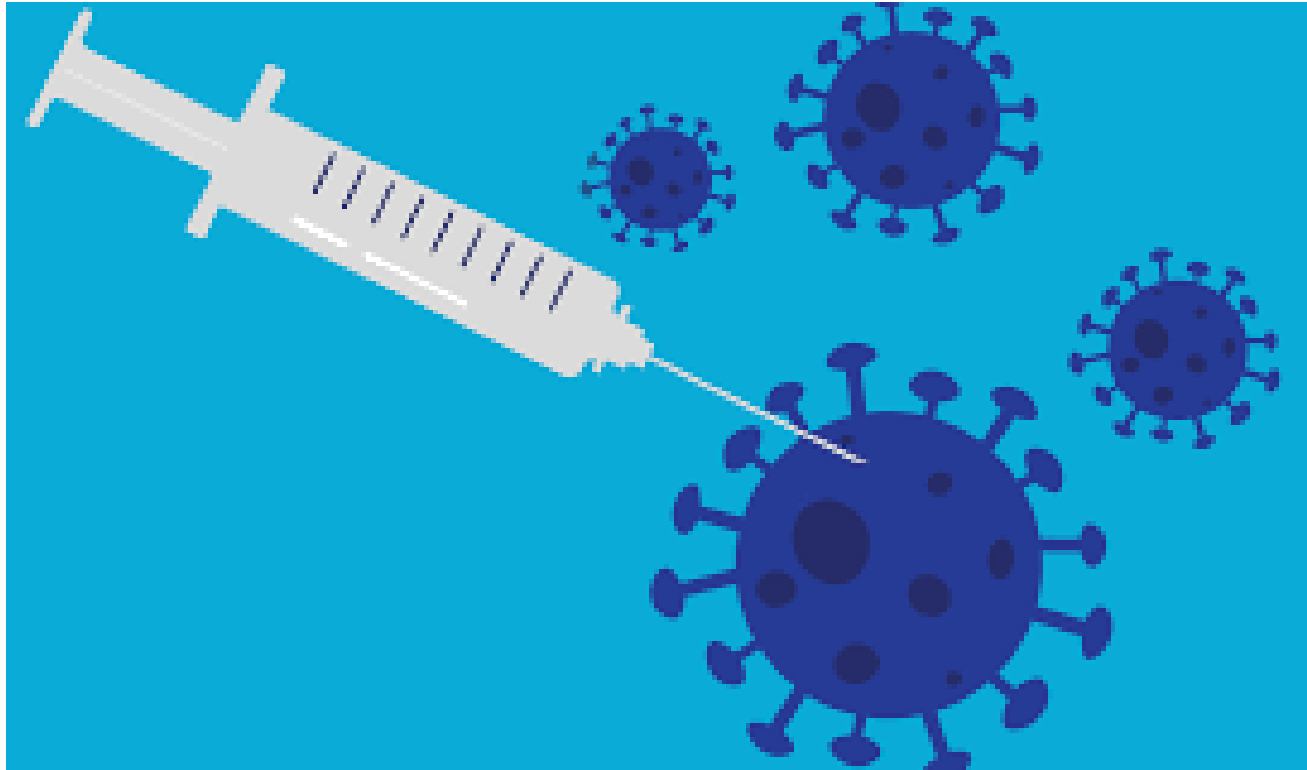


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The Innovation Ecosystem and IP's Role in the Fight Against Covid-19

