By **Leah Rosenbaum**

Photograph by **Christian Peacock** for Forbes

Health vs. Wealth

The world is awash in cheap antibiotics. So why is biotech billionaire **BOB DUGGAN** trying to make a new one—and how can he possibly make money from it?

B

Bob Duggan could easily have called it a career in 2015, after he sold Pharmacyclics, his cancer-drug biotech, to AbbVie. He was 71 years old and worth some $3 billion. He might well have retreated to his house in Costa Rica, with its giant mural of a green-eyed jaguar cub, and lived out the rest of his life on the beach, surfing and reading books about Scientology. But Duggan, now 76, rejects the idea of retirement. "It's indigenous in every human to want to make a difference, to exercise their ability and capability," he says. "It has nothing to do with age."

In April, Duggan became the CEO of Summit Therapeutics by buying more than 60% of

Scientific Scientologist

Summit Therapeutics CEO Bob Duggan has given more than $500 million to Scientology over the years but says he doesn't "introduce religion into business."

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the Nasdaq-traded company for about $63 million. Summit, which was founded in 2003 but has yet to post any meaningful revenue, is developing a new antibiotic for the common but deadly infection *Clostridioides difficile* (*C. diff*), which is spread by fecal matter and is often acquired in hospitals and nursing homes. *C. diff* itself causes extreme diarrhea and, in severe cases, organ failure and death. Every year almost a quarter-million Americans are infected with *C. diff,* and 13,000 die.

It's a noble place for Duggan to try to make a difference, but it's also a difficult one. Nobody disputes that antibiotics are one of the great success stories of the 20th century. Before penicillin was discovered in 1928, infectious diseases were the leading cause of death in America, and life expectancy at birth was just 58 years. Antibiotics changed everything. With cheap treatments widely available for everything from tuberculosis to pneumonia, a child born in Cleveland yesterday can expect to live to be nearly 80.

But there are two main problems with antibiotics today. First, the economics: There are a lot of different antibiotics already on the market, almost all inexpensive generics. Amoxicillin, for instance, was introduced in 1973 and is one of the most commonly prescribed antibiotics in the world. Off-patent for decades, it now costs less than a dollar per pill and is highly effective. Given that it takes about $1.3 billion to develop a new drug, hardly anyone is even trying to make novel antibiotics anymore. There's no easy way to recoup the expense.

Compounding the difficulty is a scientific problem. Bacteria mutate and evolve quickly. That means the bacterial strains that are resistant to being killed by a specific antibiotic survive and spread. To treat patients infected with bacteria resistant to a certain antibiotic, a different one needs to be administered. Therefore, when a new antibiotic is finally developed, "doctors reserve it for very severe cases because of resistance," says Samir Devani, the founder of Rx Securities, a life sciences–oriented investment bank based in London. "What that means commercially is that these new antibiotics get put in the cupboard, and they're not used."

The result: Antibiotic development is usually not worth it for big pharma companies, and the small firms that still develop them are struggling. Two of Summit's peers, Achaogen (of which Duggan owned a 15% stake) and Melinta Therapeutics, filed for bankruptcy in the past 18 months. Only 25 new antibiotics have been approved over the last 20 years, most of which are derivatives of existing drugs.

None of this deters Duggan, a committed Scientologist with a history of investing in underdogs and coming out on top. He started investing in his early 20s while studying business administration at UCLA. "I started my investment career with about $5,000," he says, "and within a year and a half I had half a million dollars." One of the first companies he invested in was Sunset Designs, the maker of Jiffy Stitchery needlepoint kits, which was sold to British consumer-goods giant Reckitt Benckiser Group for $15 million in the mid-1980s. Next came investments in a bakery chain, an ethernet firm and a business that designed robotic surgical instruments. In 2008, Duggan became the CEO at Pharmacyclics, a penny-stock biotech.

Then, finally, the billion-dollar break. A drug in Pharmacyclics' pipeline, Imbruvica, turned out to be a blockbuster treatment for B-cell cancers, including chronic lymphocytic leukemia (CLL), one of the most common forms of leukemia in adults. That led directly to the $21 billion acquisition by AbbVie.

