



## *Notes on the Pandemic #10*

July 6, 2020

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### Dear DCI Community,

As I share the *Notes on the Pandemic #10* nearly four months since the first was sent to you on March 16<sup>th</sup> we have reached a milestone I doubt any of us were seeking or even anticipating. Before I offer reflections on the pandemic, I want to share some wonderful news with you. In [Notes on the Pandemic #9](#) I thanked Kathy Gillam for her 35 years of service to Stanford, for her partnership with me in the School of Medicine and for her role as the inaugural Executive Director of DCI. I have been fortunate to have worked directly with Kathy for nearly 2 decades and am grateful for all that she has contributed in so many ways. Thank you, Kathy! Although Kathy's last day was June 30, we are lucky to be able to call her back on a very part-time arrangement to help with transition as well as with further progress on the collaborative we are establishing with other colleges and universities (more about that in a future communication)

I am now very pleased to announce that [Katie Connor](#), DCI Fellow Class of 2018-19 (our first Academic Year class) has accepted my invitation to serve as our second Executive Director officially beginning on July 13<sup>th</sup>. I am most pleased to share this news with you. In truth, the search for Kathy's successor began in October 2019. A Search Committee was appointed in November that included: **Tom Ehrlich**, *Adjunct Professor, Graduate School of Education and Former Dean, Stanford Law School*; **Scotty McClennan**, *Lecturer in Political Economy, Graduate School of Business and former Dean for Religious Life*; **Roberta Katz**, *Senior Research Scholar, Center for Advanced Study in the Behavioral Sciences and former Associate Vice President for Strategic Planning for the President*; **Patti Gumport**, *Professor, Graduate School of Business and Former Vice Provost for Graduate Education and Postdoctoral Affairs*; **Dan Coleman**, *Dean of Continuing Studies*; and **Chris Yam**, *HR Director, Office of the President and Provost*.

During the first months of 2020, the Search Committee reviewed an impressive list of applicants which was a terrific affirmation of how highly DCI is valued by the community within Stanford and nationally. Katie was recommended as one of the finalists in early March. Just as I

completed referencing on the finalists, the pandemic emerged as a real threat, shelter-in-place was instituted, and the Provost placed a freeze on all hiring until clarity could be achieved about the future economic portrait of DCI. And even though DCI does not use General University Funds but rather is sourced from participant fees as well as gifts and grants, the freeze meant we could not go forward with offering the position. That remained true until two weeks ago when a request for a waiver to the hiring freeze was granted and I was able to officially offer the position to Katie. Thankfully she accepted.

Katie's connection to Stanford began in the mid-1970s as an undergraduate. She is a Phi Beta Kappa graduate in Applied Earth Science in addition to having an MS in Environmental Engineering. Following her graduation from Stanford, Katie worked as an environmental engineer in Research and Engineering at the Bechtel Group and then moved to Cambridge to pursue an MBA at Harvard, graduating with honors. Katie's career then followed two sequential paths. She first worked in business, initially as the Director of Marketing and Business Development at the Pacific Coffee Company in Hong Kong and then as Senior Project Manager and Director of Professional Recruitment at Decision Focus Inc. in Mountain View. In 2005 she began a new journey in higher education at the University of Colorado, Leeds School of Business, first as an MBA Communication Instructor and then as the Executive Director of Undergraduate Career Development where she created a mentoring program serving over 3,500 undergraduates each year. This program engaged both faculty mentors and corporate partners and became a centralized office for students, alumni and employees. As a metric of success, the Career Development Office improved student placement from 59% early in its development to over 90% in 2018 when Katie was ready to return to Stanford for her DCI Fellowship year. Katie was also successful in developing the Professional Mentorship Program and Leeds Mentoring Office from a small pilot to a nationally recognized program, engaging over 3,000 participants in student-mentor dyads with a greater than 90% satisfaction rate. I spoke with the former dean of the School of Law at the University of Colorado (now the Attorney General for the State of Colorado) and he told me that in his opinion, Katie is amazing. He went on to add that she built the mentoring programs at Colorado virtually single-handedly and while doing so she won the respect and admiration of faculty and staff. He further opined that Katie is great at community building and engaging people to create programs. Similar accolades were offered by the other individuals with whom I spoke about Katie—all affirming her energy, creativity, focus, ability to get things accomplished, and develop and foster new programs. Her positive interpersonal skills were also highlighted—all of which are beneficial attributes for the next Executive Director of DCI.

