

UNITED STATES DISTRICT COURT FOR THE  
SOUTHERN DISTRICT OF NEW YORK

UNITED STATES OF AMERICA,

Plaintiff,

vs.

JAMES JEREMY BARBERA,

Defendant.

Index No.: 21-CR-154 (JGK)

**MEMORANDUM OF LAW IN AID OF SENTENCING**  
**ON BEHALF OF JAMES JEREMY BARBERA**

November 6, 2022

Eric M. Creizman (EC7684)  
Melissa Madrigal (MM0200)  
Armstrong Teasdale, LLP  
7 Times Square, Fl. 44  
New York, New York 10036  
T: (212) 972-0200; (212) 972-0201  
E: [ecreizman@atllp.com](mailto:ecreizman@atllp.com)  
[mmadrigal@atllp.com](mailto:mmadrigal@atllp.com)

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We respectfully submit this memorandum in advance of Jeremy Barbera's sentencing hearing scheduled for November 21, 2022, at 10 a.m., to assist the Court in fashioning an appropriate sentence that is sufficient, but not greater than necessary, to achieve the objectives of federal sentencing under 18 U.S.C. § 3553(a).

In this sentencing memorandum, we discuss Mr. Barbera's personal and employment history, describe his genuine efforts to develop and commercialize the Nanobeak breathalyzer sensor; his subsequent efforts with Go Blue Biotech, Inc. (now Blu Biotech Inc.) to develop and commercialize a portable breath analytics device to detect COVID-19, lung cancer, and colorectal cancer, which, in clinical trials, has demonstrated promising results; an analysis of the applicable Guidelines calculation; and an analysis of the sentencing factors under Section 3553(a).

### **RELEVANT FACTUAL BACKGROUND**

#### **I. Jeremy's upbringing in New York City.**

Jeremy Barbera was born in New York City in 1956 and lived with his parents in the Morris Heights section of the Bronx. He was raised in a religious home and attended Catholic schools through high school. During Jeremy's early childhood, his father, James, was a TV repairman while his mother, Laura, took care of the home. Jeremy developed an interest in engineering and technology at a young age. For example, when Jeremy misbehaved, James would take apart the family television or radio and tell Jeremy that he had to figure out how to put it back together. For his eighth-grade science fair project, Jeremy built a rocket with James' help.

While Jeremy's family was living in the Bronx, his father attended Fairleigh Dickinson University at night and ultimately obtained an engineering degree. With his father working

during the day and attending school at night, Jeremy was raised primarily by his mother.

Although Jeremy enjoyed a close relationship with his father, he found his mother to be distant and withdrawn. Indeed, Laura struggled throughout her life with mental health issues and with alcoholism.

After graduating from Fairleigh Dickinson, James found employment with Hewlett Packard as an electrical engineer. His higher salary allowed the family to move from the Bronx to an apartment in the Stuyvesant Town middle-income residential development complex. As James' career at Hewlett Packard advanced, he was required to spend increasingly more time in its Boston offices. From the time that Jeremy was a teenager until he left his parents' home, James lived in Boston during the week and returned home on the weekends. Jeremy enjoyed spending whatever limited time he had with his father. On weekends, James would sometimes take Jeremy to Yankees games and do other normal father-son stuff. But the times with his father that Jeremy enjoyed the most was when James talked to Jeremy about what he was doing at work, and James often showed Jeremy what he was working on.

For example, James worked on the Hewlett Packard team that developed one of the first electrocardiogram machines. During that time, James would take the machine home on weekends to debug the hardware. With Jeremy by his side, James would take the machine apart and put it back together. A few years later, when James joined AT&T, he taught Jeremy how to build a computer. Jeremy developed a strong connection with his father through interactions like these, and he became more interested in learning what he could from James than anything he learned in school.

## **II. Jeremy's adolescence and struggle with formal education.**

Although Jeremy was bright and intellectually curious, he was a disengaged and unmotivated student. He found the classroom environment stifling. He felt no pressure from his parents to achieve in the classroom because they were not involved in his formal education. Indeed, James generally was out of town, and Laura showed little concern for Jeremy's academic pursuits. Nevertheless, Jeremy was a voracious reader, especially about the subjects he cared about, like science and computers. An autodidact, Jeremy mastered the subjects of physics, analytical chemistry, computer programming, and aerospace engineering to the point where, by the time he was a college student, he could speak fluently about those disciplines even with graduate students and college professors.

Jeremy developed an entrepreneurial mindset during his teenage years. In order to earn spending money, Jeremy offered to perform odd jobs for neighbors. He also ran a paper route. His most memorable job, however, was working for Lincoln Center. Jeremy was assigned to operate a t-shirt stand. When t-shirt sales were lagging, Jeremy suggested a design that ended up being a best-seller. He continued to work for Lincoln Center during high school and part-time during his years in college. While working at Lincoln Center, Jeremy made contacts in the arts and entertainment community that would later be very beneficial to his career.

## **III. Jeremy's college years and work at NASA's Goddard Institute of Space Science.**

Jeremy enrolled at Pace University in Lower Manhattan in the Fall of 1974. Just like he was in high school, Jeremy continued to be an unmotivated student and an underachiever, finishing the Spring semester with a 2.75 grade point average. After his unimpressive academic performance, Jeremy thought that he might improve his grades by attending a college program that offered courses on the subjects in which he was most interested. He was particularly

captivated by the field of astrophysics and dreamed of working for NASA. Consequently, Jeremy transferred to NYU for the Fall semester of 1975 to begin a dual degree program during which he would earn credits towards a Bachelor of Science and a Master's Degree in astrophysics. Ultimately, the program was too ambitious for Jeremy as he lacked the ability to focus in the classroom setting.

During his junior year, Jeremy met with his advisor, Dr. Michael Ghil, who had just completed his Ph.D. in Mathematics and was serving as a research professor at NYU's Courant School of Mathematical Sciences. Dr. Ghil was about to begin working as a research scientist at NASA's Goddard Institute for Space Science ("GISS") located near Columbia University. Jeremy told Dr. Ghil about his interest in working for NASA, and Dr. Ghil arranged for Jeremy to get an internship there. Jeremy's initial role at GISS involved assisting Dr. Ghil with data analytics. As Jeremy continued his internship at GISS, he finally felt that he had found an educational experience that stimulated and challenged him. As a result, Jeremy decided to suspend his studies at NYU and pursue a full-time position at NASA.

