10th Grade Interdisciplinary Continuous Learning Assignment

Purpose:

To reflect critically on your experience living through the historical event of the COVID-19 pandemic integrating skills and ideas that you have learned in your core classes this school year, creativity, the 10 elements, and the core values of SFIS and your home communities,

This is a REQUIRED assignment for all SFIS students in tenth grade.

Format:

You will submit a 600-800 word document (that's five or more well-developed paragraphs) answering the guiding question every week to your Homeroom teacher. You can submit your writing through email, google classroom, text or email a photograph of something you wrote by hand, mail it to your teacher, or even call your teacher and read it to them if you don't have access to a smart phone or computer. Get creative about submission. **Communicate with your homeroom teacher.** While this is a required assignment, we can be flexible with working with you on how it gets turned in.(You may suggest an alternate form of expressing the required words, through poetry, film, etc...please communicate these ideas through your Homeroom teacher before making this decision.)

You are welcome to use any resources you can access safely (internet, newspapers, television, books, talking with other people - make sure to use good citations!) but you are not required to use any one resource.

You are welcome to ask your family members for more information if you need help. If you decide to discuss these questions with family members, DO NOT go talk to someone you don't see every day. This is an opportunity to call a family member you haven't seen in a while, but for the safety of your family and your community, please follow your community's request to stay home.

*Students with Disabilities will work with the resource teacher to make any required or necessary modifications to the assignments.

Core Values: **Student Focus, Tradition and Culture, Caring, Respect, Giving back, Perseverance , Integrity and Accountability, Concern for the Environment, Humility, Faith, Acceptance**

Ten Elements: **Art, Education, Governance, Environment, Law & Jurisprudence, Language, Family, Health, Community & Economic Development, Culture & Resources**

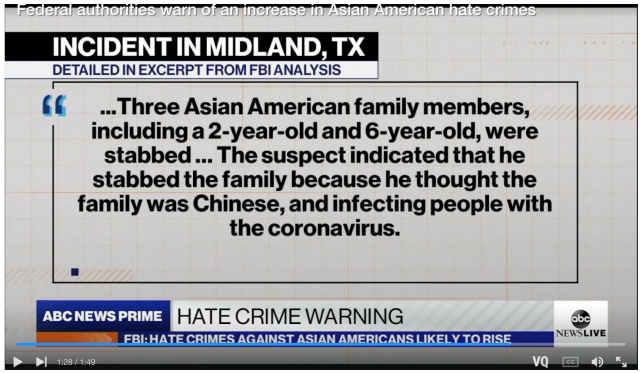
Week 1	
Question: Why is it of vital importance for teens everywhere to continue to engage their brains during this time of social isolation—doing things like solving math problems, reading books, writing in journals, and deepening tribal language skills? Read this short article on adolescent neuroplasticity to inform your answer . https://www.edutopia.org/article/teenage-brain-is-wired-to-learn-donna-wilson-marcus-conyers The article is included at the end of this packet for those without internet access. Vocabulary: **metacognitive:** thinking about the way you learn **Here are some sub questions to help guide you in your response. You don't need to answer all of these questions:** ● What is neuroplasticity? ● Are you in the age group of 'extraordinary neuroplasticity'? What age group is that? ● Why is it important that your age group continues to learn right now, despite not being in a physical school? ● If other communities of students are doing schoolwork right now, and your community of students is not, how might this affect your future? ● What are some strategies you might use to get through these five questions and move forward a grade? ● Studies show that learning a language increases the volume and density of the brain's gray matter and connectivity. What is your Native language, is it practiced, and are you speaking it at home right now? ● Assume today's present conditions change: what would you like to be doing five years from now? What plans do you have to make that a reality? ● Create a daily schedule for yourself for these last weeks of this school year. At what times each day will you fulfill your household responsibilities? At what time each day will you do your school work? Will you exercise each day? If so, when? How much time each day will you spend on your cell phone? Think of your schedule as a tool that you gift yourself.	**Due Date: April 27**

Week 2	
Question: In what ways does the current situation reflect a need in your community to return to traditional practices and ways of life? Interview some elders (in your household or via phone) in your community to learn about how things were when they were growing up compared to now. Following are some questions you may consider asking but you can certainly ask others: ● In what ways did your community get the food that it needed? How has your community's relationship with food changed in their lifetime? ● What were the typical foods in your community? What would the meals of one day consist of? ● How did your community make sure that all had access to food and necessities? How has that changed in their lifetime? ● When someone fell ill, how did your community help them recover? How has this changed in their lifetimes? ● If everyone was practicing a more traditional way of life, would your community be better prepared to deal with the current situation? How? ● What role do artistic practices have in your community? (Jewelry, Painting, Typical clothing, Clothing design, Ceramics, Sculpture). Are these changing? In what ways? ● Describe the governmental structural organization of your community or village. Has this changed over time? ● Pick 3 of the core values/elements that connect to the ideas discussed above. Make sure you explain the specific connections between the values and the practices of a traditional based life. Resource: Core values & Ten elements located at the beginning of the assignment	**Due Date: May 4**

