

# An Adaptive Risk-Based Strategy for Connecticut's Ongoing **COVID-19** Response



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On March 11, 2020, the World Health Organization declared the spread of the **novel coronavirus** a **pandemic**. Immediately after, the U.S. declared a national state of emergency. As a member of the Connecticut Academy of Science and Engineering and a recently retired mechanical engineer from United Technologies Corporation, I volunteered to lead a committee of CASE Members and Members of the National Academies on the development of a white paper for consideration by the Office of the Governor. The purpose of the paper is to provide a unique perspective and recommendations for consideration by the state of Connecticut in adapting and managing the risks in response to the virus. In doing this, I recognized the value that a diverse committee who represented the fields of science, medicine, engineering, and technology and whose members came from colleges and universities, as well as businesses and industries, would have on raising new ideas or revisiting existing strategies in light of new research about the virus.

For example, we can now recommend more practical guidance on reducing our exposure to the virus, including the duration of contact as well as physical separation distance, and distinction of the risks between indoor and outdoor settings. The guidance early in the pandemic was rigid as much was not known, and now scientists can confidently recommend more fine-tuned strategies that remain focused on reducing risk based on how the virus transmits from person to person in different environments. This guidance will be further refined as we continue to learn more.

So, **adaptation** is a key consideration. We must continue to learn about this virus and its impacts and apply what we are learning, so that positive outcomes can be achieved, while minimizing negative consequences to public health and the economy.

## Meet the Scientist

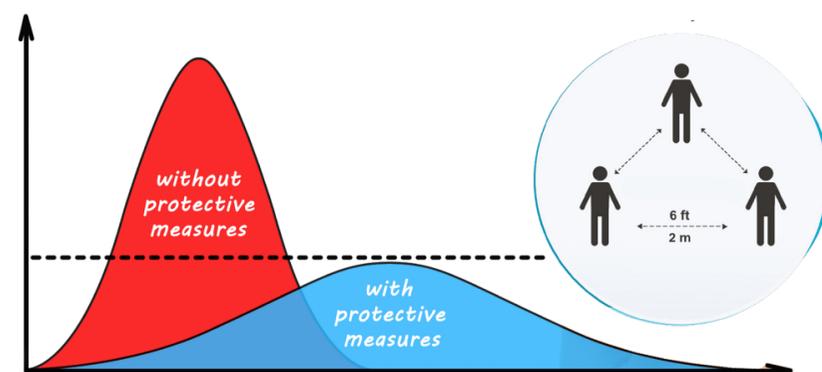
I am retired from United Technologies, where I spent 12 years as the director of the United Technologies Research Center. In my position, I was responsible for assuring that the next generation of technology was available and accessible to all of the UTC divisions to enable their new products and processes. I grew up as an only child to a first generation immigrant single parent from the Philippines and ended up establishing and leading research centers on three different continents. My grandfather instilled the importance of family, faith, and education. He emphasized excellence in everything I do and doing the right thing no matter whether anyone sees. In my spare time I like to play tennis and watch it being played. I have been married for 37 years and have 3 children, 4 grandchildren, and one more grandchild on the way!

## SKILLS & KNOWLEDGE

I earned a bachelor's degree in mechanical engineering (ME) at Virginia Tech, and from Stanford University a MS in ME, a MS in Electrical Engineering, and a PhD in ME. My scientific contributions made possible by my formal education include the discovery of new fluid dynamic phenomena, technology development in the field of active flow control, and pioneering efforts related to hydrogen fuel cell powered flight. A skill that has been particularly helpful to me throughout my career is the ability to work collaboratively with national and international teams on the development of new products and processes in aerospace, energy, and digital media. And, I am constantly curious and consider myself, as do many scientists and engineers, a life time learner.

### hyperlinks

<https://www.cdc.gov/coronavirus/2019-ncov/communication/videos.html?Sort=Date%3A%3Adesc>  
<https://publichealth.yale.edu/coronavirus/>



## Words To Know

**Novel Coronavirus:** a new coronavirus that has not been previously identified. The virus causing coronavirus disease 2019 (COVID-19), is not the same as the coronaviruses that commonly circulate among humans and cause mild illness, like the common cold.

**Pandemic:** of a disease prevalent over a whole country or the world. Pandemics happen when a new virus emerges to infect people and can spread between people sustainably. Because there is little to no-pre-existing immunity against the new virus, it spreads.

**Adaptation:** a change or the process of change by which an organism or species becomes better suited to its environment

**For Students and Teachers Making Curriculum Connections, see the following:**



**Connecticut State Department of Education (CSDE) - Common Core State Standards (CCSS): Mathematics**

- CCSS.Math.Practice.MP1 Make sense of problems and persevere in solving them
- CCSS.Math.Practice.MP3 Construct viable arguments and critique the reasoning of others
- CCSS.Math.Practice.MP5 Use appropriate tools strategically

**CSDE - Next Generation Science Standards: Scientific and Engineering Practices**

- Asking questions and defining problems; developing and using models; planning and carrying out investigations; analyzing and interpreting data; using Mathematics and computational thinking; constructing explanations and designing solutions; engaging in argument from evidence; and obtaining, evaluating, and communicating information.