Katie begins her role as the DCI Executive Director at a unique and challenging time. As detailed in past issues as well as this *Notes on the Pandemic*, we are witnessing truly unprecedented impacts on individuals and society, including higher education. When we began the search for Kathy Gillam's successor, I expected that the new ED would join me and the DCI staff in welcoming our 2020 Class in just a couple of weeks from now for Orientation Part 1 and for their DCI experience beginning this coming September. As you know the September starting date has been moved to 2021! Thankfully we have now heard from the 2020 Class and virtually everyone has indicated their intent to begin in September 2021—when we will likely run two simultaneous cohorts. Over the next months Katie will be planning for the academic years 2020-2022, including strategic reviews, financial analysis and models as well as planning programming for our Fellows and Partners over the next year. We are all thrilled to have Katie Connor in this important leadership role for DCI—please join me in welcoming her.

And while we are thinking about the future, I also want to bring to your attention two important events to which our entire DCI Community is invited to participate. Knowing that our community is global, we will record and post these events so that you can watch them at your convenience. For those who can participate in real time (via Zoom), we will definitely look forward to seeing you. More details will follow so please consider this a placeholder:

1. **Friday October 23<sup>rd</sup>**

**DCI Fall 2020 Colloquia**

The focus of this Colloquium will be *The Election: 2020*. This exciting colloquium is being organized by **David Kennedy**, Donald M. McLachlan Professor, Emeritus and Pulitzer Prize winning historian and author. The Colloquium will have three sessions (each an hour in length both for presentation and discussion). These sessions include:

- a. **Electoral Map**—Historical setting, polling trends, key issues, swing states, prognostications
  - i. **David Brady**, Professor of Political Economy, Emeritus, Senior Fellow at the Hoover Institute, SIEPR, FSI and Bowen and Janice Arthur McCoy Professor of Leadership Values
  - ii. **David Kennedy**, Donald M. McLachlan Professor, Emeritus
- b. **Constitutional Architecture**—including the no-longer-so-easily-dismissible possibility that we could see a 2000-style hung election with tensions raised to the Nth power by comparison
  - i. **Pam Karlan**, Kenneth and Harle Montgomery Professor of Public Interest Law and Co-Director, Supreme Court Litigation Clinic
  - ii. **Nate Persily**, James B. McClatchy Professor of Law
- c. **The U.S. and the World**
  - i. **Niall Ferguson**, Milbank Family Senior Fellow, the Hoover Institute
  - ii. **Anna Grzymala-Busse**, Michelle and Kevin Douglas Professor of International Studies, Senior Fellow at FSI

We hope this will be an exciting, informative and timely event.

2. **Monday, November 9<sup>th</sup> & Tuesday, November 10<sup>th</sup>**

**2020 DCI Community Celebration**

For the past several years we have welcomed you back to campus for our annual reunion and alumni gatherings. Needless to say, we would love to gather again at the Alumni Center, have our annual luncheon and greet each other in person. Not being able to meet in person this year (hopefully for the last time ever) we look forward to celebrating virtually with each of you. Details will follow but here is a snapshot:

- a. **On November 9<sup>th</sup>** will be our faculty dialogue, which will be presented by **Professor John Hennessy**, former President, Stanford University and Founding Director, the Stanford Knight-Hennessy Scholar Program. Following Professor Hennessy's presentation, I will have a conversation with this year's recipient of the **2020 DCI Life Inspiration Award**. I am pleased to announce that the awardee is **Mark Freedman**, President, CEO and Founder of encore.org. After the ceremony we will then create reception (breakout) rooms for each DCI Class (including our 2020 and 2021 classes).