Week 3	
Question: What is the coronavirus pandemic teaching us about changes we need to make in our relationship to Earth, its animals and ecosystems? Read the short science article- “Tip of the Iceberg” to inform your answer. Article is included at the end of this packet for those without internet access. https://www.theguardian.com/environment/2020/mar/18/tip-of-the-iceberg-is-our-destruction-of-nature-responsible-for-covid-19-aoe Vocabulary: **pathogen:** a bacterium, virus, or other microorganism that can cause disease. **zoonotic disease:** a pathogen that crosses from animals to humans **Here are some sub questions to help guide you in your response. You don’t need to answer all of these questions:** ● How is habitat loss a factor in zoonotic disease? ● How might eating/butchering certain wild animals contribute to new, dangerous pathogens? ● From your perspective, what is the spiritual aspect of humans damaging animals and ecosystems? ● Does the mainstream world respect animals and ecosystems enough? Do your spiritual beliefs show a better way? ● What should be done to reduce the risk of pandemics in the future? ● Which life is preferable— a life in the city, the village or the country? Explain your view.	**Due Date: May 11**

Week 4	
2020 to 1918: A 100 Year Difference- What Has Changed? - Comparing the 1918 Influenza Pandemic to COVID-19. DIRECTIONS: Read the following article and answer each prompt in 1-2 paragraphs of 200 - 250 words each.These questions will ask you to make connections between the response to the influenza pandemic in 1918 and today's response to COVID-19. If you don't have the article or cannot access it on the internet, do your best to think through the questions on your own, or you can call your homeroom teacher and make plans to have them read the article with you. **"The 1918 Influenza Pandemic and COVID-19" - PBS** **https://www.pbs.org/wgbh/americanexperience/features/1918-influenza-pandemic-and-covid-19/** **(article is included in mailed packet)** 1. **RESTRICTION & LAW ENFORCEMENT:** This article showcases some of the restrictions enacted during the 1918 influenza pandemic. It also discusses the role that law enforcement played in enforcing the laws of restriction. ***What restrictions have you seen placed upon your community, or the state, in response to COVID-19? What role do your local police play in enforcing those restrictions? Do you think these restrictions are helping to prevent the spread of COVID-19? Why or why not?*** 2. **STIGMATIZATION:** The articles discussed how certain groups of immigrants were stigmatized, or targeted, during the influenza pandemic of 1918. Consider the images and information below. Take this week to pay attention to comments made on the news, social media, or the people around you. ***Are you noticing any biased comments towards Asian-Americans? Why do you think stories like the one below are occurring in our country?*** Federal hate crime laws have been in place since 1968. Think about the anti-bullying frameworks you created in your homeroom at school. Imagine what a bully-free environment would look like at school. ***What can we do as a society to prevent hate crimes from occurring that are particularly related to COVID-19? What could we do from our homes to spread peace and acceptance using the resources we have?*** You might consider social media, discussion with family members, art...etc.	**Due Date: May 18**

The following information was published on March 27, 2020.



> "Some FBI officials are concerned that some Americans are associating the COVID virus simply with being Asian. The fear here is that there will be a surge in incidents of bias and hate against Asian-Americans here in the U.S.." - Pierre Thomas, *ABC News Correspondent*

Source:https://news.yahoo.com/federal-authorities-warn-increase-asian-004749098.html?soc_src=community&soc_trk=fb (You are welcome to watch the video if you'd like. It is not required.)

3. **CHANGES:** The last paragraph of the article states:

   "The 1918 influenza pandemic was a pandemic in every sense of the word – global and affecting all people, from poor factory workers to world leaders like President Wilson. However, for all of the horrors that the 1918 influenza pandemic brought with it, the outbreak eventually came to an end and brought opportunities to learn and prepare for future pandemics."

   Many people are wondering at this time- *Will we ever go back to "normal" life?* What do you think? ***What parts of "normal life" will we be able to go back to, once COVID-19 is properly addressed? Are there any ways that you think our lives will change? Are there any changes you think your community should make? Are there any changes you think our government should make? Are there any changes you personally will make after COVID-19 has been addressed?***

Week 5	
Former SFIS superintendent Joseph Abeyta recounted that his father once explained how a Navajo rug is meticulously woven one row at a time. Mr. Abeyta used the image of a rug as a metaphor: > "As a human being - as an individual - at a particular point in time, our role is to make the most beautiful one line contribution to that rug. There is such a responsibility that you've got in making that one line, because it's a transition from all the work that has preceded you to the future. If you don't do a good job in putting that one line into that rug, it flaws what's gone behind you, and it skews what's coming up in the future. So the challenge for every one of us is to do our very, very best during that period of time that we've got to add to this fabric." > -- Santa Fe Indian School: Our Home Think of yourself as being responsible for "one line" in the overall pattern of the "rug." **Question**: How will **you**, at this particular time, contribute to the metaphorical rug? Address this question in a cohesive essay of at least 600 words, taking into account at least one of the following: 1. Your household and family: How will you contribute to your household at this particular time? 2. Your community: How will you contribute to your community at this particular time? 3. The world: How might you contribute to the world now or in the future? Consider the SFIS Core Values (Student Focus, Tradition and Culture, Caring, Respect, Giving Back, Perseverance, Integrity and Accountability, Concern for the Environment, Humility, Faith, Acceptance). Will any of these values guide you in your contribution? If so, which? Explain. What knowledge of your past will you use as you work on weaving your line, and how do you hope to connect the past to the future? How is your work going to enable the fabric of the rug to remain strong into the future? What knowledge do you have - or do you want - that will enable you to complete your line? (Would you make use of or need any skills you have learned in Math, Science, Social Studies or English? If so, explain.)	**Due Date: May 25**

