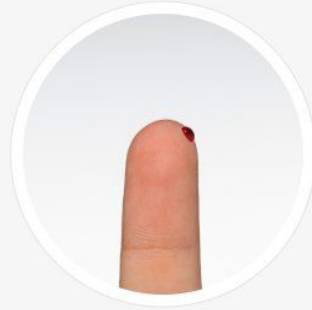


NANOTAINER

The tiny blood test.



no big needles.



just a tiny sample.



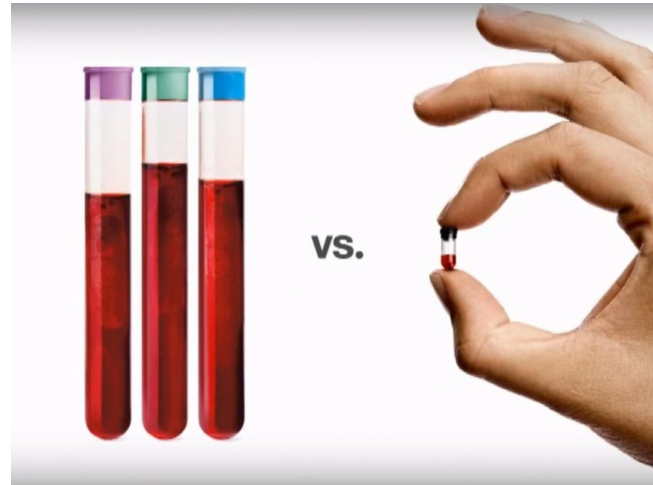
the new way.



Theranos
UDLS Oct 12, 2018
Neil Newman

tl;dl (Too Long, Didn't Listen)

- Revolutionary blood test machine
- Raised tons of money; lots of hype
- Unable to deliver
- Pretended everything going great
- Knowingly delivered unreliable blood test results
- Brought down through investigative journalism
- For an abridged account, see [comic](#)



CAITLIN ROPER, SCIENCE 02.18.14 01:30 PM

**THIS WOMAN INVENTED A WAY
TO RUN 30 LAB TESTS ON ONLY
ONE DROP OF BLOOD**

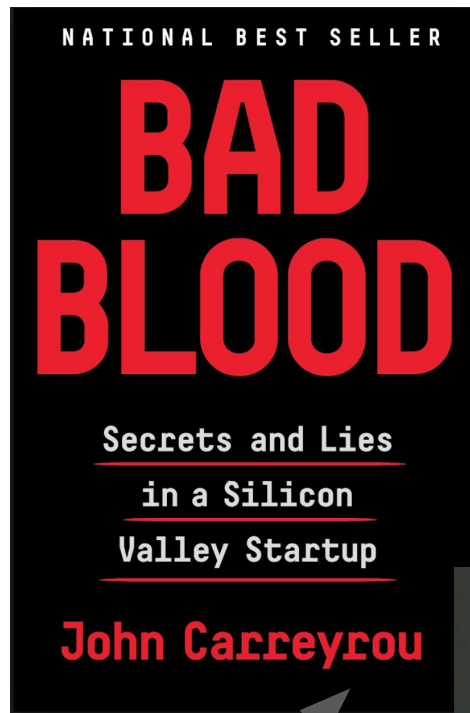


Main Source

“...based on hundreds of interviews with more than 150 people, including more than sixty former Theranos employees.”

Elizabeth Holmes declined to be interviewed

Two time Pulitzer Prize Winning Investigative Journalist for the Wall Street Journal



Elizabeth Holmes

- Born 1984
- Wealthy, well-connected background
- Studied Chemical Engineering at Stanford
- Dropped out at 19 to found Theranos with a PhD student
 - Channing Robertson (head of Chem Eng) on the Board
- Remarkably deep voice
- Ramesh "Sunny" Balwani boyfriend / VP
 - Born 1965



Steve Jobs Worship

- Signature black turtleneck
- Called Theranos "the iPod of healthcare"
 - Nicknamed machine the "4S"
- Used advertising agency Chiat\Day (same as Apple)
 - Scheduled meetings on Wednesdays (same as Apple)
- Security detail with no license plates
- Mimicked management techniques described in Steve Jobs biography



IN 2013, THERANOS INKS A DEAL TO PUT ITS "WELLNESS CENTERS" IN WALGREENS PHARMACIES, MOSTLY IN ARIZONA. LATER, THERANOS HELPS PUSH THROUGH A BILL GIVING ARIZONANS THE RIGHT TO ORDER THEIR OWN BLOOD TESTS.



FLYING HIGH

Business & Tech Media Take Notice!