Mistaken Skepticism about IP and Covid-19 Research at Every Step

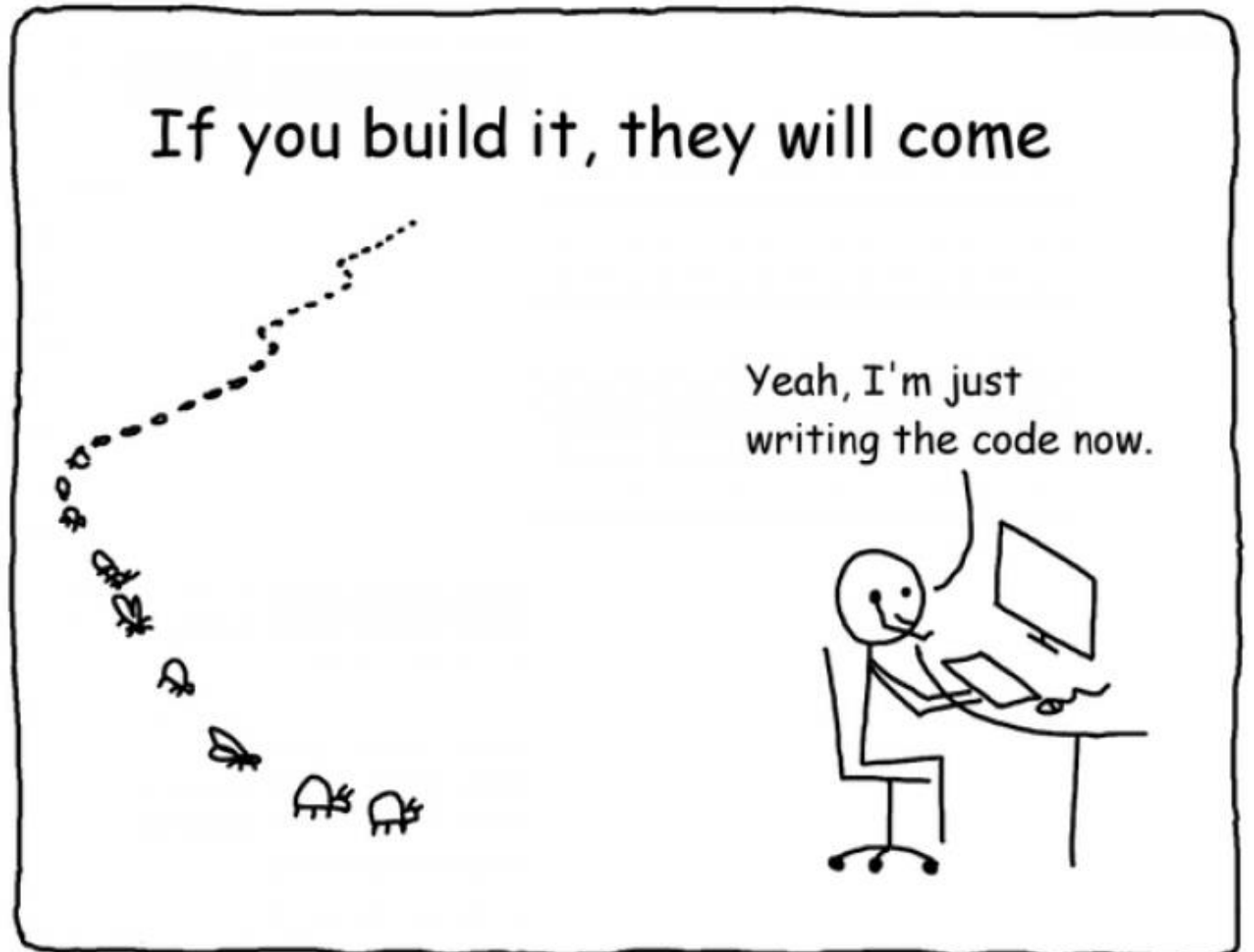


“IP will block information sharing for basic research”

“IP will impede vaccine and treatment development”

“IP is getting in the way of making and distributing vaccines”

A fundamental
misunderstanding
of innovation



The three parts of innovation

And why IP matters

Difference-making innovation has three parts



INVENTION



MAKING A PRODUCT



GETTING PRODUCTS TO
PEOPLE

Insights



Spread out the work

The **division of labor** is essential to bringing drugs from the lab to patients