Reading for Week 1

The Teenage Brain Is Wired to Learn

Thanks to the wonders of neuroplasticity, adolescents are primed to improve their performance in school—and beyond. Here's how to help your developing brain.

By Donna Wilson and Marcus Conyers, November 8, 2016

Adolescence is an exciting time as teenagers become increasingly independent, begin to look forward to their lives beyond high school, and undergo many physical, emotional, and cognitive changes. In that last category, teenagers can learn to take charge of their developing brains and steer their thinking in positive and productive directions toward future college and career success.

The brain's prefrontal cortex, which functions as the control center for executive functions such as planning, goal setting, decision making, and problem solving, undergoes significant changes during the teenage years. In an NPR interview, Laurence Steinberg, author of *Age of Opportunity: Lessons From the New Science of Adolescence*, notes that **ages 12 to 25 are a period of extraordinary neuroplasticity.** "Science suggests that **it's important for kids to be challenged** and exposed to novelty in order to facilitate healthy development of brain systems that are important for things like self-regulation," Steinberg says.

The potential that comes from neuroplasticity—the capacity to change the structure and function of the brain through learning—provides the foundation for two crucial messages for middle and high school students:

1. **They have the capacity to become functionally smarter with practice**. By their early teens, many youths have already formed an image of themselves as intellectually capable—or not. It's important to emphasize for students in the latter group that past school performance need not be a predictor of future outcomes, if they are willing to persist in the hard work that may be required when learning gets challenging.

2. Success in school is largely determined by the learning strategies students employ, and not by some innate talent for academics. Students across the continuum of current performance can learn and improve effective problem-solving and study skills to nudge their grades in a positive direction.

TOOLS FOR SELF-DIRECTED LEARNING

As they progress through middle and high school, students are expected to take on increasing responsibility for their learning, with more out-of-class assignments that require independent research, reading for understanding, and wider application of classroom lessons.

Don't just read—learn. There can be a huge difference between reading the words on the page and learning from them. To think through the ideas in a reading assignment and improve recall of what they have read, students might benefit from:

- Creating diagrams, pictures, and symbols to represent key ideas as they take notes
- Summarizing passages in their own words (some students might enjoy the challenge of capturing the essence of an assignment in a tweet); and
- Searching for cues about the most important content. For textbook assignments, students can go back and review features like key terms, subtitles, and informational graphics after their first reading to reinforce crucial facts. When reading fiction or poetry, identifying literary devices such as metaphors and symbols can help uncover deeper meaning.

Consider the source. Like the reading strategies included here, a careful consideration of the credibility of sources, especially online ones, that students consult and cite in their research projects is a learning strategy that will serve them well throughout their lives. Is the information presented fact or opinion? Is the objective of this resource to inform, to influence, or to entertain? Are the authors and/or the sources cited reputable and qualified to discuss this topic? Making these kinds of judgments is a crucial executive function for students to develop. In his book *The Adolescent Brain: Reaching for Autonomy*, Robert Sylwester identifies this careful approach to vetting information sources as one of the "intuitive, logical, and predictive capabilities that will enhance the resolution of . . . emerging vocational challenges."

Create, then edit. Two common problems in academic writing are getting stalled out early on in writing the introduction and failing to edit the first draft carefully. Guide students to begin productively by putting in writing the information they want to convey without worrying about how they will word the first paragraph. That task will be much easier once they have laid out all the content they have gathered. And remind them to allow time to edit their papers not once, but twice, before turning them in.

Make a schedule—and stick to it. Planning and organizing are versatile executive functions that students will use in every subject and in their personal lives as well. For independent study projects, guide your students to develop a step-by-step process, to set dates to complete each step, and to build in extra time for unexpected issues, such as the need to conduct another round of research.

Read ahead to stay ahead. Encourage students to finish every reading assignment by reading a few pages ahead. This strategy can help improve understanding and recall by showing students how the information presented in one chapter is applied and expanded on in the next.

Become **metacognitive** about which study skills work best for you. Students will likely find that some of these strategies are more effective for them than others. Encourage them to try different strategies and to assess which ones get the best results for them. Some students may learn better in study groups, some by creating elaborate graphics to explore and connect the concepts they are studying, and some by reading and explaining the content aloud to themselves, to give just a few examples.

