Vaccine billionaires: COVID emerging as a \$100 billion-plus business

By **KIENAN BRISCOE**

LYNNWOOD, Wash. – From the same pandemic that sent the jobless rate to 20.2% in Snohomish County last year and near record high unemployment nationally causing millions to leave the work force, arose nine new billionaires after shares in companies producing vaccines soared. The nine new billionaires collectively are worth \$19.3 billion, enough to vaccinate approximately 780 million people in low-income countries, according to People's Vaccine Alliance.

While the largest vaccination campaign in history may have saved an estimated 140,000 deaths in the U.S., COVID vaccines are emerging as a \$100 billion-plus business, Bloomberg reported, leaving many to wonder how much is too much to pay for health and safety.

The 9 new vaccine billionaires, in order of their net worth are:

- Stéphane Bancel, Moderna's CEO (worth \$4.3 billion)
- Ugur Sahin, CEO and co-founder of BioNTech (worth \$4 billion)
- Timothy Springer, an immunologist and founding investor of Moderna (worth \$2.2 billion)
- Noubar Afeyan, Moderna's Chairman (worth \$1.9 billion)
- Juan Lopez-Belmonte, Chairman of ROVI, a company with a deal to manufacture and package the Moderna vaccine (worth \$1.8 billion)
- Robert Langer, a scientist and founding investor in Moderna (worth \$1.6 billion)
- Zhu Tao co-founder and chief scientific officer at CanSino Biologics (worth \$1.3 billion)
- Qiu Dongxu, co-founder and senior vice president at CanSino Biologics (worth \$1.2 billion)
- Mao Huinhoa, also co-founder and senior vice president at Can-Sino Biologics (worth \$1 billion)

Record Profits for Big Pharma

An analysis by the People's Vaccine Alliance alleges that firms Pfizer/BioNTech and Moderna are charging governments as much as \$41 billion above the estimated cost of production, at least five times more expensive than they could be.

Moderna and Pfizer are benefitting the most with Stephan Bancel, CEO of Moderna, and Ugur Sahin, CEO of BioNTech, now worth around \$4 billion each. Pfizer reported in May their vaccine has brought in \$3.5 billion in revenue in the first few months of 2021, nearly a quarter of its total revenue. Although Pfizer did not publish their profits publicly, Bloomberg reported profit margins from vaccine sales could be around 20%.

In its July 2021 second-quarter report,

Pfizer updated its first-quarter revenue assumptions for the BNT162b2 Pfizer-BioNTech SE (BioNTech) COVID-19 – vaccine from approximately \$26 billion to \$33.5 billion. For its second-quarter revenue, Pfizer posted \$19.0 billion of which \$7.8 billion (41%) was related to COVID vaccine

For the first six months of 2021, Pfizer reported \$33.56 billion in overall revenue, a 68% increase compared to the same period in 2020, with a Net Income of \$10.44 billion. The vaccine division reported revenue of \$14.13 billion within the first six months of which \$11.3 billion (80%) is attributed to its BNT162b2 - Pfizer-BioNTech SE (BioNTech) COVID-19 – vaccine.

Because of this strong operational growth, Pfizer updated its 2021 expected annual revenue guidelines from a range between \$70.5-72.5 billion to \$78-80 billion.

Frank D'Amelio, Pfizer's Chief Financial Officer and Executive Vice President, Global Supply, downplayed the influence of COVID operations to the company's recent growth.

"Pfizer's second quarter performance highlighted once again the underlying strength of our business, with consistent and solid growth coming from multiple products and categories. It is important to point out that the 10% year-over-year operational revenue growth rate for our business excluding BNT162b2 comes on top of a strong 6% operational growth rate delivered



by the comparable business in the second quarter of last year. As a result of updates to our expectations for our business, both including and excluding BNT162b2, we are increasing our 2021 financial guidance ranges for revenues and Adjusted diluted EPS for the second quarter in a row."

Pfizer's third-quarter performance report is expected November 2.

Moderna's share prices have raised 700% since February 2020, while BioNTech has surged 600%, CNN re-

Moderna grew from 930 employees as of June 2020 to approximately 1,800 employees a year later. Stéphane Bancel, Chief Executive Officer of Moderna was more forthright with the company's recent growth tied to its COVID vaccine operation.

"I am proud of the progress our teams

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Q&A with Edmonds School Board Director District 2 candidate



Melissa Stepp. Source: Lynnwood Times/Mario Lotmore.

EDMONDS, Wash. – The Lynnwood Times held an interview with Edmonds School Board Director District 2 candidate Melissa Stepp regarding her platform and priorities if elected to her position.