Spread out the risk

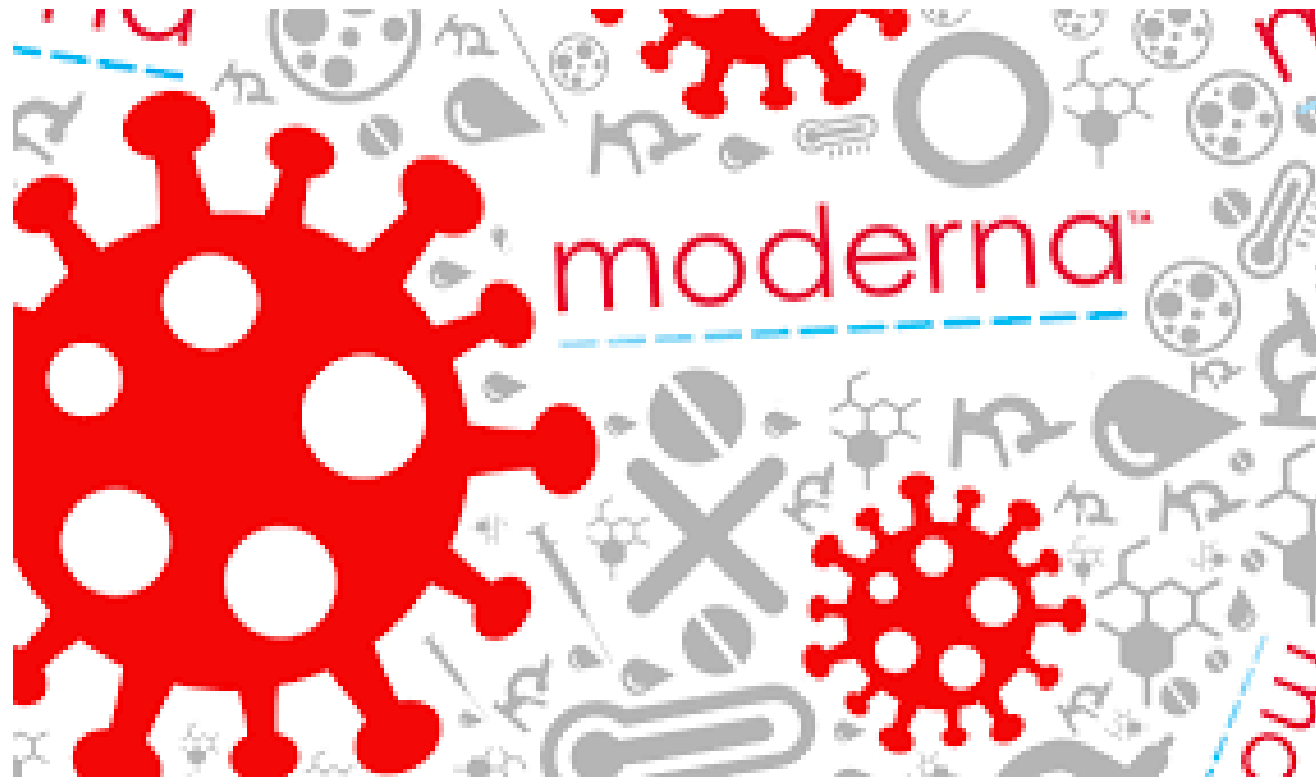
Drug development is characterized by **failure** and wasted investment