Reading for Week 3

'Tip of the iceberg': is our destruction of nature responsible for Covid-19?

As habitat and biodiversity loss increase globally, the coronavirus outbreak may be just the beginning of mass pandemics

John Vidal, The Guardian, Wed 18 Mar 2020

The African village of Mayibout 2 is not a healthy place. The 150 or so people who live in the village, which sits on the south bank of the Ivindo River, deep in the great Minkebe Forest in northern Gabon, are used to occasional bouts of diseases such as malaria, dengue, yellow fever and sleeping sickness. Mostly they shrug them off.

But in January 1996, Ebola, a deadly virus then barely known to humans, unexpectedly spilled out of the forest in a wave of small epidemics. The disease killed 21 of 37 villagers who were reported to have been infected, including a number who had carried, skinned, chopped or eaten a chimpanzee from the nearby forest.

I travelled to Mayibout 2 in 2004 to investigate why deadly diseases new to humans were emerging from biodiversity "hotspots" such as tropical rainforests and bushmeat markets in African and Asian cities.

It took a day by canoe and then many hours along degraded forest logging roads, passing Baka villages and a small goldmine, to reach the village. There, I found traumatised people still fearful that the deadly virus, which kills up to 90% of the people it infects, would return.

Villagers told me how children had gone into the forest with dogs that had killed the chimp. They said that everyone who cooked or ate it got a terrible fever within a few hours. Some died immediately, while others were taken down the river to hospital. A few, like Nesto Bematsick, recovered. "We used to love the forest, now we fear it," he told me. Many of Bematsick's family members died.

Only a decade or two ago it was widely thought that tropical forests and intact natural environments teeming with exotic wildlife threatened humans by harboring the viruses and pathogens that lead to new diseases in humans such as Ebola, HIV and dengue.

But a number of researchers today think that it is actually **humanity's destruction of biodiversity** that creates the conditions for new viruses and diseases such as Covid-19, the viral disease that emerged in China in December 2019, to arise – with profound health

and economic impacts in rich and poor countries alike. In fact, a new discipline, planetary health, is emerging that focuses on the increasingly visible connections between the wellbeing of humans, other living things and entire ecosystems.

Is it possible, then, that it was human activity, such as road building, mining, hunting and logging, that triggered the Ebola epidemics in Mayibout 2 and elsewhere in the 1990s and that is unleashing new terrors today?

“We invade tropical forests and other wild landscapes, which harbor so many species of animals and plants – and within those creatures, so many unknown viruses,” David Quammen, author of *Spillover: Animal Infections and the Next Pandemic*, recently wrote in the New York Times. “We cut the trees; we kill the animals or cage them and send them to markets. We disrupt ecosystems, and we shake viruses loose from their natural hosts. When that happens, they need a new host. Often, we are it.”

Increasing threat

Research suggests that outbreaks of animal-borne and other infectious diseases such as Ebola, Sars, bird flu and now Covid-19, caused by a novel coronavirus, are on the rise. Pathogens are crossing from animals to humans, and many are able to spread quickly to new places. The US Centers for Disease Control and Prevention (CDC) estimates that **three-quarters of new or emerging diseases that infect humans originate in animals.**

Some, like rabies and plague, crossed from animals centuries ago. Others, such as Marburg, which is thought to be transmitted by bats, are still rare. A few, like Covid-19, which emerged last year in Wuhan, China, and Mers, which is linked to camels in the Middle East, are new to humans and spreading globally.

Other diseases that have crossed into humans include Lassa fever, which was first identified in 1969 in Nigeria; Nipah from Malaysia; and Sars from China, which killed more than 700 people and travelled to 30 countries in 2002–03. Some, like Zika and West Nile virus, which emerged in Africa, have mutated and become established on other continents.

Kate Jones, chair of ecology and biodiversity at UCL, calls emerging animal-borne infectious diseases an “increasing and very significant threat to global health, security and economies”.

Amplification effect

In 2008, Jones and a team of researchers identified 335 diseases that emerged between 1960 and 2004, at least 60% of which came from animals.

Increasingly, says Jones, these **zoonotic diseases** are linked to environmental change and human behavior. The disruption of pristine forests driven by logging, mining, road building through remote places, rapid urbanisation and population growth is bringing people into closer contact with animal species they may never have been near before, she says.

The resulting transmission of disease from wildlife to humans, she says, is now "a hidden cost of human economic development. There are just so many more of us, in every environment. We are going into largely undisturbed places and being exposed more and more. We are creating habitats where viruses are transmitted more easily, and then we are surprised that we have new ones."

Jones studies how changes in land use contribute to the risk. "We are researching how species in degraded habitats are likely to carry more viruses which can infect humans," she says. "Simpler systems get an amplification effect. Destroy landscapes, and the species you are left with are the ones humans get the diseases from."