While working full-time for NASA, Jeremy was assigned to a team led by Dr. James Hansen, who was researching the process now referred to as the Greenhouse Effect. Dr. Hansen was building a theoretical model to evaluate whether the Earth's climate was warming. In working on this project, Jeremy studied weather data going back to 1755 and calculated monthly changes in temperature. Dr. Hansen's team ultimately proved that the Greenhouse Effect was a



real phenomenon. During an interview of Dr. Hansen many years later in 2000 by the American Institute of Physics, he specifically recalled Jeremy's contribution to the team.<sup>1</sup>

Jeremy's work with Dr. Hansen focused on providing research findings related to the effect of volcano eruptions on climate change. The publication of an article in the *Journal of Volcanology and Geothermal Research* co-authored by Stephen Self, then a NASA Research Fellow at GISS, and Michael Rampino, then an Associate Research Scientist at GISS, marked the culmination of Jeremy's years of research. In recognition of Jeremy's contributions to the article, Dr. Self and Dr. Rampino added his name to the by-line.<sup>2</sup>

#### **IV. Jeremy's work in the arts and entertainment industry.**

In approximately 1983, Jeremy left NASA and pursued a career in the entertainment industry. Using the data analytics skills he developed at NASA, his expertise in computer programming, and drawing on his contacts within the New York arts and entertainment community, Jeremy started an independent consulting business providing market research and data analytics to theatre and entertainment production companies. Jeremy created algorithms to identify target markets for events such as Broadway shows and concerts. American Express and Lincoln Center were among his largest clients.

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<sup>1</sup> See *Oral Histories, James Hansen - Session II*, American Institute of Physics, Interview date: Nov. 27, 2000 (Ex. 8) at 12 of 26.

<sup>2</sup> See DX 105, Stephen Self, Michael R. Rampino, and James J. Barbera, *The Possible Effects of Large 19<sup>th</sup> and 20<sup>th</sup> Century Volcanic Eruptions on Zonal and Hemispheric Surface Temperature*, JOURNAL OF VOLCANOLOGY AND GEOTHERMAL RESEARCH, Vol. 11, 41-60 (1981).

Jeremy's work in this area generated substantial attention within the arts and entertainment industry. On one fateful occasion, Jeremy was invited to speak to a "Marketing in the Arts" class at NYU as a guest lecturer, in which his future wife, Claudia Goddard, was a student. Claudia was captivated by Jeremy's presentation, as she recounts in her letter to the Court:

At the time, he was the head of a marketing firm that handled theatres, symphony orchestras, museums, etc. He talked about his humble beginnings selling T-shirts at Lincoln Center when he was a teenager (while also doing research at NASA's office on West 112<sup>th</sup> Street) and his subsequent journey in learning how best to market for the arts—and especially how to harness newfound computer capabilities to fill those seats at the opera, ballet, Broadway, and dance. His prowess with computers and science, yet using it to service the arts, was fascinating to me.

Letter from Claudia Goddard (Ex. 1), at 1.

**V. Jeremy's family life with his wife, Claudia, and their daughters, Wynona and Chloe.**

Claudia applied for a job with Jeremy's marketing company and was hired upon graduating from NYU in 1987. They began dating a year later. According to Claudia, "[i]t was a lovely time in our lives—enjoying each other's company while experiencing the very best that New York City has to offer—going to lots of theater and music and dancing, biking all around the City, trying to get him to try new foods . . . and rescuing dogs and cats." Ex. 1 at 1.

Jeremy and Claudia married in 1991. They have two daughters: Wynona, who was born in 1992, and Chloe, who was born in 1999. In 2001, Jeremy and Claudia separated amicably.

As Claudia describes in her letter to the Court, Jeremy remained close friends with Claudia and took an active role in raising their children:

From the start he decided to always live within 10 blocks or so from us on the Upper West Side. Because he was a workaholic—I became a stay-at-home mom and we decided the girls would live with me full time and he could see them as often as he liked, which was often. We may have lived ten blocks apart, but we raised these precious girls together. Every important decision, we made together. He worked extremely hard to afford to keep

the girls in their beloved home. He attended every school concert, every dance recital, every show at their schools. He took them to live music, theater, movies, the zoo and every now and again we would rescue another animal. A highlight for the girls every year with Jeremy was to attend Comic-Con—spending weeks plotting the costumes and planning which discussion panels to attend. For every birthday and every Thanksgiving and Christmas, Jeremy joins us for [the] family meal and later when he re-married, she came too. If there was ever a problem he would be at our house in mere minutes—helping out.

*Id.* at 2.

Jeremy remains an involved and caring parent to both of his daughters. Wynona, now 30, observes in her letter to the Court that despite her parents' separation, "I often consider myself one of the lucky ones, because two parents have never worked harder to keep my sister and I as happy and healthy as possible through their decision to divorce." Letter from Wynona Barbera (Ex. 2), at 2. Wynona credits Jeremy for teaching her the virtue of helping others, and he did so not by lecturing her, but by example. According to Wynona, Jeremy instilled the "feeling that if I am blessed to have life on this earth, then I must use that blessing to help impact it for the better." *Id.* at 3.

Chloe, now 23 years old, echoes Wynona's sentiments. One of Jeremy's traits that especially has impressed Chloe is Jeremy's genuine concern for animals:

I remember vividly that when Hurricane Sandy hit New York, we were housing evacuated families in our apartment, and he wondered if he could help the animals too. He explained that Peter Cooper Village, the area where my grandmother lived [and where Jeremy grew up], has a large population of squirrels that rely on the residents to feed them. He said with sorrow, "all the residents evacuated days ago. The squirrels must be starving." He had recently carried my grandmother down 8 flights of stairs in her wheelchair to get her to safety during the power outage. The next day, when the rain had died down he bought 5 gigantic packages of peanuts for the squirrels. We went out and fed squirrels for the entire afternoon.