As at Pharmacyclics, the fate of Summit lies in one drug: ridinilazole, a new antibiotic for treating *C. diff* which is being tested head-to-head against the generic gold standard, vancomycin. In a recent Phase 2 clinical trial, ridinilazole was found to be not only superior to vancomycin in treating *C. diff,* but also possibly able to prevent recurrence of disease. If Summit can prove that ridinilazole not only treats but also prevents illness better than the best current option, hospitals could charge a premium for the drug.

Alan Carr, a biotech analyst at Needham, thinks that if any new antibiotic has a shot at success, ridinilazole may be it. "There is a fairly attractive market opportunity for *C. diff,*" Carr says, noting that the price for ridinilazole will likely be higher because it is a pill, not an intravenous drug, which means it can also be prescribed to patients outside a hospital. But "I don't think it's a billion-dollar drug. I think it can be a few hundred million, but I don't think it's a blockbuster."

For Duggan, it all boils down to the simplest wisdom: "How can you *not* make money if you deliver what patients need?"

HOW TO PLAY IT

by William Baldwin

Drug development is hazardous, because most novel therapies flop and politicians are aching to crack down on the crazy pricing of the few that succeed. A more sedate way to make money: Run clinical trials and do other contract work for pharmaceutical companies. **Syneos Health** gets $4.5 billion of annual revenue that way. Two negatives are an impairment of operations during the pandemic and the recent decision by two private equity backers to unload shares. The positives include a growing order backlog and a reasonable price: The enterprise value is 10 times likely 2021 earnings before interest, taxes and amortization.

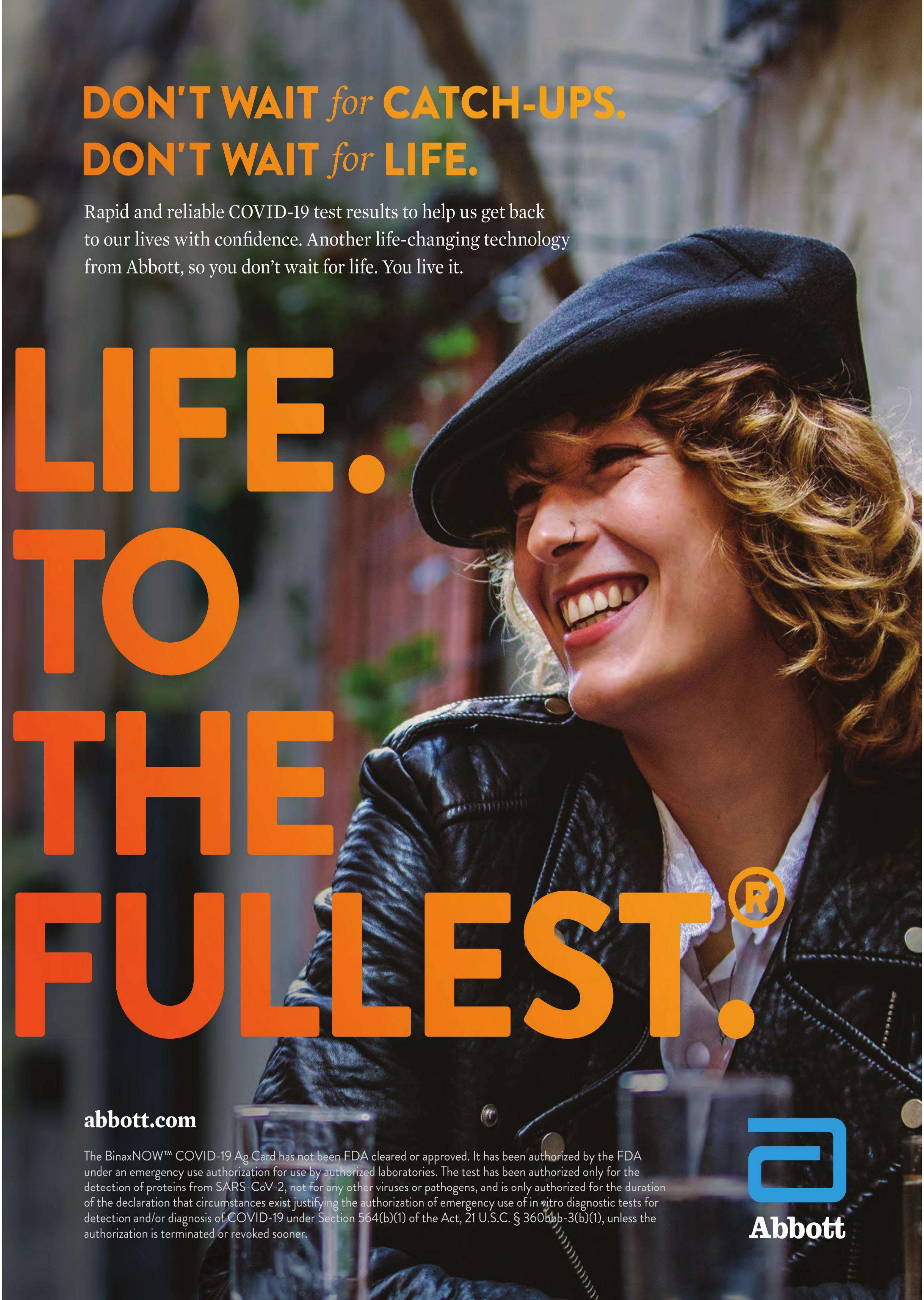
William Baldwin is Forbes' Investment Strategies columnist.