"There are countless pathogens out there continuing to evolve which at some point could pose a threat to humans," says Eric Fevre, chair of veterinary infectious diseases at the University of Liverpool's Institute of Infection and Global Health. "The risk [of pathogens jumping from animals to humans] has always been there."

The difference between now and a few decades ago, Fevre says, is that diseases are likely to spring up in both urban and natural environments. "We have created densely packed populations where alongside us are bats and rodents and birds, pets and other living things. That creates intense interaction and opportunities for things to move from species to species," he says.

Tip of the iceberg

"Pathogens do not respect species boundaries," says disease ecologist Thomas Gillespie, an associate professor in Emory University's department of environmental sciences, who studies how shrinking natural habitats and changing behavior add to the risk of diseases spilling over from animals to humans.

"I am not at all surprised about the coronavirus outbreak," he says. "The majority of pathogens are still to be discovered. We are at the very tip of the iceberg."

Humans, says Gillespie, are creating the conditions for the spread of diseases by reducing the natural barriers between host animals – in which the virus is naturally circulating – and themselves. "We fully expect the arrival of pandemic influenza; we can expect large-scale human mortalities; we can expect other pathogens with other impacts. A disease like Ebola is not easily spread. But something with a mortality rate of Ebola spread by something like measles would be catastrophic," Gillespie says.

Wildlife everywhere is being put under more stress, he says. “Major landscape changes are causing animals to lose habitats, which means species become crowded together and also come into greater contact with humans. Species that survive change are now moving and mixing with different animals and with humans.”

Gillespie sees this in the US, where suburbs fragment forests and raise the risk of humans contracting Lyme disease. “Altering the ecosystem affects the complex cycle of the Lyme pathogen. People living close by are more likely to get bitten by a tick carrying Lyme bacteria,” he says.

The disruption of pristine forests driven by logging, mining, road building, rapid urbanisation and population growth is bringing people into closer contact with wildlife, increasing the risk of disease.

Yet human health research seldom considers the surrounding natural ecosystems, says Richard Ostfeld, distinguished senior scientist at the Cary Institute of Ecosystem Studies in Millbrook, New York. He and others are developing the emerging discipline of planetary health, which looks at the links between human and ecosystem health.

“There’s misapprehension among scientists and the public that natural ecosystems are the source of threats to ourselves. It’s a mistake. Nature poses threats, it is true, but it’s human activities that do the real damage. The health risks in a natural environment can be made much worse when we interfere with it,” he says.

Ostfeld points to rats and bats, which are strongly linked with the direct and indirect spread of zoonotic diseases. “Rodents and some bats thrive when we disrupt natural habitats. They are the most likely to promote transmissions [of pathogens]. The more we disturb the forests and habitats the more danger we are in,” he says.

Felicia Keesing, professor of biology at Bard College, New York, studies how environmental changes influence the probability that humans will be exposed to infectious diseases. “When we erode biodiversity, we see a proliferation of the species most likely to transmit *new* diseases to us, but there’s also good evidence that those same species are the best hosts for *existing* diseases,” she wrote in an email to Ensia, the nonprofit media outlet that reports on our changing planet.

The wet market connection

Disease ecologists argue that viruses and other pathogens are also likely to move from animals to humans in the many informal markets that have sprung up to provide fresh meat to fast-growing urban populations around the world. Here, animals are slaughtered, cut up and sold on the spot.

The “wet market” (one that sells fresh produce and meat) in Wuhan, thought by the Chinese government to be the starting point of the current Covid-19 pandemic, was known to sell numerous wild animals, including live wolf pups, salamanders, crocodiles, scorpions, rats, squirrels, foxes, civets and turtles.

Dead pangolins seized by authorities in North Sumatra. Disease ecologists argue that **viruses and other pathogens are likely to move from animals to humans in wildlife markets.**

Equally, urban markets in west and central Africa sell monkeys, bats, rats, and dozens of species of bird, mammal, insect and rodent slaughtered and sold close to open refuse dumps and with no drainage.

“Wet markets make a perfect storm for cross-species transmission of pathogens,” says Gillespie. “Whenever you have novel interactions with a range of species in one place, whether that is in a natural environment like a forest or a wet market, you can have a spillover event.”

The Wuhan market, along with others that sell live animals, has been shut by the Chinese authorities, and last month Beijing outlawed the trading and eating of wild animals except for fish and seafood. But bans on live animals being sold in urban areas or informal markets are not the answer, say some scientists.

“The wet market in Lagos is notorious. It’s like a nuclear bomb waiting to happen. But it’s not fair to demonise places which do not have fridges. These traditional markets provide much of the food for Africa and Asia,” says Jones.

“These markets are essential sources of food for hundreds of millions of poor people, and getting rid of them is impossible,” says Delia Grace, a senior epidemiologist and veterinarian with the International Livestock Research Institute, which is based in Nairobi, Kenya. She argues that bans force traders underground, where they may pay less attention to hygiene.

Fevre and colleague Cecilia Tacoli, principal researcher in the human settlements research group at the International Institute of Environment and Development (IIED), argue in a blog post that rather than pointing the finger at wet markets, we should look at the burgeoning trade in wild animals.