Letter from Chloe Barbera (Ex. 3), at 2.

The letters that Claudia, Wynona, and Chloe have written to the Court each focus on Jeremy's active involvement in their lives, the kindness and care he provided to his mother

throughout her life, his tireless work ethic, and his commitment to improving and enriching the lives of others.

**VI. Jeremy launches MSGI, and transforms a small, privately held company into a public company with \$128 million in revenue and over 2000 employees.**

In 1988, Jeremy founded Marketing Services Group, Inc., also known as “MSGI,” with no outside capital. MSGI provided data analytics and integrated marketing solutions for the entertainment and theatre industries. MSGI’s first client was American Express. At the time, American Express was in the business of issuing credit cards and traveler’s checks.

Entertainment companies, however, generally did not accept American Express cards because of the high fees it charged merchants. MSGI, under Jeremy’s leadership, persuaded entertainment businesses to accept American Express.

One way in which Jeremy accomplished this was by creating the program that became known as “Gold Card Events.” Entertainment and art venues had trouble selling tickets to fill up theatres. Jeremy advised American Express to purchase blocks of tickets and resell those tickets to its cardholders. Venues were able to reap the benefits of sold-out events, and, in return, began accepting American Express cards for ticket purchases. MSGI also founded Telecharge.com, which was the first business to sell tickets to Broadway shows by credit card over the internet, saving customers trips to the box office while enabling venues to fill their theatres. Other customers of MSGI included Sony, General Electric, and Disney.

In 1993, MSGI made *Inc*'s 500 list of the fastest growing private companies in America, with revenue growth from \$299,000 when it was launched to \$4 million only five years later.<sup>3</sup> MSGI made the *Inc.* 500 list again in 1994.<sup>4</sup> In 1996, MSGI generated \$10 million in revenue and became a public company. As a public company, MSGI acquired a number of telemarketing and internet businesses that had total reported revenue of over \$50 million. From 1997 to 1998, General Electric invested \$25 million in MSGI, eventually owning one-third of the company and becoming MSGI's largest shareholder. GE Equity Capital Group listed MSGI as a case study in its 1997 annual report.<sup>5</sup> MSGI continued to acquire businesses and integrate them into the company. In 1999, MSGI acquired Grizzard Communications, a closely held Atlanta-based marketing company for \$100 million in cash and stock.<sup>6</sup> That same year, *Money Magazine* listed MSGI as the second-best performing stock over a three-month period.<sup>7</sup> In 2000, MSGI reported \$128,606,882 in revenue and had over 2000 employees.

MSGI's performance began to decline in late 2000, however, as stock prices took a sharp downturn in stock markets across the United States, Canada, Europe, and Asia due to the "dotcom crash." In 2001, stock prices continued to decline and ultimately crashed following the events of September 11<sup>th</sup>. Nevertheless, in 2001 and in 2002, MSGI made the *Crain's New York*

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<sup>3</sup> See Excerpts from *Inc.* 500 List (Ex. 4).

<sup>4</sup> *Id.*

<sup>5</sup> See Excerpt from GE Equity Capital Group 1997 Annual Report (Ex. 5).

<sup>6</sup> See Excerpt from N.Y. Times, *Marketing Services to Buy Grizzard Communications*, July 15, 1999 (Ex. 6).

<sup>7</sup> See Excerpt from Money Magazine, *Market Benchmarks*, July 1999 (Ex. 7).

*Business* list of New York Area's Fastest Growing Companies ranked by three-year revenue growth rates.<sup>8</sup> In 2002, due to the change in market conditions that began in 2000, MSGI made the decision to divest the company of its assets. It retained Goldman Sachs to handle the sale. By the end of 2003, MSGI concluded its divestiture of assets and wound down all operations.

## **VII. Jeremy launches MSGI Security Solutions.**

In 2004, Jeremy repurposed the MSGI corporate shell into MSGI Security Solutions, Inc. ("MSGI Security"). With the United States and much of the world focused on threats posed by terrorism, Jeremy believed that the market was ripe for developing cutting-edge technology designed to assist law enforcement agencies in their efforts. With that goal in mind, one of Jeremy's investors introduced him to Joseph Peters, who had a substantial law enforcement background, to discuss whether they could work together to develop and sell technology products to law enforcement agencies.<sup>9</sup> Peters had devoted his entire career to law enforcement, serving as a police officer, a state prosecutor, a federal prosecutor, and working for two Presidential administrations in the Office of National Drug Control Policy.<sup>10</sup>

Jeremy and Joe determined that they would be a formidable team: Jeremy had a deep understanding of technology and a creative mind for developing innovations, while Peters had law enforcement agency contacts and a deep understanding of law enforcement needs. MSGI

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<sup>8</sup> See Excerpt from Crain's New York Business, *New York Area's Fastest-Growing Companies*, Oct. 15, 2001 (Ex. 9); Excerpt from Crain's New York Business, *New York Area's Fastest-Growing Companies*, Sept. 16, 2002 (Ex. 10).

<sup>9</sup> Trial Tr. 423:24-424:5.

<sup>10</sup> Trial Tr. 421:17-423:5.

Security had acquired a majority stake in a company called Innalogic and in Peters' view, the company produced "innovative technology that had utility in law enforcement, potentially national security, and particularly on the protective detail side—dignitary protection side of law enforcement."<sup>11</sup> Peters had substantial contacts inside the Secret Service, and he and Jeremy met with Secret Service officials to develop a portable wireless encrypted video surveillance system that could be deployed in an area to protect the President, the Vice-President, government officials, and dignitaries.<sup>12</sup> The Secret Service was one of MSGI Security's earliest and ultimately one of its largest customers.

MSGI Security and its subsidiaries went on to land contracts with the CIA, FBI, Secret Service, and the U.S. Marshals Service.<sup>13</sup> MSGI Security also obtained contracts with law enforcement agencies of foreign governments, including the Kingdom of Jordan and Trinidad and Tobago.<sup>14</sup> In addition, MSGI Security was hired by local New York City institutions and venues, including the Javits Center, the Peninsula Hotel, Madison Square Garden, and the United Nations.<sup>15</sup> The company also negotiated a contract with the NYPD to deploy portable wireless video and audio surveillance in the subway system. The agreement was signed by the NYPD's

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<sup>11</sup> Trial Tr. 424:23-425:4.