Private sector work privatizes the financial and political risk

The three parts of life sciences innovation in the Covid-19 Story

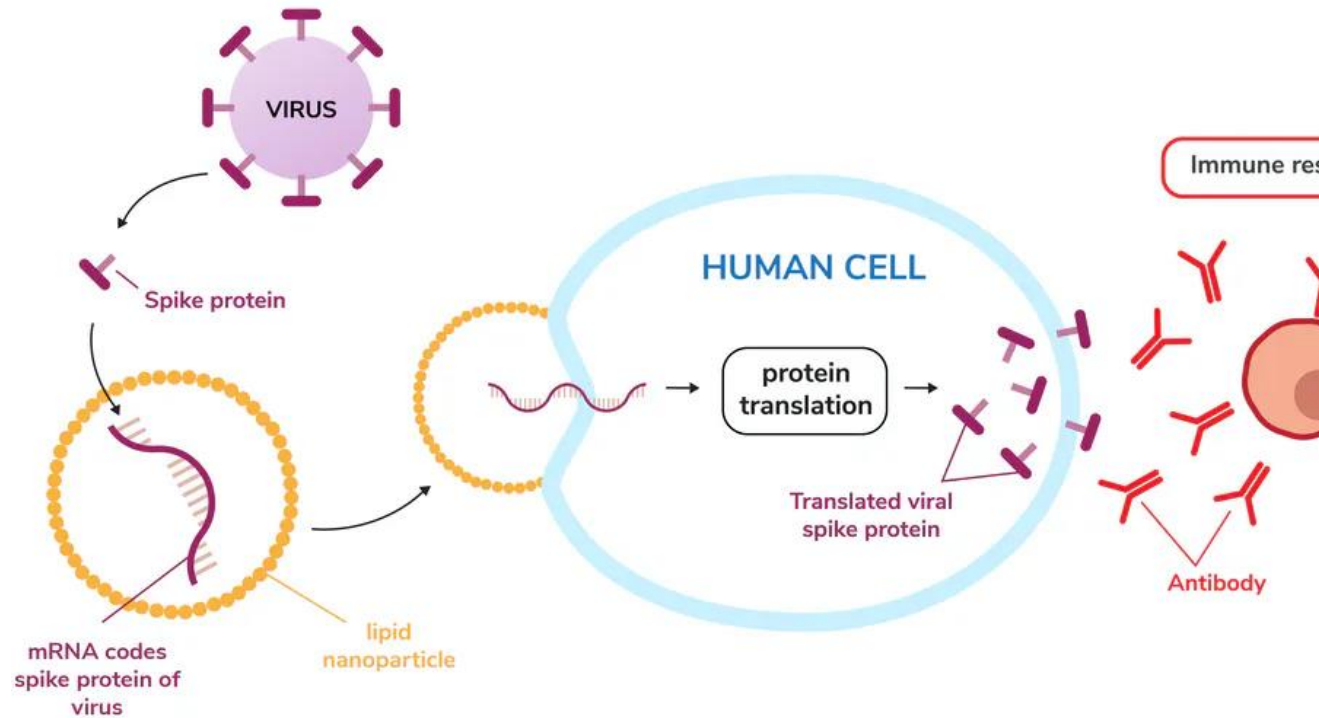
And why IP matters

Moderna



- Started with Dr. Derrick Rossi reading an academic paper by Karikó
- Brought the first Covid-19 Vaccine to Human Trials in 45 days
- A year later, it is well on its way to manufacturing a billion doses