“It is wild animals rather than farmed animals that are the natural hosts of many viruses,” they write. “Wet markets are considered part of the informal food trade that is often blamed for contributing to spreading disease. But … evidence shows the link between informal markets and disease is not always so clear cut.”

Changing behavior

So what, if anything, can we do about all of this?

Jones says that change must come from both rich and poor societies. Demand for wood, minerals and resources from the global north leads to the degraded landscapes and ecological disruption that drives disease, she says. “We must think about global biosecurity, find the weak points and bolster the provision of health care in developing countries. Otherwise we can expect more of the same,” she adds.

“The risks are greater now. They were always present and have been there for generations. It is our interactions with that risk which must be changed,” says Brian Bird, a research virologist at the University of California, Davis School of Veterinary Medicine One Health Institute, where he leads Ebola-related surveillance activities in Sierra Leone and elsewhere.

“We are in an era now of chronic emergency,” Bird says. “Diseases are more likely to travel further and faster than before, which means we must be faster in our responses. It needs investments, change in human behavior, and it means we must listen to people at community levels.”

Getting the message about pathogens and disease to hunters, loggers, market traders and consumers is key, Bird says. “These spillovers start with one or two people. The solutions start with education and awareness. We must make people aware things are different now. I have learned from working in Sierra Leone with Ebola-affected people that local communities have the hunger and desire to have information,” he says. “They want to know what to do. They want to learn.”

Fevre and Tacoli advocate rethinking urban infrastructure, particularly within low-income and informal settlements. “Short-term efforts are focused on containing the spread of infection,” they write. “The longer term – given that new infectious diseases will likely continue to spread rapidly into and within cities – calls for an overhaul of current approaches to urban planning and development.”

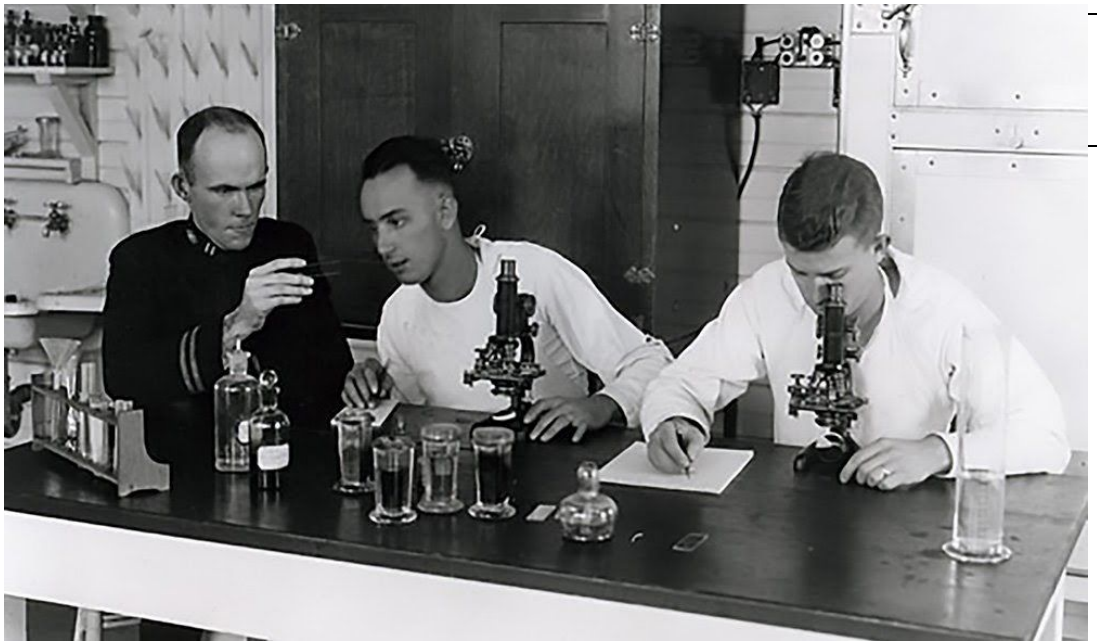
The bottom line, Bird says, is to be prepared. “We can’t predict where the next pandemic will come from, so we need mitigation plans to take into account the worst possible scenarios,” he says. “The only certain thing is that the next one will certainly come.”

Reading for Week 4

The 1918 Influenza Pandemic and COVID-19

Much has changed since the influenza pandemic of 1918, yet our responses to COVID-19 must still rely on many of the century-old lessons.

March 18, 2020 | Matthew Boyce and Rebecca Katz - PBS American Experience



The source of the influenza illness remained a mystery to scientists as viruses were too small and obscure for the optical microscopes available in 1918. Credit: Naval Historical Society

Pandemic. The word originates from the Greek word *pandēmos* – meaning from 'all' (*pan*) 'people' (*dēmos*). Today, the word conjures many frightening images but holds similar meaning – a geographically widespread or global malady, generally with regard to infectious disease outbreaks. Indeed, for centuries, novel diseases and pathogens have emerged to produce pandemics in human populations, causing widespread illness and death, as well as economic, social and political disruptions.