2014

"I CAN BUY A TANK ... BUT I CAN'T ORDER A BLOOD-BASED PREGNANCY TEST."



HOLMES WAS A DISRUPTOR WHO EVANGELIZED ABOUT PATIENT SELF-EMPOWERMENT.



theranos HAS 500 EMPLOYEES & IS VALUED AT

\$9 BILLION

BY FORBES.

THE MAGAZINE SAYS ELIZABETH HOLMES IS WORTH...



Questionable Practices at Theranos

- Secretly modified commercial analyzers
- Faked “live” demos with pre-programmed responses
- (Obvious) statistical issues
- Blatant lies (inflating numbers, unsubstantiated claims)
- Laboratories hidden from inspectors

Culture of Fear

- Reading emails
- Physical surveillance
- Tracking hours
- Legal threats
- Information siloing - little contact between teams to protect “trade secrets”
- Ian Gibbons

The Tip

- Adam Clapper, a pathologist, reads a New Yorker profile of Elizabeth Holmes
- Skeptical of dodgy paper cited
- Posts skepticism on *Pathology Blawg*
- Disgruntled parties reach out with encouragement
- Clapper contacts Carreyrou at the WSJ

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BUSINESS



Hot Startup Theranos Has Struggled With Its Blood-Test Technology



Silicon Valley lab, led by Elizabeth Holmes, is valued at \$9 billion but isn't using its technology for all the tests it offers



By [John Carreyrou](#)

211 COMMENTS

Updated Oct. 16, 2015 3:20 p.m. ET



On Theranos Inc.'s website, company founder Elizabeth Holmes holds up [a tiny vial to show](#) how the startup's "[breakthrough advancements have made it possible](#) to quickly process the full range of laboratory tests from a few drops of blood."



Most Popular Videos

1. What We Know About the Missing Saudi Journalist Jamal Khashoggi



2. Markets Analysis: Three Reasons the Fed



Denial



Theranos Fights Back

- Threatened doctors and former employees that Carreyrou interviewed
- Published positive articles in the Wall Street Journal
- Got Rupert Murdoch (controls WSJ) to invest \$125 million in Theranos (biggest investor)
 - When presented with the conflict, Murdoch said he “trusts the papers editors to handle the matter fairly”
- Tyler Shultz

The Toll

- Stopped before Theranos scaled out to all Walgreens
- 1 million blood test results voided
 - A lab manager said that voiding all ~7.5 million would have been safer
- Hard to determine exact harm
 - 10 patients at time of book writing filed additional lawsuits. One patient claims a preventable heart attack.
- Many anecdotes of doctors using judgement and not blindly following tests

Criminal Charges (In Progress)

...ON MARCH 14, 2018, THE SEC CHARGED THERANOS, ELIZABETH HOLMES AND FORMER EXECUTIVE SUNNY BALWANI WITH "MASSIVE FRAUD."



HOLMES HAS AGREED TO GIVE UP CONTROL OF THE COMPANY, PAY A \$500,000 PENALTY AND IS BARRED FROM SERVING AS AN OFFICER OR DIRECTOR OF A PUBLIC COMPANY FOR 10 YEARS.

THERANOS STILL FACES A CRIMINAL INVESTIGATION BY THE U.S. ATTORNEY FOR NORTHERN CALIFORNIA.

How Did Theranos Fool So Many People?

- Elizabeth Holmes' strong personality
- A story you want to believe
- Didn't go after smart money
- Lies and intimidation
- Network effect of prior investors snowballed



Explaining Elizabeth Holmes

“A sociopath is often described as someone with little or no conscience. I’ll leave it to the psychologists to decide whether Holmes fits the clinical profile, but there’s no question that her moral compass was badly askew. **I’m fairly certain she didn’t initially set out to defraud investors and put patients in harm’s way when she dropped out of Stanford fifteen years ago [...] But in her all-consuming quest to be the second coming of Steve Jobs [...] there came a point when she stopped listening to sound advice and began to cut corners.** Her ambition was voracious and it brooked no interference. If there was collateral damage on her way to riches and fame, so be it.”

- John Carreyrou

Legacy on Female Entrepreneurship

Forbes

Billionaires

Innovation

Leadership

Money

Consumer

Industry

Life

6,155 views | Mar 21, 2018, 08:05am

Is Our Obsession With Women In STEM To Blame For Theranos?



Nicole Fisher Contributor ⓘ

Pharma & Healthcare

EXPLAINED DEEPLY—BY MEN

Jennifer Lawrence

Jennifer Lawrence to play Elizabeth Holmes in movie about Theranos

Lawrence will portray the founder of the embattled biotech firm that was once valued at \$9bn before journalists demolished many of the company's claims