- b. **On November 10<sup>th</sup>** we will host a number of alumni events – lots of exciting details will follow.

So, in the midst of all we are dealing with in our respective lives, I am pleased to share some good news and hope you are pleased as well. Now for more updates on the pandemic.

**Back to the Pandemic:** Many of us are still sheltering in place and watching the pandemic unfold with sometimes unimaginable outcomes and consequences from nation to nation and in the US in states, cities and communities. Much of Asia, Australia, New Zealand, and Western Europe have demonstrated significant progress in reducing, and in some countries even eliminating, SARS-CoV-2. Unfortunately, the story is quite different in the US, where we not only lead the world in COVID cases but where we are seeing dramatic increases that contrast with a continued fall in prevalence in other countries. Over the past days Texas has looked a lot like New York City in April, with escalating cases and increasing shortages of hospital beds to care for those becoming sick with COVID. This is mostly attributable to the fact that in parts of the US, particularly in the South and West, the national and state guidelines for “re-opening” (detailed in [Notes #7-9](#)) were ignored and even flouted. Some of this reflects politicized positions about social distancing and wearing masks, but it also affirms the poor public health judgements that state and federal leaders made about “re-opening” before threshold criteria were met to do so safely. While some have been referring to what is now transpiring as a second surge, I think it is more accurate to think of it as the initial surge that was inadequately controlled. I confess to still being quite concerned about a real second wave that could occur in the late fall and winter when it is accompanied by seasonal influenza, making the prospect of co-infections particularly worrisome. It is also notable that while COVID cases are increasing, recent observations are that death rates are not as high as they were earlier in the pandemic. This could reflect the fact that more of the current cases are in younger adults who experience lower mortality than those over 65 years. We have learned a lot about COVID, and its treatment, although imperfect, is better than it was at the outset. But it may be too soon to draw specific conclusions about case fatality rates since mortality follows weeks after the presentation of clinical symptoms.

Regarding death rates from SARS-CoV-2, Steven Woolf et al reported in the July 1 issue of *JAMA* Online that the number of publicly reported deaths from coronavirus may underestimate the pandemic’s death toll. This study notes that provisional data may omit undocumented cases from COVID-19 as well as indirect deaths from acute emergencies, chronic illness and other disorders that were not addressed during shelter-in-place settings. The investigators reviewed death data from 50 states and the District of Columbia that was obtained from the National Center for Health Statistics from January through April 2020 and the preceding six years. Measuring excess deaths has been used to analyze the overall impact of the pandemic and demonstrated that 35% of these excess deaths were attributable to COVID-19. This is important in its own right, but as Zylke and Bauchner comment in an accompanying editorial in *JAMA*, focusing on death as a primary endpoint misses the multiple morbidities and other consequences of the pandemic. For example, morbidity and mortality can result from other multisystem consequences of the infection (e.g., cardiac damage). Further, it is also important to consider the negative consequences of sheltering-in-place, including the isolation and loneliness, increased domestic abuse or the damage to children from school closures—in learning, socialization and even access to school meals and of course the vast personal and societal economic casualties of the infection. In [a hard hitting opinion piece in the June 2020 issue of \*The Atlantic\*](#), historian and journalist George Packer opines that the coronavirus didn’t break America

but that it revealed what was already broken. Clearly there is so much to do to heal and repair our nation over the months and years ahead.