<sup>12</sup> Trial Tr. 426:1-19.

<sup>13</sup> See Letter from D. Capawana to C. Cox III, dated Mar. 8, 2006 (Ex. 11); Innalogic Invoice dated Apr. 30, 2007 (Ex. 12).

<sup>14</sup> See MSGI, Press Release, *MSGI Protects Critical Infrastructure in Trinidad-Tobago*, Mar. 2, 2006 (Ex. 13); L. Samuel Pfeifle, *MSGI Take 2*, Security Systems News, July 1, 2006 (Ex. 14).

<sup>15</sup> Trial Tr. 511:2-9.

Deputy Commissioner, and MSGI Security issued a press release concerning the contract.<sup>16</sup> Unfortunately, then-NYPD Commissioner Ray Kelly had not been informed about the contract, and when he was asked by a reporter to comment on it, Commissioner Kelly denied knowing anything about it, causing MSGI Security's stock price to plummet.<sup>17</sup>

Notwithstanding its success, MSGI Security was plagued over the years by periodic cash flow issues due to its limited capital resources.<sup>18</sup> In addition, one of its largest customers, the U.S. Secret Service, did not want the company's technology to be used by non-government customers or by foreign governments because the Secret Service used that technology to protect the President and White House Staff. The company's demise occurred primarily as a result of a series of subcontracting agreements it entered into with Hyundai Syscomm Corp. ("Hyundai"), in which MSGI Security alleged it had performed and was owed \$8 million, but Hyundai declined to pay. In July 2009, the company filed a lawsuit against Hyundai in the U.S. District Court for the Northern District of California.<sup>19</sup> The litigation was protracted and costly, and essentially drained MSGI Security of its remaining resources, leading it to wind down its business in mid-to-late 2011.

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<sup>16</sup> Trial Tr. 511:12-512:3.

<sup>17</sup> Trial Tr. 512:9-19.

<sup>18</sup> See MSGI Security 2008 10K (Ex. 15) at 4-5.

<sup>19</sup> See, MSGI, Press Release, *MSGI Provides Update on Hyundai Litigation*, Feb. 23, 2011 (Ex. 16).



### **VIII. Jeremy launches MSGI Technology Solutions.**

In 2009, recognizing that MSGI Security was not likely to survive, a Hyundai executive whom Jeremy had befriended suggested that Jeremy meet Meyya Meyyappan, then the Chief Scientist for Exploration Technology at NASA. The Hyundai executive was impressed with Jeremy's ability to understand and develop innovative technology for commercial applications. Meyyappan presented Jeremy with two technologies that he believed had great promise commercialization: (i) high-efficiency nanotechnology enabled solar cells for use in solar panels<sup>20</sup> and (ii) nano-sensor technology that had the potential for diagnosing medical conditions in human breath.<sup>21</sup> Meyyappan subsequently introduced Jeremy to officials at NASA's Technology Transfer Program, which licensed NASA technology to private industry for commercial development.

Thereafter, Jeremy repurposed MSGI once again, forming two subsidiaries, MSGI Energy, to develop and commercialize the solar energy panels, and Nanobeak, to develop and commercialize the nano-sensor technology. MSGI entered into a Reimbursable Space Act Agreement ("RSAA") with NASA for each technology. At the time, the government was issuing tax credits for the use of solar panels, and Jeremy therefore focused on developing the solar cell technology business.

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<sup>20</sup> See Letter from M. Meyyappan to J. Barbera, July 15, 2009 (Ex. 17); NASA Presentation, *MSGI Solar Project*, Nov. 23, 2011 (Ex. 18), NASA Presentation, *Nanotechnology-enabled Solar Cells for Improved Efficiency* (Ex. 19).

<sup>21</sup> See NASA Pamphlet, *Nanosensor Array for Medical Diagnosis* (Ex. 20).

Jeremy decided to develop solar panel farms using the NASA technology. At the time, Connecticut had the highest rates for electricity in the country so Jeremy explored building solar panel farms in Connecticut. An official at NASA's Technology Transfer Program introduced Jeremy to Paul Pelosi, Jr. (son of Congresswoman Nancy Pelosi), who was an advisor to the Technology Transfer Program. Mr. Pelosi, in turn, introduced Jeremy to a number of individuals in Connecticut that owned land, including Christopher Plummer, who purportedly owned Franklin Power & Light LLC, a retail electricity provider. Plummer and Jeremy agreed to create a joint venture between MSGI and Franklin: MSGI would build the solar panels and Franklin would provide the land.

According to a Complaint filed by the Securities and Exchange Commission (the "SEC"), Plummer made extravagant claims about "the expected revenue and other benefits flowing from the financial and other contributions made by Franklin to the joint venture."<sup>22</sup> However, "Franklin was essentially a sham, possessing none of the revenue, assets or financing it supposedly was contributing to the joint venture."<sup>23</sup> According to the SEC, "MSGI and Barbera simply reiterated in MSGI's press releases Plummer's false and unsupported claims about Franklin's assets and the joint ventures' anticipated profitability."<sup>24</sup>

At the time, Jeremy believed what Plummer had told him, especially because he was introduced to Jeremy by the son of a prominent Congressperson. Jeremy did not know that

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<sup>22</sup> Complaint, *SEC v. MSGI Technology Solutions, Inc. and J. Jeremy Barbera* (Ex. 21) ¶ 3.

<sup>23</sup> *Id.*

<sup>24</sup> *Id.* ¶ 4.

Plummer was using the joint venture to defraud investors, and Jeremy never tried to deceive any investors. Initially, Jeremy hired longtime MSGI counsel, Greenberg Traurig, to represent him in the SEC's investigation. As the investigation proceeded, however, Jeremy could no longer afford to pay Greenberg Traurig's fees and hired another law firm that charged lower rates. The cost of continuing to defend the investigation was extravagant, and Jeremy could not afford to pay the even more substantial costs associated with a litigation. Accordingly, in 2014, Jeremy entered into a consent judgment in which he neither admitted nor denied liability, paid a \$100,000 penalty, and agreed to a lifetime bar from serving as an officer or director of a public company.