The ancient Greeks believed diseases to be of a spiritual origin – a punishment from the gods for wrongdoings. In the 5th century BCE, an outbreak characterized by sore throat, aches and respiratory distress was noted by Hippocrates *[hi-**pok**-ruh-teez]* and named "**The Cough of Perinthus**." In doing so, Hippocrates may have provided the first documented experience of perhaps the most notorious pandemic pathogen: influenza. Although it is unlikely that the Cough of Perinthus was the first influenza outbreak in humans, it is the first chapter or at least the prologue to a dramatic history of significant human influenza outbreaks. Medical historians believe large scale influenza outbreaks occurred in 1510 and 1557 that may have been pandemics, but an outbreak in 1580 marks what is widely regarded as **the first true influenza pandemic**. This pandemic caused upwards of **8,000 deaths in Rome and**

devastated cities in Spain – literally decimating some by killing one out of every 10 residents. Since that time, we have documented two additional influenza pandemics in the 18th century, another two in the 19th century, three in the 20th century and one thus far in the 21st century.

Of these, an influenza pandemic occurring in 1918 is the most infamous. Fueled by the transport of soldiers in the final stages of World War I, the outbreak quickly spread around the world in three distinct waves, infecting up to one-third of the people on earth and killing an estimated 50 to 100 million people. Infections were complicated with high rates of bacterial pneumonia, and the pandemic was characterized by a uniquely high mortality rate in young adults between 20 and 40 years of age. By the time the pandemic ended in 1920, it was the worst acute infectious disease outbreak in modern history and the greatest mortality event in the world since the Black Death – a 14th-century pandemic caused by the plague.

When young, healthy soldiers began getting sick by the dozens in March, 1918, military physicians were baffled by what might be causing it. Credit: National Archives and Records Administration

The 1918 pandemic had profound impacts on life in the United States. In October of 1918, **some 195,000 Americans were killed by the outbreak**. By the time it ended, over 600,000 had lost their lives, and thousands of children were orphaned. So dire was the situation that many cities including **Boston, Richmond, St. Louis** and others mandated quarantines and social-distancing measures. In **San Francisco** and **Seattle**, laws were passed forcing people to wear masks covering their mouths and noses while in public. The public health commissioner in **Chicago** told police to arrest anyone seen sneezing without covering their face in public.

These horrors were exacerbated *[intensified]* by a number of factors.

- Many physicians and nurses were enlisted in the armed forces to aid in the efforts to win the First World War, leaving a depleted *[reduced]* healthcare workforce.
- The outbreak stoked nativist *[protecting interests of early Americans, usually in opposition to immigrant populations]* reactions and the stigmatization *[shaming, excluding, viewing as "other"]* of certain ethnic groups – **such as anti-Italian sentiments in Denver** – which limited the effectiveness of efforts to curtail *[cut*

back] the outbreak.

- There were also restrictions on communication and the flow of information.

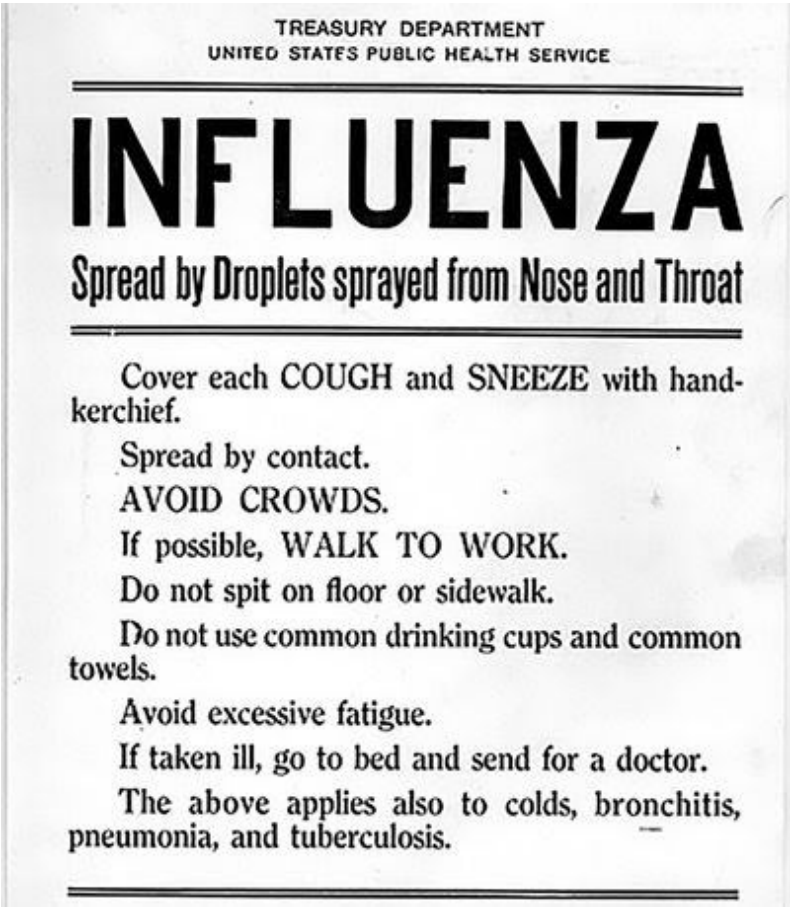
President Woodrow Wilson created the Committee on Public Information when the United States entered World War I, and at Wilson's urging, Congress passed the Sedition Act in 1918, which allowed for up to 20 years of imprisonment for criticizing the government or spreading information that could hamper the production of materials necessary for the war effort. To this end, the government printed materials urging people to report anyone "**who spreads pessimistic stories...cries for peace, or belittles our effort to win the war**" to the Justice Department. These greatly limited communication and delayed the public health response to the emerging health crisis [1]. For example, newspapers in Washington, D.C. did not begin **reporting on the outbreak until the last week of August** – months after it had begun.