**New Policies on Primary and Secondary Schools:** In past [Notes](#) I have commented on the impact of the pandemic on higher education—which as you know has important consequences for the DCI 2020-2021 academic year. Over the past couple of months there has been debate regarding whether primary and secondary schools should reopen this fall. This week the American Academy of Pediatrics (AAP), a professional society that is cautious about protecting the health and safety of children, published “[Guidance for School Re-entry.](#)” In its report, the AAP offers the following key principles:

- *School policies must be flexible and nimble in responding to new information, and administrators must be willing to refine approaches when specific policies are not working.*
- *It is critically important to develop strategies that can be revised and adapted depending on the level of viral transmission in the school and throughout the community and done with close communication with state and/or local public health authorities and recognizing the differences between school districts, including urban, suburban, and rural districts.*
- *Policies should be practical, feasible, and appropriate for child and adolescent's developmental stage.*
- *Special considerations and accommodations to account for the diversity of youth should be made, especially for our vulnerable populations, including those who are medically fragile, live in poverty, have developmental challenges, or have special health care needs or disabilities, with the goal of safe return to school.*
- *No child or adolescent should be excluded from school unless required in order to adhere to local public health mandates or because of unique medical needs. Pediatricians, families, and schools should partner together to collaboratively identify and develop accommodations, when needed.*
- *School policies should be guided by supporting the overall health and well-being of all children, adolescents, their families, and their communities. These policies should be consistently communicated in languages other than English, if needed, based on the languages spoken in the community, to avoid marginalization of parents/guardians who are of limited English proficiency or do not speak English at all.*

Based on these governing principles, the AAP strongly advocates that all policy considerations for the coming year start with a goal of having students physically present in school. The Academy highlights all of the negative learning and socialization consequences on children from pre-K to high school that have taken place since school closures began in March. However, this recommendation is only feasible because COVID-19 has much lower incidence, morbidity and mortality in younger children than it does in adults.

As I have noted in previous communications this is quite different from other infectious diseases, including influenza, where children serve as incubators and sources of transmission. That is not the case with SARS-CoV-2. Based on this the AAP offers recommendations that are

more liberal in social distancing than is recommended for adults, although it is data driven. For example, while the CDC recommends social distancing of 6 feet (which is being employed in most settings and forecast for Stanford undergrads when they return to campus in mid-September), the AAP correctly notes that 3 feet may approach the benefits of 6 feet (I cited the data for that in [Notes #9](#): see DK Chu et al “*Physical distancing, face masks, and eye protection to prevent person-to-person transmission of SARS-CoV-2 and COVID 19: a systematic review and metanalysis*” that was published in the *Lancet Online First* on June 1, 2020). At the same time the AAP recommends that the 6 feet distance should apply to adults in the school setting. The AAP recommends that all students above the age of two wear masks or face coverings. Here I think they are being unrealistic regarding younger children. While it is feasible for older children and of course teens to wear masks, it seems unlikely that that effective mask use will be successful for younger children. The Guidelines are also specific for how classrooms should be set up and also speak to the challenges of transportation, playgrounds (clearly outdoor is in general safer), and meals. And there are many more details and recommendations.

Overall this is a game-changer in current policy and if followed, could have tremendous benefits for children as well as for parents and our overall society and community. Of course, the AAP has no regulatory authority so it is likely that these recommendations will be interpreted differently around the country by schools, teachers and, of course, parents.

Switching to adults and the symptoms of COVID-19, Michael Grant and colleagues conducted a systematic review and meta-analysis of 148 studies from nine countries regarding the prevalence of symptoms in 24,401 adults infected by SARS-CoV-2 that was published in *PLOS ONE* on June 23, 2020. Their findings are helpful in ascertaining who may be infected with the coronavirus and benefit from testing, quarantine and treatment. In this report, fever was the most prevalent symptom and was found in 78% of COVID patients. Other manifestations of COVID included symptoms related to the respiratory system with either a dry or productive cough in 24-58% and shortness of breath in 23%. A range of symptoms involving the upper respiratory tract (ear, nose, throat) as well as the gastrointestinal tract and central nervous system was varyingly observed. Fatigue occurred in 31%. However, nearly 20% of individuals who tested positive for SARS-CoV-2 were never febrile and fewer than 2 in 5 developed a cough. Unfortunately, the use of symptoms to screen adults for SARS-CoV-2 will miss a substantial portion of infected individuals, making the task of determining who should be at work or school even more challenging. More work remains. While the US has previously been a leader in public health strategies, that is less evident today if we view the nation as a whole. Certainly, there have been areas of public health excellence (including in the Bay Area) but they have not been generalized across the US—which is one of the reasons we are lagging behind other nations in reducing the spread of SARS-CoV-2.