**IX. Jeremy starts Nanobeak to create the first commercially viable breathalyzer sensor for medical diagnostic and law enforcement uses.**

**A. Jeremy's work to create a hand-held breathalyzer sensor.**

Jeremy founded Nanobeak in 2013 with one mission: to develop a test that could detect disease noninvasively through breath. He conducted extensive research on the subject of breath analysis to detect disease by a particular disease's unique breathmarker signature, each of which consisted of its own series of Volatile Organic Compounds ("VOCs"). Although there had been many scientific articles confirming the viability of this field, industry had not yet produced a commercially viable breathalyzer product for application in the medical diagnostic field. Jeremy reasoned that so long as the VOCs associated with a particular disease could be accurately detected by a sensor, virtually any disease could be detected using breath diagnostics. Jeremy understood that commercializing a hand-held sensor would be groundbreaking in that it could accurately detect diseases in a low-cost, non-invasive manner.

In December 2013, Nanobeak entered into a RSAA with NASA, granting Nanobeak a partially exclusive eight-year license to NASA patents for the development of chemical sensing applications for cancer and narcotics detection. As part of its agreement with Nanobeak, NASA was tasked with adjusting and developing its sensor to Nanobeak's specifications. In the months leading up to the execution of the RSAA, Barbera contracted with ELORET Corporation, a company based in Silicon Valley that provides research and engineering subcontractor services for the NASA Ames Research Center, to provide highly qualified nanotechnology scientists to assist Nanobeak with developing the NASA sensor for detecting lung and colon cancer at an early stage.<sup>25</sup>

Dheeraj Jain, an Eloret employee and later Nanobeak's Chief Technology Officer, admitted at trial that NASA moved slowly and provided limited resources to Nanobeak to advance the sensor technology despite Nanobeak having paid NASA over \$1 million.<sup>26</sup> At the time Nanobeak licensed the NASA sensor technology, the sensor had been used for the purposes of detecting environmental gases, such as trace gases in the crew cabin of the International Space Station. Accordingly, under Mr. Jain's direction, Nanobeak substantially adapted the NASA sensor, including altering its shape,<sup>27</sup> so that the sensor could ultimately be retrofitted into a

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<sup>25</sup> See ELORET and Nanobeak Service Agreement, dated Aug. 11, 2016 (Ex. 22).

<sup>26</sup> Trial Tr. 367:17-369:10.

<sup>27</sup> See NASA Press Release, *Ames Honored with Invention Award for Chemical Detection Sensor* [https://www.nasa.gov/centers/ames/news/2013/13-026AR\\_nasa-gov-invention-of-the-year.html#.UhzHiBZaX7I](https://www.nasa.gov/centers/ames/news/2013/13-026AR_nasa-gov-invention-of-the-year.html#.UhzHiBZaX7I).

breathalyzer device.<sup>28</sup> NASA provided Nanobeak with a sensor, but did not have a handheld prototype or device of any sort.<sup>29</sup> Jeremy's vision was to create one. As a result, Jeremy commissioned the creation of the prototype device from a NASA contractor, Variable, Inc., to house the adapted NASA sensor chip. Jeremy also hired a company in New Zealand, Theranostics, to develop a "breath capture" device that served to dehumidify the breath and prevent it from reaching, and interfering with, the sensor chip.<sup>30</sup> At Jeremy's direction, Nanobeak purchased a Biodot machine, which was housed at NASA Ames, that automated the chip-making process by applying materials to the sensor using machine application, instead of the existing manual process, which was very slow.<sup>31</sup> Jeremy also hired a developer, Jafar Kazmi, who created a functioning software application that would eventually work in conjunction with the handheld Nanobeak device using a Bluetooth connection to interpret and display the results of a diagnostic breath test.<sup>32</sup>

**B. Jeremy's extensive efforts to create strategic partnerships to bring investment into Nanobeak and to help Nanobeak develop, commercialize, and distribute the breathalyzer sensor.**

Given NASA's slow pace and limited progress on the sensor, Barbera sought a large, established company that could invest in Nanobeak and assist the company in moving its product closer to commercialization. In early 2017, Nanobeak initiated discussions with ADI, a large

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<sup>28</sup> Trial Tr. 369:16-370:11.

<sup>29</sup> *Id.* at 371:9-25.

<sup>30</sup> Trial Tr. 371:9-374:25.

<sup>31</sup> Trial Tr. 365:21-366:17.

<sup>32</sup> Trial Tr. 375:5-7.

public company that designs and manufactures products related to microcircuits, with the goal of forming a strategic partnership. Barbera subsequently retained Curtis Davis, a former executive at ADI, as a consultant to assist Nanobeak in its discussions with ADI and in negotiating a contract.

In February 2017, Barbera began collaborating with Alain Guery, a director in venture and emerging businesses at ADI, and Mario Freni, a manager of emerging businesses at ADI. In April 2017, ADI executives discussed meeting with Nanobeak at the NASA Ames Research Center so that ADI could review the NASA sensor technology in person and conduct certain testing on the sensor.<sup>33</sup> As the discussions between Nanobeak and ADI progressed, Mario Freni sent a working draft of a Memorandum of Understanding (“MOU”) between Nanobeak and ADI to Jeremy and Curt Davis that outlined ADI’s objectives in pursuing a strategic partnership with Nanobeak.<sup>34</sup> According to the draft MOU, Nanobeak and ADI would enter into a partnership “to bring to market a Nanobeak VOC chemical detection platform,” using the licensed NASA technology, in the following markets: (i) law enforcement; (ii) medical—clinical and point of care; (iii) medical—consumer; (iv) industrial; and (v) consumer. ADI also envisioned expanding the Nanobeak product “beyond disease detection analysis.”<sup>35</sup>

At ADI’s request, Nanobeak arranged for a two-day conference at NASA Ames between representatives of Nanobeak and ADI during which ADI would tour the Nanobeak laboratory

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<sup>33</sup> See Barbera PSR Objections, Exhibit 46 (Email communications dated April 20, 2017).