The following are the questions asked and Stepp's answers.

A district director is responsible for viewing and evaluating policies, establishing spending priorities and developing instructional philosophies and goals. What inspired you to run for office and what will your top three priorities be if elected?

"The national politics of the last two national election cycles have really been what inspired me. A common theme throughout any of the commentary that I've listened to and read is in order to make a real change you have to be involved at a local level. The last two election cycles have left me feeling like I don't have a lot of control, can't make an influence, can't make a difference and it came up that there was a local school board position and I said, "I think I can do that."

Stepps' top three priorities are student engagement, increasing the general knowledge of the general ed teachers, and increasing math and science cores without sacrificing creativity and critical thinking.

What is the best way to address differences of opinion on the board or between the board and administration?

Listening with kindness. If I listen to understand rather than to respond I will be able to come to an agreement, compromise, and learn from both the administration as well as other board members.

What issues do you believe your district needs to address in its academic program in its offerings and what changes would you recommend?

In listening to the school board meetings over the past few months, especially since I decided to run, one of the conversations has been what to do about reduced enrollment and advanced education...I would like to see a real critical analysis of what benefit the students are actually getting from those programs, particularly reducing the amount of debt when choosing college.

What do you feel are the top concerns facing students and what do you propose to address those concerns?

In-person learning is so much better for their health. They need the socialization, the needed the social interaction, it's better for the mental health and that makes them better prepared to succeed academically. Keeping kids in school, despite being a pandemic.

If given a \$500,000 grant to use in the school district how would you allocate it in the best interest for the students?

We need to build new schools, especially new elementary schools. There are nine multi-family housing units going in around 99 and 195th and those kids have to go to school somewhere.

What does equity mean to you?

Equity is really about getting what we want and where we want to go but recognizing that not everybody starts in

the same place.

What sort of relationship should a school district board have with its parents and families?

It should be a positive relationship. The relationship should be based on a common definition of trust as well as effective communication and an affective definition of listening.

Regarding school safety what do you think the district is doing right and where do you think there is an opportunity for improvement?

I think we should leave discipline up to educators and up to administrators [not school resource officers].

Stepp believes that officers do have a place on campus but not as staff, especially because they are in uniform and armed. She believes that is not a good impression on children.

In closing, Stepp assured that her lack of experience as a school board director should not be a deterrent to vote for her. She admits she has to learn a lot, but she has the courage to do that and hopes that the school board will join her in that journey.

Although she lacks experience on the school board, her experience leading teams for 20 years and setting employees up for success have paved the way for leadership if elected.

The Lynnwood Times reached out to Stepp's opponent, for an interview but as of the date of this article, he has not responded to our requests.

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at Moderna have made in the past quarter in advancing our development pipeline while addressing a global pandemic and quickly establishing global manufacturing and commercial organizations," said Stéphane Bancel, Chief Executive Officer of Moderna. "We now have mRNA candidates in clinical trials across five therapeutic areas including infectious diseases, cardiovascular, oncology, rare disease and autoimmune disorders. We are pleased that our COVID-19 vaccine is showing durable efficacy of 93% through six months, but recognize that the Delta variant is a significant new threat so we must remain vigilant."

In its second-quarter report, Moderna reported total revenue of \$6.3 billion for the first six months of this year of which net income was \$4.0 billion. Moderna performed at a net loss of \$(241) million for the same period in 2020.

According to the report, "Total reve-

nue increased in 2021, resulting from commercial sales of the Company's COVID-19 vaccine, and to a lesser extent, grant revenue."

The company expects dose capacity for its COVID-19 vaccine in 2022 to be between 2-3 billion doses.

The Lack of Vaccine Equity

The People's Vaccine Alliance states that Pfizer/BioNTeach and Moderna have sold over 90% of their vaccines to "rich" countries leaving as many as 70 countries with only one dose for every ten people, BBC reported. Their analysis found that rich countries have bought enough doses to vaccinate their population three times over. Canada, for example, has bought enough to vaccinate each Canadian five times, their report claims.

Since BBC's report, "rich" countries have begun to re-distribute a fraction of their excess doses to low-income countries but Ellen Johnson Sirleaf, former president of Liberia, and Helen Clark, former Prime Minister of New Zealand, expressed concerns in August that the rate is still slow-going.

While the profits made by the vaccines have made the CEO's of BioNTech and Moderna billionaires, less than one percent of people in low-income countries have received the vaccine as of July 2021.

