My lab studies immunology, autoimmunity, and vaccines for influenza and tuberculosis. Unfortunately, my Stanford lab and all nonessential Stanford labs have been shut down today. Plans for a member of my lab to fly to South Africa to process samples for a Gates Foundation TB vaccine study next month were also cancelled.

I apologize for the length, but please read it carefully.

Many of you are compulsively following guidance from Tony Fauci at NIH, local government, and CDC, and should be commended. But many are not following guidelines and are placing the broader Bay area community, and communities all around the country, at great risk. The COVID pandemic should be taken much more seriously than I have been observing in the last 24 hours – at the local grocery store or deli, on the streets, at the neighborhood ball field and playground, at the gas pump, in social media posts, and across the country in general. This virus is far more contagious than people realize, and far more dangerous. Young people in particular need to lead this effort to change behavior, both by using social media and by changing their social behavior. Older adults also have to take this seriously.

The most compelling new data was published March 16 in Science magazine. It is now very clear that a majority of viral transmission is occurring from asymptomatic young people who propagate the infection and then infect people who are at greater risk. These groups include the elderly; people who are immunocompromised (eg, are being treated for cancer or autoimmunity); and people with preexisting conditions like diabetes, heart disease or lung diseases like emphysema and asthma. In Wuhan, it is estimated that 30% or more of young people were infected and spreading the virus despite feeling well. This coronavirus is behaving differently than the ones that caused SARS and MERS. Those viruses pretty much only infected others if the infected person had symptoms. The World Health Organization is also considering recommending more rigorous respiratory precautions for healthcare workers. This is not just a “cold” or the “flu”. And our shelter in place order is not a drill.

Please share this email with anyone you like. Our best hope to end this pandemic as quickly as possible, and with as little impact as possible, is for the whole country (not just our 6 Bay area counties) to shelter in place. Because of the exponential spread, a delay of even one day could lead to an increase in cases of 40% when this infection peaks weeks or months from now. California Governor Newsome just announced the National Guard has been placed on
alert, so the next step is a full lockdown. I personally don’t want to see the National Guard on the streets of my neighborhood.

Is it time to panic? Absolutely not. Is it time to 100% shelter in place and mobilize local emergency response networks - Absolutely.

To all Citizens:
- If you have symptoms, rigorously self-isolate for 14 days - or longer if guidance from public health officials changes.
- If you have symptoms and have been tested and are negative – for now still assume you are positive. There are many reports of people here in our county who initially tested negative, assumed they were negative, then converted to positive later when their viral load increased. By then, they had potentially infected others in the interim. Especially young people. Donovan Mitchell of the Utah Jazz was infected over a week ago, tested positive, yet reported on social media yesterday he feels absolutely normal and has never had symptoms. Kevin Durant and 4 other Nets tested positive today.
- If you learn you have been or may have been exposed – self isolate and discuss with your healthcare provider for next steps.
- Bottom line, if you have symptoms regardless of testing results – enter strict quarantine until you have guidance from your healthcare team.

To Elderly, Immunocompromised, and Citizens with Other Risk Factors:
- Don’t leave your house. Shelter in place.
- Walking outside is fine but maintain strict distancing at all times.
- Don’t have your visiting kids or grandkids or frankly anyone enter your house unless it is absolutely necessary – a well-meaning, healthy teenager coming in to visit who is not aggressively self-isolating is a great way to infect those who are at risk.
- If you have kids or grandkids living with you, and they are also being strictly isolated – enjoy the family time! But don’t let other kids into the house...
- People should leave you food and supplies once or twice a week, knock on your door, and say hello from more than 6 feet away. Then leave until the next drop off.
• If you absolutely have to leave your home for doctor’s appointments or important therapies (e.g. chemotherapy, but not elective visits or PT), wipe down door handles or anything the public touches, wash your hands regularly, and don’t touch your eyes, nose or mouth at all.
• Based on what we know today, if you don’t have the virus, and you do these things, then there is essentially no way to get infected and you’ll ride this out just fine.

To Parents of Kids Under the Age of 18:
• Shelter in place.
• Do not let your kids interact with other kids outside your immediate household. There were kids playing in large groups on our community field today. Stop!
• Play dates are not OK. As one neighbor posted on line – “This is not a snow day!”.
• Please, please, please do not take your kids to local deli or grocery store or any other public place. Keep them in the house or the back yard or playing on the street (without playing with other kids outside the household). They are much more likely to have no symptoms but are still able to spread to others. Decreasing the density of people in stores like delis and supermarkets reduces everyone’s risk, including the workers there.
• Designate one healthy adult to shop with a targeted shopping list. Get in and out quickly. Distance yourself from other shoppers by 6 feet or more. Use wipes for touching surfaces. Wash your hands after. And don’t panic buy – yesterday at my local grocery store was terrible. The staff there did a phenomenal job under trying circumstances. It is unfair to place them at such risk. I drove by another grocery store tonight and the parking lot was largely empty. Shop when few people are around.

To Pet Owners:
• If you take your pet for a walk, maintain social distancing with other pets and with other walkers.
• This virus is thought to have come from bats. Because we know so little about it, we don’t yet know if pets can also become infected and serve as asymptomatic shedders.
• Current guidance from scientists is to not allow others to touch your pets until more is known about the virus. This will likely take several months to understand better.

To Young Adults:
• You are by far the most socially active, and thus at greatest risk of infecting others.
• You are also uniquely positioned to make the greatest impact on stopping the pandemic.
• Before you disregard any or all of the advice in this posting, think about your parents, grandparents, and other family and friends who are at high risk of getting really sick and potentially dying if you infect them. It is true that you are much less likely to die or to even be sick. That is comforting. But is hanging out with your friends in person more important than infecting vulnerable people? Your neighbors and their families? Your own family and friends?
• It is your responsibility as an adult to try to help your community, and to change your behavior to break the chain of infections.
• Instead of interacting with each other in person, think about ways you can use social media to get other millennials to shelter in place voluntarily – even in places around the country that are not yet in lockdown.
• Finally, think about ways you can help those who are elderly, have preexisting conditions, or are immunocompromised here in your neighborhood. They can’t leave their houses for at least 3 weeks, and possibly longer:
  ◦ Help organize other millennials to get them groceries, medications or other supplies each week - leave them at the front door.
  ◦ Bake them something.
  ◦ Call or face time them regularly to decrease their sense of isolation.
  ◦ If they are outside walking (which is allowed now but could be stopped if we go from shelter in place to a full lockdown), stop and talk to them for a while (at a safe distance).

The bottom line here is that ALL of us have to change our behavior right now. **Based on Wuhan and Italy, the wave of infections will continue to rise even if we**
make all these changes TODAY. We will not peak for weeks to months. The length of time before we peak in the Bay area, and the height of the peak, depend largely on whether we change behavior, and how quickly. We need to learn from Wuhan, Singapore, and Hong Kong. And from Italy and France where healthcare workers are overwhelmed.

The only thing that should “go viral” right now is social media imploring people to take this pandemic seriously and follow the advice in this posting. Below I share advice sent to me by a Stanford Faculty member earlier this week (I have found this on the web in Urban Wellness Magazine):

Try this perspective shift. Instead of seeing “social distancing“ and travel bans as panic, try seeing them as acts of mass cooperation intended to protect the collective whole. This plan is not about individuals going into hiding. It’s a global deep breath...an agreement between humans around the planet to be still. Be still, in hopes that the biggest wave can pass without engulfing too many of the vulnerable amongst us.

Dr. Lindsay Jernigan