Lessons can also be learned from countries which have performed more successfully than the US and one that has stood out from the onset is Taiwan. A report published in the July 2<sup>nd</sup> issue of the *Annals of Internal Medicine* by Shao-Yi Cheng (along with our Stanford faculty member Jason Wang) affirms that it is possible to open colleges and universities as long as there are defined policies and capabilities for school-based screening coupled with the ability to manage a quarantine if necessary. Essential is the ability to assure compliant behavior with social distancing, wearing masks and PPE, and clear guidance on hygiene measures and sanitation practices. Stanford has been developing similar comprehensive policies and practices for its reopening that will commence in mid-September (see [Notes #9](#) for details). But a lingering question is how compliant students and others will be in following these policies and recommendations. Obviously, this is a major concern. The question is what to do if (and I would

posit when) a confirmed case is identified in a student, faculty or staff member. In the Taiwan experience, if one student or individual tests positive, the student's classes should be suspended and if two cases are reported, the school should be closed for 14 days. This makes good sense, but it will be a challenge to implement when residential students are coming from around the world and where the necessary quarantine will need to be within the university.

While the approach to younger children can be more flexible both because they live at home and have a lower risk of acquiring SARS-CoV-2 or for developing serious COVID manifestations, there is greater vulnerability for college age and young adults (although significantly less so than for older adults) and strict policies, including quarantine and closure, will be needed. Given our inexperience in managing such situations, the next year will need flexibility, rapid management and enforcement to assure protection of health and safety. Uncertainties still abound and this was one of the reasons for our decision to not hold an on-campus DCI program during the 2020-21 academic year. Needless to say, a return to normality also requires effective treatments for COVID as well as an effective vaccine.

**Accelerating Therapeutic Interventions and Vaccines:** The historical reality is that identifying new drugs, testing their safety and efficacy in humans, and gaining approval from regulatory agencies for their commercialization can take many years (often 10 or more!). Vaccines generally take 2-5 years to develop although some can be 10 years in the making, and in some cases (like HIV/AIDS), an effective vaccine has yet to be developed despite extraordinary efforts to do so. Given these realities, it is notable that we are witnessing unprecedented collaborations among scientists around the world to understand the basic virology, immunology and clinical manifestations of SARS-CoV-2 and COVID as well as to develop treatments and preventive strategies. While the true desire to advance knowledge and progress is notable, there is still competition between academic centers, industry and beyond that is underpinned by the economic realities of intellectual property and future revenues—for individuals and organizations.

There have been other periods of coordination among principal stakeholders as I witnessed during the early days of HIV/AIDS when affected communities helped drive the agenda and break down barriers. Accordingly, I was pleased with the Viewpoint article in the June 23<sup>rd</sup> *JAMA* by Francis Collins, Director of the National Institutes of Health and Paul Stoffels, Chief Scientific Officer at Johnson & Johnson entitled: *Accelerating COVID-19 Therapeutic Interventions and Vaccines (ACTIV)*. Collins and Stoffels describe the main goals of ACTIV as establishing a collaborative framework to prioritize therapeutic and vaccine candidates, streamline clinical trials and tap into the existing resources of clinical trial networks, and to coordinate the regulatory processes as well as leverage the assets of the public and private partners internationally. As outlined in this brief article, a partnership leadership group and four working groups have been established as shown in Figure 1 below.

