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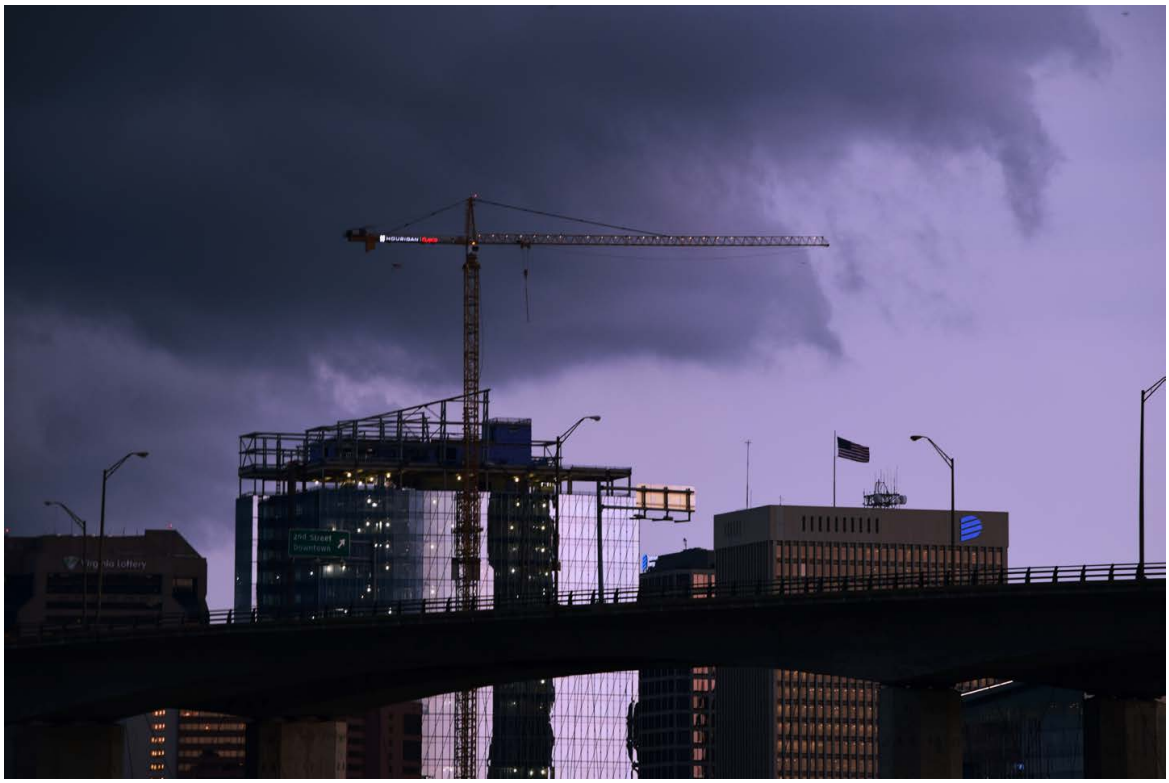

How the Pandemic Has Forced Us to Reexamine Our Priorities

This article by Forbes speaks about how we need to finally open our eyes to just how unsustainable and irresponsible our pre-pandemic way of life was. This semester one of the labs that we did involved the efficiency and operating conditions of a solar-electrolyzer-fuel cell arrangement. My undergraduate research involved sustainable energy using flow cells. So this topic is one that is always on my radar. I've always had an interest in helping the environment and I'm excited that my time at Columbia has opened new fields that I can contribute to. The article cites that changing over to cleaner energy would be cheaper than what we currently do. Renewable energy is already less expensive than fossil fuels, the only thing holding us back is the money that people in power have placed in support of these unsustainable methods.

The effects of the pandemic is spreading across many different facets of our lives. Parents are realizing that their children are not "a pleasure to have in class", people are being confronted for their selfishness as they protest for others to put themselves at risk for non-essential comforts, and workers are realizing that unions are *really effective*. The national energy demand could be met easily, except politicians are regularly bribed to go against environmental policies.

There are really cool strides in materials for renewable energy as well. A paper by Tung et al (2020), speaks about combining a well known polymer (PEO) with aramid fibers. This idea was inspired by the architecture of collagen. The aramid fibers are related to

Kevlar, and this helps to make really resilient membranes to place in batteries. These membranes are what contribute to the efficiency of fuel cells, apart from the electrode materials. In the paper they used copper dendrites to test the membrane, since copper is harder than lithium. And since the membranes withstood copper dendrites it will be able to survive in a battery environment that uses Lithium as the charge carrier. Making the membranes at a large scale is also supported by this paper, since it uses materials that are already produced in the supply chain. A battery was built with the membrane in question and a small drone was flow to illustrate how easy putting the material into production is. This paper illuminated just how close we are to producing long lasting devices, and how we can step away from one use batteries that degrade because of dendritic growth. When the world ends social distancing we should as a whole become more excited about these new technologies.