Before the pandemic, low-income countries paid a median price of \$0.80 a dose for all non-COVID-19 vaccines, according to the World Health Organization (WHO). While every vaccine is different even the most affordable COVID vaccines, Oxford/AstraZeneca, is nearly four times more expensive, the Johnson and Johnson vaccine is 13 times higher, and the most expensive vaccines, Pfizer, Moderna, and the Chinese produced Sinopharm, are almost 50 times higher.

In a briefing published July, the People's Vaccination Alliance noted how both "poor" and "rich" countries have been potentially overpaying which in-

cluded the following points. According to the study, Pfizer/BioNTech charges the African Union \$6.75 per dose, nearly 6 times it estimates more than the potential production cost of this vaccine. One dose of the vaccine costs the same as Uganda spends per citizen on health (\$6.83) in a whole year.

The highest reported price paid for Pfizer/BioNTech vaccines was paid by Israel at \$28 a dose —nearly 24 times the potential production cost. The European Union may have overpaid for its Moderna and Pfizer/BioNTech vaccines by as much as €31 billion.

South Africa turned down Moderna's price tag of \$42 per dose. Colombia allegedly paid double the US price for Moderna vaccines. For Moderna and Pfizer/BioNTech combined, the country has potentially overpaid by as much as \$375 million.

Senegal, a lower-income nation, said it paid around \$4 million for 200,000

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each pet accurately. By applying these reading and writing skills, about 800 children who participated in the project helped find 600 shelter animals new homes.

Spruce Elementary now sponsors a kennel for dogs at PAWS. "We raise money to maintain the kennel and the kids create blankets and toys for the dogs that stay in it," Warmouth explains. Warmouth even adopted a PAW dog during COVID-19 Quarantine, whose name is Maeby, and was her "teaching assistant" during the 2020-21 school year.

The project not only improves students' academic skills but also helps them develop empathy by working with universally loved animals. For many students, this activity marks their first opportunity to improve the life condition of another being.

What She'll Do If Selected

Keeping her sites on empathy, Warmouth says that if she is selected and awarded the \$1 million prize, she "will use the funds to create an empathy focused learning lab academy for teachers, students, and families in our community."

Elaborating further on this aspiration, she says, "This will bridge together my classroom based teaching, university based instruction and research, and best practices in social and emotional learning to help nurture the next generation of critically thinking scholars and compassionate stewards of our planet."

In addition to being a second-grade teacher, Warmouth also holds a Ph.D. in Education Psychology: Human Development & Cognition. Her educational research seeks to understand how children develop empathy for one another, non-human animals, and their

shared environment. She is also an adjunct professor of literacy, a children's book author, and a National Geographic Grosvenor Teacher Fellow.

To learn more about Warmouth's work and the pet adoption project, visit globalteacherprize.org and education.

Other Engaging Projects

Of course, this is not the only engaging project Warmouth has designed. She has also created a silverware-patrol project in which students learned about plastic waste, ocean currents, and environmental responsibility. The project sparked interest among her students when Warmouth discovered plastic waste on the shores of the North Pole during her National Geographic Arctic Svalbard expedition.

According to Warmouth, the kids at Spruce also expressed great interest in polar bears leading up to, during, and following her Arctic expedition. This led to another hands-on project wherein students studied the life cycle, habitat, and threats to the survival of bears.

Eventually, the classes narrowed their focus to the local black bear population. "We learned that there were several orphaned baby black bear cubs receiving lifesaving care in the Wildlife Center at PAWS (just 1.5 miles from our school)," Warmouth recalls. This led students to participate in various fundraising activities to advocate for the release and rehabilitation of those

While each project is unique in that they address different real-world issues, they are all engaging and personally applicable to students. By tracing the students' interest to local issues, Warmouth is able to connect students with academic subjects through tangible and relevant activities. And as the topics are interesting to students, they become intrinsically motivated to research, study, learn and act. Finally, a motif throughout each project is Warmouth's knack for crafting curricula that help students develop empathy, whether for pets, the earth, or bears.

Warmouth's Teaching Philosophy

Warmouth's teaching philosophy recognizes and appreciates the individuality of students while also encouraging community building and camaraderie among them. "I embrace a whole-child approach to teaching that honors the funds of knowledge that each child brings into our classroom," she explains.

Warmouth's methods of engaging her students with meaningful learning experiences are continuously evolving. "My teaching practice is dedicated to exploring innovative pathways for inspiring and empowering my students through hands-on, project-based, and community-focused learning opportunities," she says.

"I connect with and engage my students through an integrative, interdisciplinary, and experiential approach to instruction that illuminates the interconnectedness between humans and environment, develops critical thinking skills, and calls for community action."

