perspectives that strengthen the health and welfare of our state. And that's not just about shooting rifles or running around in the desert with heavy backpacks on, or calling in air support or other

things that people consider to be the military. It's also about leading and counseling subordinates working within a chain of command, making and modifying robust plans, figuring out a good alternative when that plan goes wrong, getting things done quickly, and efficiently, and right the first time, committing yourself to difficult decisions, and ultimately making the most of a rough situation. The job of our military is to win our wars and to protect our borders. It does this by building leaders. And those leadership skills imbued into every service member are a huge help to our state government when they are employed, regardless of where in the org chart they may fall.

“But these benefits often come at a cost. Reservists, veterans, service members, active duty, past, present, future; face numerous challenges linked to our ongoing service. We have huge problems linked to not just mobilizing for military service, but also demobilizing for military service. I can personally speak to many times when I've been on active duty orders, and I have been demobilized back to the civilian world without salutes and formations and mass casualty simulations, and felt mental stress and culture shock. Veterans and service members face many unique challenges from this, and as a result, we are much more likely than our civilian counterparts to struggle with our mental health, to get divorced, and to suffer from debilitating conditions linked to our employment. These are ongoing challenges that the military and the VA systems are trying to address. At the end of the day, we rely not just on our families and friends, but also from our civilian colleagues and our employers for support. And I'm happy to say I've received that support from MDH. Looking right at the boss. [laughter]

“Ultimately, reservists live and work in two different worlds, so we retain two different points of view. My active duty counterparts at the Defense Centers for Public Health rely on me to offer them a perspective from the civilian public health world as they try to navigate many of the same challenges, in method development and implementation in science and molecular biology, that is done in state public health labs. And speaking of my colleagues in public health, I know at least a few of them have picked up a couple letters of the NATO phonetic alphabet after talking to them. [laughter]

“In a world full of viruses and variants, in a world where many infectious diseases are just biding their time to create the next epidemic. The exchange of ideas between military Force Health Protection and the civilian public health world is more important than ever. We need to actively build and strengthen these bridges, not just by collaborating at the organizational level, but by listening to and learning from those of us who have experience and perspective in both. Reservists play a key role in building these bridges. But trust me, if you ever need a bridge to be destroyed... [image of explosion on screen] We can help you with that too. [laughter]

“Thank you very much.”

[applause]

**Sara Vetter:** “Thank you. Dan. Let’s give all of our speakers one big round of applause!

[applause]

“Thank you all again for coming tonight. I'd also like to thank our outreach team: Egezharya, go ahead and give us a wave, oh there you are right there. Ashley at the back, and Marie, who's running our AV system tonight. Let's give them a round of applause.

[applause]

“And I’d also like to thank the Bell Museum staff for their time this evening, and just for the Bell Museum for this beautiful space tonight. You’ve heard from six amazing people. But keep in mind, there’s over 2000 people that work at the health department, and every person has a story. If you’re interested in hearing more stories, I encourage you to check out our website. If you Google ‘MDH Lab COVID-19 Stories’, you’ll find stories of some of our lab staff’s experiences through the COVID pandemic and what it was like to serve public health during that time. Our program is ending, but we invite you to stay. If you have questions for our speakers or just want to chat with them, please head to the launch pad, which is just outside this auditorium, to chat with your speakers and to chat with each other.

“Thank you everybody and have a good night.”

[applause]