<sup>34</sup> See Barbera PSR Objections, Exhibit 47 (Email communications dated May 3, 2017).

<sup>35</sup> *Id.*

and the parties would engage in technical discussions concerning the manufacturing, operation, and capabilities of the sensor.<sup>36</sup> The conference indeed took place on June 8 and 9, 2017.

Members from ADI's engineering team and ADI's business group attended. Barbera, Curt Davis, Dheeraj Jain, and Bill Clark attended on behalf of Nanobeak. NASA scientist Ami Hannon also attended and conducted a demonstration of the sensor for the ADI team.<sup>37</sup> Dheeraj Jain answered technical questions from members of ADI's team.<sup>38</sup>

Following the June 8-9 meeting at NASA, ADI and Nanobeak arranged for weekly telephone conferences between ADI engineers and Dheeraj Jain and Curt Davis.<sup>39</sup> In July 2017, ADI prepared a more formal draft of the ADI-Nanobeak MOU.<sup>40</sup> In addition, Dheeraj Jain and Curt Davis visited ADI's offices in San Jose, California, for a number of in-person meetings with ADI engineers.<sup>41</sup> Weekly telephone conferences between ADI and Nanobeak continued for several months, along with even more frequent emails exchanging information.<sup>42</sup> Eventually, ADI proposed setting up an experimental lab, or "wet lab," for sensor development outside of NASA at ADI's facilities in Limerick, Ireland, or at ADI's Boston facilities. The idea behind

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<sup>36</sup> See Barbera PSR Objections, Exhibit 48 (Email from Mario Freni of ADI to Jeremy Barbera, Dheeraj Jain, and Curt Davis of Nanobeak, dated June 6, 2017).

<sup>37</sup> Trial Tr. 377:11-380:15.

<sup>38</sup> Trial Tr. 381:5-9.

<sup>39</sup> Trial Tr. 382:12-25.

<sup>40</sup> See Barbera PSR Objections, Exhibit 51 (Email from M. Freni to C. Davis, dated July 11, 2017).

<sup>41</sup> Trial Tr. 382:4-11.

<sup>42</sup> Trial Tr. 383:1-12.

setting up a wet lab at ADI was to speed up the development of the sensor and to conduct testing in a laboratory outside of the slow-paced, highly bureaucratic NASA environment.<sup>43</sup>

In connection with the frequent meetings between ADI and Nanobeak, Dheeraj Jain, with assistance from Curt Davis, prepared a detailed Sensor Testing Protocol for ADI. The Sensor Testing Protocol was developed in response to concerns ADI expressed about the sensor technology and ADI's request that Nanobeak perform certain tests on the sensor.<sup>44</sup> One of the issues concerning the viability of the sensor technology was whether the sensor would be able to adequately test for the presence of VOCs in human breath given that human breath contains moisture and the sensor had not been tested in humid environments.<sup>45</sup> Jeremy addressed this problem by hiring Dr. Patrick Gladding of the Theranostics Lab in New Zealand to create a breath capture device to reduce the levels of humidity that would reach the sensor.<sup>46</sup>

In late August 2017, meetings and information exchanges became less frequent because ADI required Nanobeak to perform further work to develop the sensor and to test the sensor's capabilities.<sup>47</sup> As time went on, communications between Nanobeak and ADI ultimately stalled. As a potential manufacturer of the device, ADI required Nanobeak to further develop the sensor to be scalable. By late 2017, although ADI and Nanobeak continued to engage in discussions,

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<sup>43</sup> Trial Tr. 383:13-24.

<sup>44</sup> Trial Tr. 385: 4-9.

<sup>45</sup> Trial Tr. 388:7-13.

<sup>46</sup> Trial Tr. 388:19-23.

<sup>47</sup> Trial Tr. 414:22-415:6.



“they were not as active as [when] they started.”<sup>48</sup> Occasional discussions continued through the summer of 2019 about a potential strategic partnership, with both parties expressing interest in reaching that objective.<sup>49</sup>

During the Summer of 2019, having failed to form a strategic partnership with ADI, and still dissatisfied with NASA’s sluggish pace, Barbera looked for alternatives to ADI to provide development and manufacturing support to Nanobeak. Through an introduction by one of Nanobeak’s Board Members, David Nolan, Barbera opened discussions with the Johns Hopkins Applied Physics Laboratory (“JHU-APL”). In June 2019, after several months of discussions, JHU-APL provided Nanobeak with a Statement of Work.<sup>50</sup> JHU-APL’s proposal contemplated that it would provide development and manufacturing support for Nanobeak’s handheld device, using the NASA sensor, with an estimated completion period of one year (a much quicker timetable than NASA could provide).

Jeremy was not wedded to JHU-APL, and accordingly searched for other companies that could provide the services Nanobeak needed. For example, Barbera explored working with Nottingham Spirk, a technology development firm based in Cleveland, in order to advance the sensor to the point of commercialization. Barbera shared with JHU-APL that Nanobeak was in

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<sup>48</sup> Trial Tr. 409:6-7.

<sup>49</sup> See Barbera PSR Objections, Exhibits 57 (email correspondence between A. Guery, M. Freni, and C. Davis dated Dec. 11, 2017), 58, 59, 60, 61 (email correspondence between C. Davis and B. Clark of Nanobeak and C. Breen and A. Guery of ADI, dated May 2, 2019, May 28, 2019, May 31, 2019, and June 26, 2019, respectively).