FINAL THOUGHT

"DISEASES DESPERATE GROWN BY DESPERATE APPLIANCE ARE RELIEV'D, OR NOT AT ALL."

—William Shakespeare

PATRICK WELSH FOR FORBES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Abbott

By **Alex Konrad**

Photograph by **Timothy Archibald**

The Remote-Work Absolutist

GitLab CEO SID SIJBRANDIJ built a developer-tool business valued at nearly $3 billion without maintaining any offices. Now he's warning companies against doing telecommuting halfway.

Sid Sijbrandij knows the perils of working from home. In 2018, after years of toiling exclusively from a small room in his 47th-floor apartment in a San Francisco high-rise, the entrepreneur developed foot problems. So he moved in a treadmill desk alongside his Zoom-friendly green screen and three monitors.

But GitLab's CEO says the problem isn't remote work, but how it's practiced. Unless you're employed by one of the handful of companies that have fully embraced the new work reality, Sijbrandij (pronounced *see brandy*) thinks you're probably doing it wrong. His radical take on remote work: It's effective only if you go all in. Partial measures will create tiers of employees who will split the workforce over time, driving away top-performing remote workers who don't want to compete with lesser-achieving on-site colleagues. "We'll see some companies . . . go back [to the office] and try to make the best of it, and I think they'll struggle," he says.

How GitLab does it: The only time staffers meet in person is for the company's annual all-hands

Evangelist

"I thought we would spend the next 10 years convincing the world how to do remote better," says Dutch native Sid Sijbrandij, 41. "Instead, Covid did it within months."

gatherings, held (in pre-Covid times, anyway) in lively and relatively cheap locations like Greece. Another pillar of GitLab's remote-work absolutism: radical transparency. It publishes a public online handbook detailing how it approaches pretty much any topic. You won't find individual employees' salaries, but you will find its executives' strategic objectives for the current quarter and the exact formula for calculating wages in the 67 countries in which GitLab staff live, from Kenya to Morocco to Serbia. (There's also a section on how and when to talk to Sijbrandij, and one on his cat.) Anything not in the handbook, which would run to 8,400 pages if printed, is likely in an internal Google Doc. Every meeting at GitLab has at least one companion online doc.

Sijbrandij also relies heavily on documentation to allow GitLab staffers to work seamlessly. Employees update docs and take notes, or share information asynchronously in Slack channels and video messages. Resolved decisions or plans get merged into the handbook, which tracks it all. "Every time you have to wait for permission or sign-off for someone else to do something, that's a problem," he says.

He has built one of the world's most valuable startups, valued at $2.8 billion in 2019, without maintaining offices for any of its 1,300 far-flung employees. It helps that GitLab—which provides a suite of software tools that help developers build, manage and secure their apps—plays in a high-tech category that's even more important as businesses push sales and customer interactions online.

Even among other pre-pandemic no-office high-fliers—notably Automattic, the company behind WordPress—Sijbrandij has long stood out. "We are probably not as extreme as Sid is," says Dave McJannet, CEO of remote-only cloud infrastructure startup HashiCorp, valued at $5 billion. Today, though, Sijbrandij's radicalism is drawing a vast following. Downloads of GitLab's free e-book on remote work have exceeded 70,000 since its March release; employees are in high demand for webinars.