From: **Accelerating COVID-19 Therapeutic Interventions and Vaccines (ACTIV): An Unprecedented Partnership for Unprecedented Times**

JAMA. 2020;323(24):2455-2457. doi:10.1001/jama.2020.8920

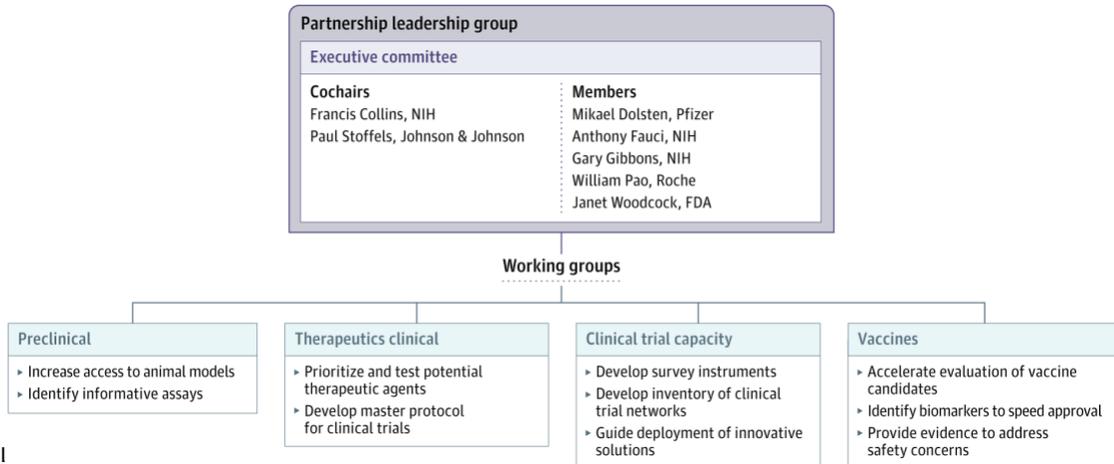


Figure 1

The Accelerating COVID-19 Therapeutic Interventions and Vaccines (ACTIV) Partnership COVID-19 indicates coronavirus disease 2019; FDA, Food and Drug Administration; and NIH, National Institutes of Health.

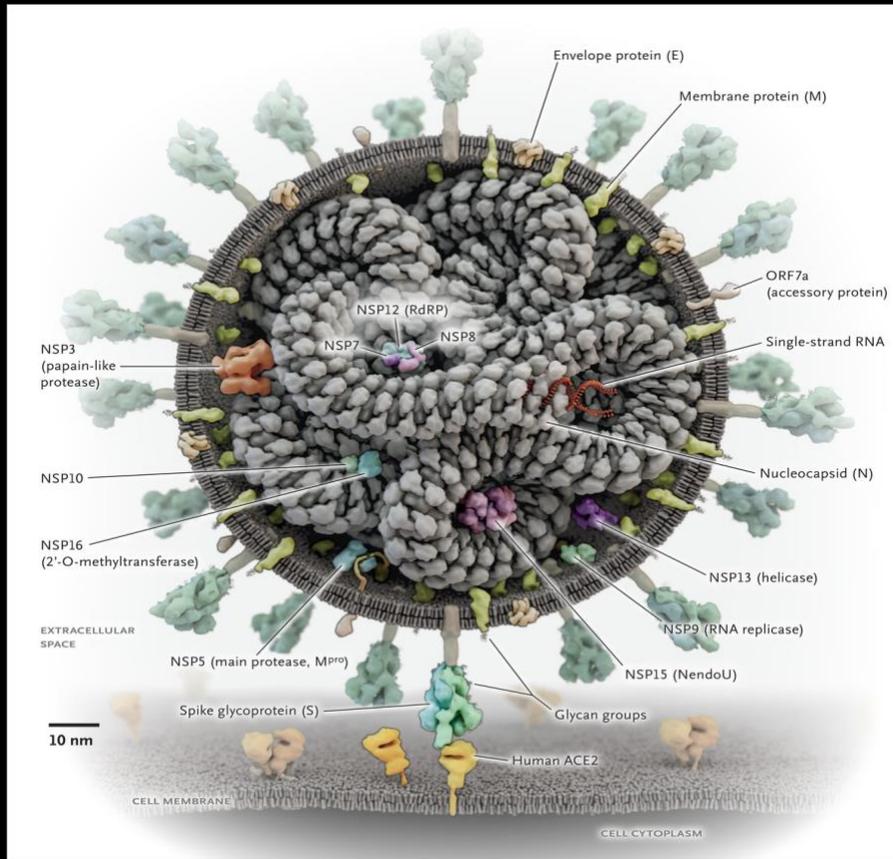
Date of download: 7/4/2020

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Clearly this is a work in progress, but it is an encouraging start that will require exceptional support, coordination, leadership and oversight. But that is critical at this juncture.