<sup>50</sup> See Barbera PSR Objections, Exhibit 27 (DX 701, JHU/APL Proposal for Nanobeak Development Support, dated June 6, 2019).

discussions with Nottingham Spirk. In an email dated December 9, 2019, from Barbera to Joshua Wolfe of JHU-APL, Barbera wrote: “We are spending Monday and Tuesday with them [Nottingham Spirk]. . . . Once we return from Cleveland I’ll know much more about our most appropriate next move. I prefer redundancy so ideally we can have several collaborators to help advance us to the marketplace even sooner.”<sup>51</sup> Barbera added “We see this as a three-way device launch consisting of our team at NASA Ames, [JHU]APL, and Nottingham Spirk. The sensor chip work would in theory be at APL.” *Id.*

In addition to proposed collaborations with JHU-APL and Nottingham Spirk to accelerate the development of the NASA sensor to the point of commercialization, Jeremy was exploring alternative technologies to the NASA sensor that would potentially achieve Nanobeak’s objectives faster and more cost-effectively. One promising alternative was a mini-mass spectrometer (“mini-GCMS”) device manufactured by the medical instrumentation company Perkin Elmer. The advantage of the Perkin Elmer machine was that it already existed, and theoretically, once the biomarkers for lung cancer were confirmed by the study, those biomarkers could be programmed into the mini GCMS without having to perform so much additional work to adjust the sensitivity of the sensor.

The idea came to Jeremy during the Johns Hopkins clinical study since the breath sampling was performed on a large GCMS. Barbera explained the idea to Dr. Ana Rule, a gas

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<sup>51</sup> See Barbera PSR Objections, Exhibit 69 (Email correspondence between Barbera and JHU APL dated Nov. 1, 2018 to Dec. 20, 2018).

chromatography expert at Johns Hopkins who was in charge of collecting the breath samples in connection with the lung cancer clinical study:

We are considering ordering a Perkin Elmer Torion system this month. They could preload 13 biomarkers into the system and deliver a plug and play device that is already looking for 13 quantifiable VOCs.”<sup>52</sup> Jeremy’s rationale behind using the Perkin Elmer GCMS was to allow Nanobeak to immediately enter the marketplace once the lung cancer VOCs were determined as a result of the Johns Hopkins clinical study, while the handheld Nanobeak device containing the NASA sensor was finalized, manufactured, and approved by the FDA for commercial use.

Jeremy discussed the Perkin Elmer with the Nanobeak Board and explained that pursuing that option might allow Nanobeak to bring its product to market more quickly. In an email from Barbera to the Board of Directors dated December 9, 2018, Barbera wrote,

Since their instrument [Perkin Elmer’s portable GCMS] is already in the marketplace, our plan is to use our lung cancer biomarker signature first in their instrument to advance to the market faster. In the interim we will perfect our [NASA] sensor using the same biomarker.<sup>53</sup>

Moreover, Barbera shared his contingency plan with investors, including Charles Bertucio. In a series of email communications between Barbera and Bertucio (and Bertucio’s co-investors) related to due diligence queries, Barbera explained that Nanobeak planned to use a portion of the funds being raised to purchase a Perkin Elmer portable spectrometer to “materially accelerate our go to market strategy for cancer screening.”<sup>54</sup> As Barbera described:

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<sup>52</sup> See Barbera PSR Objections, Exhibit 70 (Email from Barbera to A. Lam of JHU APL dated June 4, 2019).

<sup>53</sup> See Barbera PSR Objections, Exhibit 71 (Email from Barbera to D. Ricks and D. Nolan dated Dec. 9, 2018).

<sup>54</sup> See Barbera PSR Objections, Exhibit 72 (Email from J. Barbera to C. Bertucio- dated Nov. 8, 2018).

They [Perkin Elmer] were able to detect the majority of biomarkers in our preliminary stage one lung cancer signature. There is work to be done to improve the low end of the detection limits for each biomarker but it's only a few months of work. Because mass spectrometers are already approved by the FDA, we could combine our biomarkers with their existing device and very quickly get a 510(k) approval and move into the marketplace....obviously we would continue to advance the Nanobeak handheld mobile sensor which is designed for consumer and physician use for medical screening and for law enforcement use of narcotics screening. The big advantage with PerkinElmer is a clear and rapid move into the marketplace for cancer screening.<sup>55</sup>

**C. Barbera's efforts to confirm existing scientific literature related to breathmarkers for stage 1 lung cancer.**

In connection with its work for Nanobeak, NASA was tasked with adapting the sensor to Nanobeak's specifications and intended applications. NASA, however, was not tasked with identifying or discovering the VOCs associated with specific diseases or narcotics because NASA had no access to patients. To pursue that objective, Jeremy sought to have the leading medical research university in the country, Johns Hopkins, conduct the clinical study.<sup>56</sup>

Although the stage 1 lung cancer clinical study at Hopkins commenced in September 2017, Nanobeak and Hopkins began discussing the contours of their collaboration at least a year prior. Barbera spent months working with Hopkins staff to compile a stellar interdisciplinary

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<sup>55</sup> *Id.*

<sup>56</sup> Information concerning the Nanobeak-Johns Hopkins clinical study can be found at <https://clinicaltrials.gov/ct2/show/NCT03275688>.

team to lead Nanobeak's clinical study.<sup>57</sup> Barbera selected Dr. Lonny Yarmus, Clinical Director, Division of Pulmonary and Critical Care Medicine, and Associate Professor of Medicine from Hopkins<sup>58</sup> to serve as the principal investigator of the trial and handle patient recruitment. Barbera selected Ana Maria Rule from Hopkins' Bloomberg School of Public Health, Environmental Health and Engineering Department,<sup>59</sup> to process and analyze the breath samples from patients using mass spectrometers. Lastly, Barbera chose Ciprian Crainiceanu, a biostatistician from Hopkins' Bloomberg School of Public Health,<sup>60</sup> to identify trends in the biomarker data analyzed by Dr. Rule and either confirm or discover additional VOCs associated with stage 1 lung cancer.

In April 2019, after about a year-and-a-half of work on the clinical trial, Dr. Crainiceanu reported to Jeremy that the preliminary results of the Nanobeak clinical trial were "encouraging" and "are a little better than we expected and seem to be pointing in the direction of confirming some, but not all, of the published findings in the literature."<sup>61</sup> Only a few months later, however, in July 2019, Johns Hopkins abruptly terminated the clinical study, purportedly over the release on YouTube of a promotional video for Nanobeak that Bill Clark had created.<sup>62</sup> The

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<sup>57</sup> See Email from L. Yarmus to J. Barbera, dated Oct. 10, 2016 (Ex. 23).