GitLab's own globetrotting setup got its start in Europe. Sijbrandij had worked at a submarine company and helped run an online app-review startup on the side when, while managing web projects for the Dutch Ministry of Justice, he came across an open-source project from Ukraine called GitLab with hundreds of volunteer contributors.

In 2012, he reached out to its creators, Dmitriy Zaporozhets and Valery Sizov, telling them he was going to build a business atop their project. A year later, Zaporozhets joined as cofounder and CTO; he is now an engineering fellow. Sizov joined in 2014 and is a senior developer. Sijbrandij set about building GitLab the company—named after Git, a popular system for tracking changes in source code—to sell subscriptions to software tools that help manage projects built on the open-source tech. Sijbrandij, Zaporozhets, Sizov and six others got together temporarily in California in early 2015 to participate in the prestigious startup accelerator Y Combinator—the only three months they've ever spent working in the same space.

Most of GitLab went back to Europe afterward. Sijbrandij, enamored of the startup scene and with an eye to fundraising, stayed behind. Today, GitLab has raised $476 million, most of which is still on its balance sheet; it sells a suite of 10 different app tools, from development to security, for up to $99 per user per month, bringing in over $75 million in revenue last year from more than 15,000 customers, including Nvidia, Siemens and Goldman Sachs, which later invested.

The trend of companies moving their operations online, especially since the start of the pandemic, has pushed even more development to the cloud, meaning business is booming. But customers are increasingly likely to call not for software support, but rather a crash course in how GitLab runs its business.

"Ten to 15% of our engagement with partners is helping them see how we do things," says Michelle Woodward Hodges, GitLab's vice president of channel partnerships.

Not everything is rosy about remote work, especially now. Sijbrandij is quick to note that he has struggled with not being able to travel; parents on his staff have faced extra child-care demands. GitLab has sought to address that through Friday holidays and has encouraged staycations. "It's important for everyone to remember that this is not work from anywhere, this is working from home during a pandemic," Sijbrandij says. "This is not normal times."

One irony of spreading the remote-work gospel: More companies following GitLab means its secret is out. "We've had an advantage where if you were outside a metro area, there were few options to join a fast-growing company. We're going to have a ton more competition now, and that's going to drive wages up," Sijbrandij says. "I think that's a great thing for the world. I'm super looking forward to that."

HOW TO PLAY IT

By Jon D. Markman

Microsoft is the best way to play the rise of software developer tools. The enterprise software giant in 2018 purchased GitHub, an open-platform competitor to GitLab. The $7.5 billion all-stock acquisition gave Microsoft access to the Linux community, a showcase for its own developer tools and services and a way to monetize the developer community. In the fiscal year ended June 30, 2019, its Intelligent Cloud division, where GitHub landed, reported $39 billion in revenue and $13.9 billion in operating income, gains of 21% and 20.9%, respectively. Although Microsoft shares are up roughly 28% in 2020, company outreach to developers and the growth of its cloud business could lift the stock to $290 in a year, a gain of 41% from current levels.

Jon D. Markman is president of Markman Capital Insight and the editor of Fast Forward Investing.

FINAL THOUGHT

"IF YOU'RE NOT GONNA GO ALL THE WAY, WHY GO AT ALL?"

—Joe Namath

PARTRICK WELSH FOR FORBES

By **Antoine Gara**

Photograph by **Eli Warren**

The Prophet and Her Profits

CATHIE WOOD has leveraged her zealous belief in innovation into a $29 billion-in-assets investment firm and a $250 million net worth. Among her predictions: Tesla will build a fleet of robo-taxis worth $1 trillion.

T

Tesla shares were limping along around $200 in May 2019, about where they had traded five years earlier, when Elon Musk's biggest Wall Street booster tried a gutsy experiment. Cathie Wood and her Ark Investment Management were already well-known for their way-out-there predictions that Tesla would build a fleet of robo-taxis worth $1 trillion and that its shares would soar 20- or 30-fold by 2023. Now she stirred the pot again by publishing online Ark's new bull's-case valuation of $1.4 trillion, implying a share price above $6,000, complete with every Excel calculation and assumption behind those estimates.

Criticism came fast and furious. Tesla short seller Jim Chanos, famed for uncovering Enron's fraud, took Wood to task over Ark's forecasts of Tesla's gross margins. "[W]hat Ark has produced is a forward pricing for Tesla, not a valuation," sniffed valuation expert Aswath Damodaran, a finance professor at New York University. The model, he noted, didn't include a discounted cash-flow analysis and carried incomplete forecasts on the costs Tesla

WFH Winner

As the pandemic took hold, Cathie Wood loaded up on tech stocks that she correctly predicted would lead the recovery—and bought herself a house in ritzy Hilton Head, South Carolina, from which to work.