Synthetic mRNA

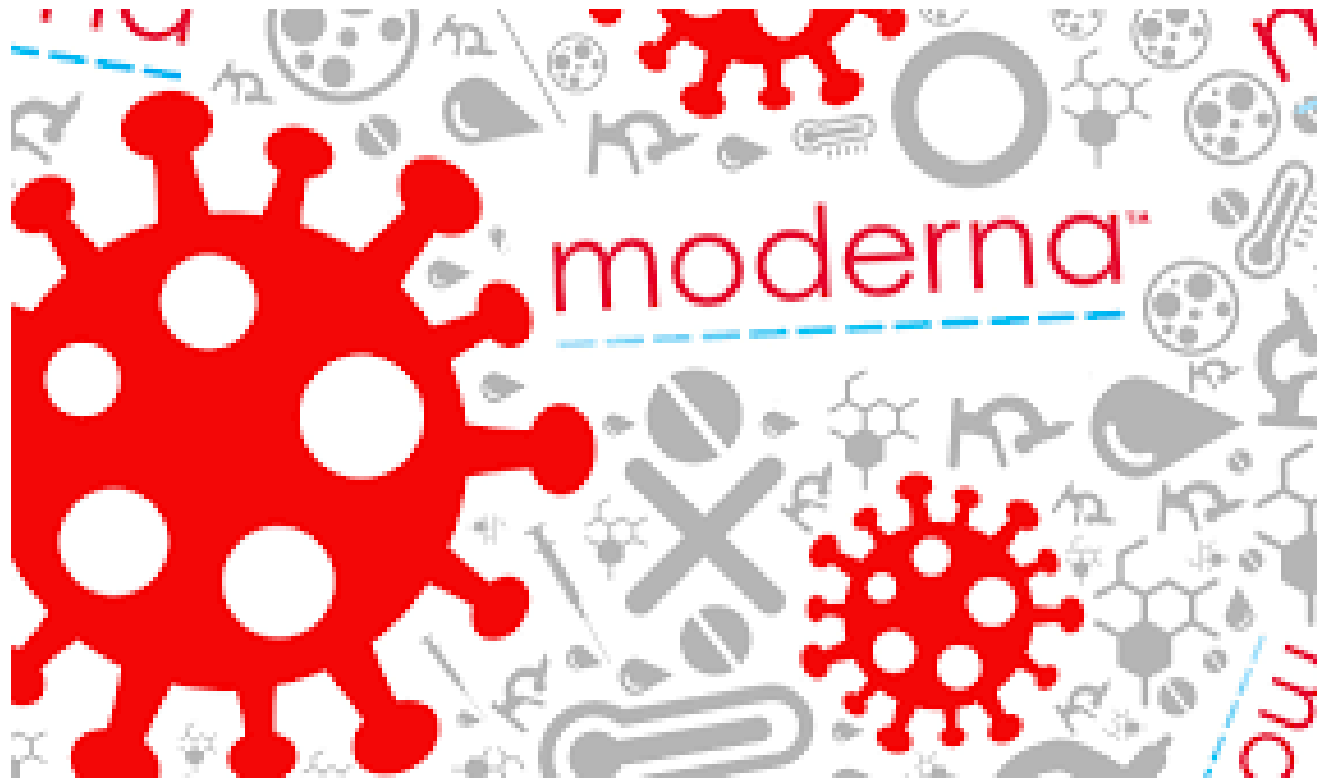


- Not an overnight success
- mRNA discovered in 1961
- Idea that synthetic mRNA could treat diseases has existed for decades
- For the researcher most responsible for advancing the idea, Katalin Karikó, it was almost a career dead-end

mRNA Technology

- Challenges to overcome:
 - Fragility of mRNA
 - Body's rejection when it enters cell
- Decades of public and private research
- Billions of investment

Moderna



- Ultimately, it took 100s of millions of investment in Moderna and BioNTech by VCs, companies, and the public to get these companies to the point where they could produce a vaccine

Dr. Derrick Rossi & Moderna



- Academic founder of Moderna
- “You can be working on the coolest thing, but investors need to know that there is some protection for their investment, plain and simple.” IP is “the future prospect that reassures investors.”
- *Could the government or university researchers commercialize their work?*
- “**Not a chance.** Academics are good at academia and fundamental science. They are not good at developing drugs for patients.”
- “This industry of professionals is out there. . . .The more people that are involved in the chain, post-academic discovery, the more you have pros involved – all the way from IP filings to VCs to due diligence to assembling a team,” the more likely you are to develop a viable treatment.



Creating a vaccine was just the first step

- Pfizer's experience
- mRNA vaccines had **never** been manufactured at scale
- 86 different suppliers
- 10 - 15 **unique** raw materials
- 280 materials in total
- 46 steps to go through before they could release a batch of vaccine

Covid-19,
IP, and the
three steps
of life
sciences
innovation

Each step – research, product development,
and delivery to the public – was hard

Each step required investment

The investment was backed by IP

IP facilitated cooperation

Thank you

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