Much has changed for the better since 1918. For one, after Dr. Richard Shope isolated the influenza virus in his laboratory in 1931, we now know that influenza is caused by a virus. We no longer need to exclusively rely on non-pharmaceutical interventions to respond to influenza pandemics because we have developed and refined our ability to create and produce safe and efficacious vaccines. Sir Alexander Fleming discovered penicillin in 1928, which opened the door for developing antibiotics that can help treat complications from influenza, such as pneumonia. There is now an entire field of diplomacy dedicated to health and responding to the global threats posed by infectious diseases. And we **no longer name pandemics after geographic locations, people, animals or cultural references** in efforts to avoid stigmatization.

However, there have also been changes since 1918 that complicate the responses to pandemics. A growing body of evidence suggests pandemics may occur more frequently due to changes in land use, exploitation of the natural environment and demographic trends like urbanization *[the act of becoming city-like]* —all of which increase the risk of infectious disease outbreaks. Today's society is also undoubtedly more globalized than that of 1918. The World Health Organization estimates that our world is so interconnected, a pathogen could conceivably **spread around the world in 36 hours**. Simulations suggest that if a highly contagious and lethal pandemic similar to the 1918 influenza were to occur today, approximately **33 million people could die in 6 months**.

Presently, **we find ourselves in the midst of another pandemic**. In December of 2019, a novel virus emerged in China and quickly spread throughout the country and the world, causing a disease called COVID-19, which stands for Coronavirus Disease 2019. Similar to the 1918 influenza, COVID-19 is a respiratory disease and pneumonia can be a complication. It has emerged in a time characterized by rising sentiments of nationalism and isolationism, and one in which the role of the media is in the spotlight. The spread of the disease has been fueled by the transportation of people around the world. And while we currently do not know exactly how contagious or deadly COVID-19 is, because we do not yet know the true number of persons infected, estimates based on

available data suggest that it has the potential to rival the 1918 influenza.



TREASURY DEPARTMENT
UNITED STATES PUBLIC HEALTH SERVICE

INFLUENZA

Spread by Droplets sprayed from Nose and Throat

Cover each COUGH and SNEEZE with handkerchief.

Spread by contact.

AVOID CROWDS.

If possible, WALK TO WORK.

Do not spit on floor or sidewalk.

Do not use common drinking cups and common towels.

Avoid excessive fatigue.

If taken ill, go to bed and send for a doctor.

The above applies also to colds, bronchitis, pneumonia, and tuberculosis.

The United States Public Health Service issued this pamphlet in October of 1918 as part of a public education campaign to slow the progress of the disease. Credit: Library of Congress, Rare Book and Special Collections Division

In the absence of pharmaceutical treatments and therapies for COVID-19, the response to the virus has relied heavily on non-pharmaceutical interventions and supportive treatment, much like the response to the 1918 influenza. Similarly, the response to COVID-19 has also witnessed the implementation of dramatic social distancing measures in cities, the passing of new policies designed to curtail the spread of disease and the **stigmatization of people and culture** that hinder the public health response.

The 1918 influenza pandemic was a pandemic in every sense of the word – global and affecting all people, from poor factory workers to world leaders like President Wilson. However, for all of the horrors that the 1918 influenza pandemic brought with it, the outbreak eventually came to an end and brought opportunities to learn and prepare for future pandemics. While our current situation is frightening, COVID-19 can be controlled through public health interventions, much as the influenza pandemic was eventually contained. The **century-old lessons** are clear: we must act swiftly, intentionally and implement multiple interventions simultaneously to curb the spread of disease.

NOTES:

[1] These restrictions also contribute to why 1918 influenza pandemic is commonly called the 'Spanish Influenza.' Spain was neutral in the First World War and did not censor its press. Thus, it was one of the only countries reporting on the pandemic at the time and as a result, thought to be where the outbreak began in 1918 despite the fact that modern evidence suggests **the outbreak likely began at a U.S. Army camp in Kansas** and had already been circulating in the United States of America for months.