Another notable alignment is the utilization of drug discovery emanating from the already achieved sequence of the SARS-CoV-2 genome and the recognition that it encodes approximately 25 proteins that are needed by the virus to infect humans and to replicate once the virus enters target cells. While this is likely more than you would like to see, the amount of information already determined over the past six months is noteworthy and can be seen in the following figure from an article published in the May 21 issue of the *New England Journal of Medicine* by Jerry Parks and Jeremy Smith. Among the current notable targets are the spike protein, which recognizes the human angiotensin-converting enzyme 2 in the initial stage of infection (which is less expressed in children and thus may account for why they are less subject to infection). Other proteins/enzymes are also important topics. What Parks and Smith focus on is the connection between basic biology and computer science and especially structure-based drug discovery.

## The SARS-CoV-2 Virion and Its Proteins.



JM Parks, JC Smith. *N Engl J Med* 2020;382:2261-2264.



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The authors note that modern supercomputers can be employed to explore simulation models that rapidly define molecules (drugs) that can dock on the important viral targets, both for existing drugs as well as new compounds. Such high-throughput screening can accelerate drug discovery progress and thus enhance the work of the ACTIV Group described above.

I provided an overview of immunology and vaccine development in [Notes from the Pandemic #5](#). As you may know, over 100 groups around the world are working on developing a vaccine for SARS-CoV-2 and several have reported early but encouraging preliminary results. While some have promised that a vaccine would be available by the end of 2020 or early 2021, this would be unprecedented. Needless to say, we would all celebrate a vaccine as soon as possible, although it is imperative that when a vaccine is developed that it is safe and effective.

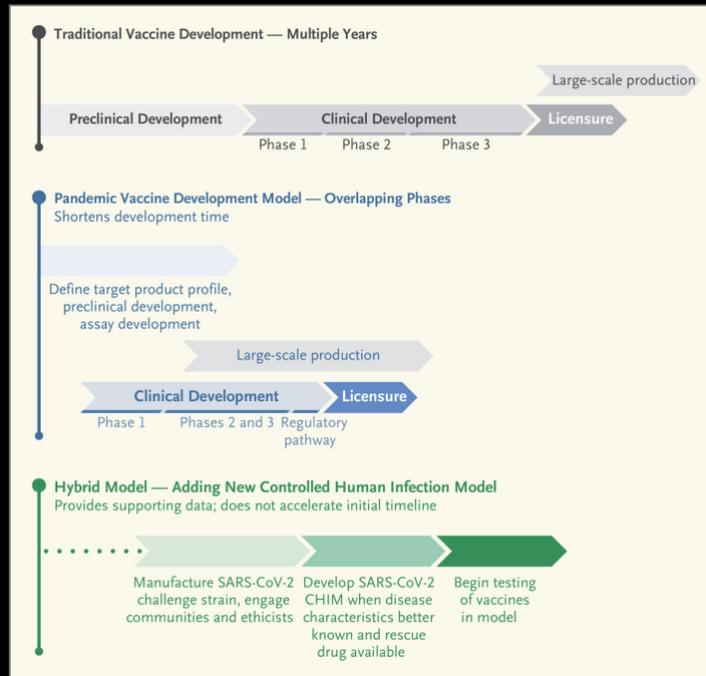
Even before SARS-CoV-2 the antivax movement was already well established and misinformed about vaccines causing untoward complications, despite remarkable evidence to the