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would incur to scale its vehicle production. That $1 trillion value Ark was placing on Tesla's non-existent robo-taxi fleet? "Strikes me as more fairy tale than valuation," Damodaran opined.

Sixteen months later, Tesla shares—after a five-for-one August stock split—were trading at $400. In other words, they'd risen tenfold, driven up by speculation and excitement over Musk's autonomous-driving and battery technologies and Tesla's stronger-than-expected financial performance. Musk's car company is now worth five times more than Ford and General Motors combined, and Wood has made a fortune. The nitpicking skeptics, she believes, have missed the big picture: As electric cars go increasingly mainstream, production efficiencies and advances in batteries and other technologies will cut what it costs to make them. And as sticker prices fall, demand will surge, including from businesses like ride-sharing companies. In September, Musk promised a $25,000 car within three years.

Meanwhile, Wood, 64, is perfectly happy to have a chorus of critics: "It almost makes me feel comfortable, to be honest, because it means if we're right, then the rewards will be pretty enormous."

Wood's comfort with going her own way has helped her turn Ark into one of the fastest-growing and top-performing investment firms in the world. Its flagship $8.6 billion Ark Innovation Fund is up a staggering 75% in 2020 and has returned an annual average of 36% over the past five years, nearly triple that of the S&P 500.

While most star stock pickers treat their work like state secrets, Wood makes Ark's research freely available online and posts real-time logs of her firm's trades. Instead of hiring MBAs, she prefers to bring onboard young analysts with backgrounds in subjects like molecular biology or computer engineering, figuring they're more likely to spot the next trend. Even the structure of Ark, an acronym for Active Research Knowledge, is original. Wood manages seven portfolios designed to capitalize on breakthroughs in robotics, energy storage, DNA sequencing and financial and blockchain technology, and makes them available to investors, particularly Millennials trading on Robinhood, as tax-efficient exchange-traded funds.

Its Tesla position and a pandemic that has accelerated adoption of the technologies embedded in the 35 to 55 companies in each Ark ETF have helped its assets nearly triple in 2020, to $29 billion. "Coronavirus has catapulted our innovative platforms into high gear because they solve problems," Wood says. "Innovation solves problems."

Forbes conservatively values Ark at $500 million, or about 2% of assets under management, roughly the same multiple as publicly traded T. Rowe Price commands. Wood's 50%-plus ownership gives her a net worth of $250 million, good for the No. 80 spot on *Forbes'* sixth annual list of America's Richest Self-Made Women *(page 112)*.

It's easy to dismiss Wood as the face of a stock-market bubble created by the Federal Reserve's easy-money policy. But she has survived her share of both bubbles and bear markets. While an economics student at the University of Southern California, she studied under supply-side guru Arthur Laffer and apprenticed from 1977 to 1980 at Los Angeles fund giant Capital Group, watching as interest rates approaching 20% crushed the economy and the market. After graduating in 1981, she joined Jennison Associates, now an equity investment arm of Prudential, as an economist in New York. There she made an early call that inflation and interest rates had peaked. That garnered eye rolls from her superiors, but Wood was right—and the experience inculcated in her an appreciation for the potentially big upside of going against consensus.

Frustrated with her career path at Jennison and wanting to research individual companies, one Friday Wood up and quit. Her mentor at the firm persuaded her to return the following Monday and moved her into equity research. She covered na-

How To Play It

LOADED ON THE ARK

Cathie Wood's ETFs bet on big ideas and industry disruptors. Here are some of her top holdings.

ETF	Stock	1-Year Gain	Bullish Case
ARKK (Innovation)	Invitae Corp.	109%	Genetic-testing innovator could cut health-care costs.
ARKW (Next-gen internet)	Roku	68%	Consumer operating system for streaming media.
ARKQ (Robotics)	Proto Labs	26%	3D printer lowering costs in industries like aerospace.
ARKG (Genomics)	CRISPR Therapeutics	81%	Gene editor developing treatments for cancer and diabetes.
ARKF (Fintech)	Square	165%	The payment processor is becoming a digital bank.