In a profession where it is easy to simply spoon-feed answers and information to students. Warmouth goes the extra mile to help them reach autonomy. As she explains, "I provide my students with the tools to connect with one another, investigate their environment, and advocate for change when they recognize injustice."

Congratulatory Statements

Spruce Elementary Principal Emily Moore spoke highly of Warmouth's ability to build strong relationships with her students and how she has impacted their lives through education. "Dr. Warmouth, former Spruce student and long-time Spruce teacher, brings a commitment to each of her students to provide learning experiences that are not just educationally rich, but founded in strong relationships with her students," she said.

"Through her work with PAWS and National Geographic, she has brought science into her classroom while simultaneously supporting efforts to save local animals and change the carbon footprint at our school," Principal Moore continued. "She is an exemplary individual who has made a huge impact on the lives of her students."

Edmonds School District Superintendent Dr. Gustavo Balderas says that the district is very proud to have such a phenomenal teacher in its ranks. "The Edmonds School District is extremely proud to have Jennie be recognized for the work that she has done to bring a hands-on approach to education," said Supt. Balderas.

"She is a model teacher that is homegrown being an Edmonds SD graduate. What Jennie is doing is the epitome of project-based learning, creating learning experiences that are hands-on that her students will always remember," he continued. "That is what great educators do, and Jennie is one our finest."

Another congratulatory statement comes from Sunny Varkey, the founder of the Varkey Foundation. Upon Warmouth successfully making the ranks of the final 50 in the contest, Varkey congratulated her, saying, "[Warmouth's story clearly highlights the importance of education in tackling the great challenges ahead – from climate change to growing inequality to global pandemics. It is only by prioritizing education that we can safeguard all our tomorrows. Education is the key to facing the future with confidence."

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doses for the Chinese vaccine Sinopharm, which equates to \$20 per dose.

The United Kingdom alone has potentially paid £1.8 billion more than the cost of production for its Pfizer and Moderna vaccines —enough money to pay every worker in its National Health Service (NHS) a bonus of more than £1000.

The Lown Institute in Boston gave Moderna one of its Shkreli Awards in January for the "Blatantly greedy COVID vaccine prices."

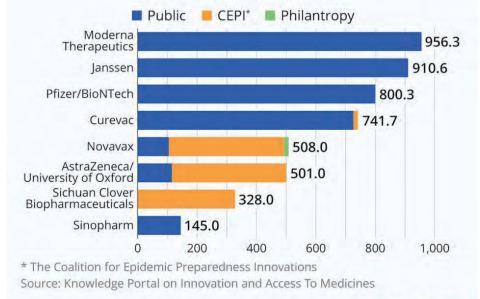
Government Funds that Paved COVID Vaccine Success

According to the Forbes article, Which Companies Received The Most Covid-19 Vaccine R&D Funding?, the United States and Germany have provided \$2 billion and \$1.5 billion respectively to pharmaceutical companies for COVID-19 vaccine research.

During a House Committee on Energy and Commerce hearing last summer, vaccine manufacturers were asked if they would sell their product at cost. Dr. Stephan Hoge, president of Moderna, told lawmakers that they would not sell their vaccine at cost despite receiv-



as of March 2021 (in million U.S. dollars)



ing \$955 million in U.S. funding.

The Boston-based company said last August it would charge between \$32 and \$37 per dose but the price would be adjusted depending on the amount ordered which may explain why different countries are paying different prices for vaccines.

Forbes

South Africa, for example, paid \$5.25 per dose in January for 1.5 million doses of the Oxford and AstraZeneca vaccine, more than twice what the European Union paid at \$2.15 per dose, a BMJ report states. As it stands, governments

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around the world are the only purchasers of the COVID vaccines.

AstraZeneca, like Moderna, also received hundreds of millions in government funding, upfront, for millions of doses. However, they made the promise last year not profit off their vaccine sales.

BioNTech, who developed the first authorized COVID-19 vaccine in the United States, received some \$800 million in R&D funding.

Pfizer, on the other hand, did not receive any government funding stating that they wanted to move as quickly as possible to get their vaccine into clinics. At the congressional hearing last summer, some House members raised concerns that Pfizer's rejection of federal funds could lead to price-gouging and lack of transparency, the New York Times reported.

COVID Vaccination Progress

As of October 12, a total of 6.56 billion doses of vaccine have been administered in 184 countries throughout the globe, according to Bloomberg. This equates to 42.7% of the world's population. Bloomberg reported 402 million doses of the vaccine have already been administered in the U.S. and 1.08 million doses have been given daily within the last week.