contrary. But we can't lose sight of the fact that even well-intentioned efforts to administer vaccines before safety data is in hand or before all the quality and regulatory oversights are in place can lead to serious adverse events. We witnessed this in 1955 when distributed batches of the Salk vaccine prepared by Cutter Laboratories contained an inadequately attenuated poliovirus vaccine that resulted in 70,000 children developing muscle weakness, 164 of whom were permanently paralyzed, 10 of whom died. In 1976 the rush to develop a vaccine for swine flu influenza led by a panel commissioned by President Gerald Ford authorized a rushed distribution of a swine flu influenza vaccine before adequate safety results were obtained. What followed were cases of a paralytic disorder called Guillain-Barre syndrome which undermined the scientific integrity of the process and damaged the public trust. Now we are back with a hope we all share that a vaccine can be developed quickly and, while government leaders have termed this "Operation Warp Speed," it is imperative that vaccine development be successful and not subject to political forces.

Brit Trogen, David Oshinsky and Arthur Caplan offer a commentary on this in the June 23<sup>rd</sup> *JAMA* in an article entitled *Adverse Consequences of Rushing a SARS-CoV-2 Vaccine. Implications for Public Trust*. The authors state "*Failing to abide by standards of safety and scientific rigor during the COVID-19 crisis will fuel the argument that physicians and scientists cannot be trusted. Vaccine rates, which are declining due to widespread concern about visiting clinicians' offices, could further decrease. The US could see resurgences of many vaccine-preventable illnesses, and inevitably, massive increases in avoidable deaths and irreversible outcomes.*" I very much concur with this perspective. Coupled with this is the importance of assuring that once treatments and vaccines are developed that they are distributed equitably in the US and globally. That too is another area of concern.

Another important ethical and societal issue concerns vaccine development accelerated by "controlled human infection models." This topic was reviewed more broadly in the July 2<sup>nd</sup> issue of the *New York Review of Books* by Carl Elliott in reference to a book by Jill Fisher entitled *Adverse Events: Race, Inequality, and the Testing of New Pharmaceuticals*. Not only does this review discuss the ethical dilemmas regarding drug and vaccine testing, it further illustrates that many of the paid volunteers for challenge trials are entering sometimes risky studies for personal financial reasons. This is further reviewed from a different viewpoint in a Perspective article in the *New England Journal of Medicine* by Megan Deming and colleagues entitled: *Accelerating Development of SARS-CoV-2 Vaccines – The Role for Controlled Human Infection Models*. The authors note that the World Health Organization has set forth essential criteria for SARS-CoV-2 challenge studies that would minimize the risk to participants, staff and community. Historically, challenge studies have involved organisms that pose minimal risk to the recipient or for which there is an effective oral treatment. That is not the case at this time, but it could be so in the future. With that in mind the authors laid out different models for conducting a challenge study as outlined in the figure below. If these studies could be done, they could permit early testing while still preserving the need for the large randomized clinical trials that are necessary for vaccine approval.

# Vaccine Development Models for SARS-CoV-2 Vaccines.



ME Deming et al. N Engl J Med 2020. DOI: 10.1056/NEJMp2020076



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The major intent of this approach to vaccine development is aligned with the goal of ACTIV, to accelerate new therapies and vaccines for COVID, a true priority as long as it is done with quality and demonstrates safety and efficacy.

As I close *Notes #10*, I am reminded of how much our lives have changed, individually and collectively, and how much our nation and the world has as well. I have written some of these Notes on Independence Day and cannot help but reflect on the impact of the US vision and exceptionalism on the world order. While so much of this seems to be squandered today, I harken back to the opportunities for renewal and the hope that in the months ahead we will find better days. To that I embrace [Thomas Friedman's June 30th opinion piece](#) in the *New York Times* where he offers a recommendation for a bumper sticker that he borrowed from environmental innovator Hal Harvey. I think the words matter and offer relevance beyond political utility. ***“Respect science, respect nature, respect each other.”***

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