<sup>58</sup> Dr. Yarmus' profile can be found at <https://www.hopkinsmedicine.org/profiles/details/lonny-yarmus>.

<sup>59</sup> Ms. Rule's profile can be found at <https://publichealth.jhu.edu/faculty/1984/ana-maria-rule>.

<sup>60</sup> Mr. Crainiceanu's profile can be found at <https://publichealth.jhu.edu/faculty/1442/ciprian-m-crainiceanu>.

<sup>61</sup> See DX 705; See also Trial Tr. 884:23-886:7

<sup>62</sup> See DX 275.

video included a demonstration of how the Nanobeak device would work, and interviews of Dr. Yarmus and of Jeremy.<sup>63</sup>

Jeremy was furious at Clark and terrified that everything he had built to this point was in jeopardy.<sup>64</sup> At Jeremy's insistence, Clark wrote a letter to Johns Hopkins admitting that he released the video to YouTube and apologizing for doing so.<sup>65</sup> Jeremy also asked Mintz Levin, Nanobeak's outside counsel, to seek a conflict waiver from Johns Hopkins (whom Mintz Levin also represented in certain matters), in order to represent Nanobeak in an effort to work things out with Johns Hopkins.<sup>66</sup> Johns Hopkins declined to come to an agreement and resume the study.

But Johns Hopkins would never resume its relationship with Nanobeak—at least with Jeremy as CEO—and it was not because of the release of the promotional video. What the Board of Directors soon learned, but never disclosed to Jeremy, was that the study was terminated because Johns Hopkins was served with a grand jury subpoena concerning Jeremy Barbera and his business at Nanobeak.<sup>67</sup>

Jeremy was disheartened. The leading medical research university in the country had terminated the clinical study that was so necessary for Nanobeak to succeed. But, undeterred,

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<sup>63</sup> See DX 218.

<sup>64</sup> See Email from J. Barbera to B. Clark, dated July 12, 2019 (Ex. 25).

<sup>65</sup> See Letter from B. Clark to P. Roberts, dated July 15, 2019 (Ex. 26).

<sup>66</sup> See Email from C. Jeffers to P. Roberts and J. Barbera, dated July 17, with attachment (Ex. 27).

<sup>67</sup> Trial Tr. 486:23-487:11.

Jeremy contacted Dr. Barbara Nemesure, Professor and Division Head of Epidemiology and Biostatistics and the Director of Cancer Prevention and the Lung Cancer Program at SUNY Stony Brook to explore whether Stony Brook would be interested in completing the clinical trial. Jeremy previously had been introduced to Dr. Nemesure by Dr. Yarmus because the Johns Hopkins clinical trial experienced delays due to difficulties in recruiting enough patients with Stage 1 lung cancer to participate in the trial. Dr. Yarmus suggested that Dr. Nemesure and Stony Brook could help Johns Hopkins conduct the clinical trial in order to accelerate the trial's progress.<sup>68</sup>

Once Johns Hopkins terminated the clinical trial, Jeremy saw an opportunity to continue the study where Johns Hopkins had left off. Jeremy and Dr. Nemesure worked on preparing the application to Stony Brook's Internal Review Board for the clinical trial and after reviewing the application, the IRB.<sup>69</sup> When Jeremy presented the idea to the Nanobeak Board, it was dismissed out of hand and they halted the clinical trial efforts altogether, notwithstanding that in a February 2020 meeting between Mr. Joyce and the Johns Hopkins clinical trial team, their study showed great promise for confirming the detection of the breathmarker signature for lung cancer.<sup>70</sup> Instead, Mr. Joyce decided to focus "relentlessly" on preparing a "proof of concept."<sup>71</sup>

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<sup>68</sup> DX 802.

<sup>69</sup> DXs 801, 803, 804.

<sup>70</sup> See Barbera PSR Objections, Ex. 106 (Video of Zoom Conference between T. Joyce, C. Craineceanu, L. Yarmus, and A. Rule).

<sup>71</sup> Trial Tr. 247:9-24.

**D. Jeremy’s efforts to discover the breathmarkers for drugs of abuse.**

The RSAA contemplated that NASA would perform research and development functions for Nanobeak related to adapting the sensor to detect tetrahydrocannabinol (“THC”).<sup>72</sup> Notwithstanding the specific obligations set forth in the RSAA, NASA reneged its promise and informed Barbera in 2018 that it would not permit narcotics testing at its facilities. After NASA declined to perform sensor testing and improvements related to THC reactivity, Barbera searched for institutions that could conduct clinical studies establishing VOCs associated with drugs of abuse.

Because sample populations were more readily available than for patients with Stage 1 lung cancer, Jeremy believed that Nanobeak could relatively easily conduct a clinical study to determine the VOCs associated with drugs of abuse and then program the NASA sensor or PerkinElmer portable device to detect those VOCs. Unlike a breathalyzer for medical diagnostic use, there is no regulatory pathway to law enforcement applications.<sup>73</sup>

Initially, Barbera arranged for narcotics testing to be conducted by Johns Hopkins’ Bloomberg School of Public Health—with oversight from the toxicology division of the Johns Hopkins School of Medicine—using breath samples collected from patients of the Concerted Care Group, a substance abuse treatment center located in Baltimore, Maryland.<sup>74</sup> Breath

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<sup>72</sup> NASA, however, was never tasked with identifying the VOCs associated with specific diseases or narcotics because NASA had no access to patients.

<sup>73</sup> *Id.*

<sup>74</sup> *See* Barbera PSR Objections, Exhibit 25 (Nanobeak-Concerted Care Group Memorandum of Understanding, dated Apr. 19, 2018) and Exhibit 74 (Email correspondence with W. Clarke of JHU and J. Barbera dated 2-19-19 to 2-21-19).



samples of confirmed drug users were, in-fact, collected from patients at the Concerted Care Group beginning in November 2018 and transported daily to Johns Hopkins for analysis. The idea was that the toxicology team from the Bloomberg School of Public Health would spend the next several months analyzing the Concerted Care patient data to determine the breath biomarkers associated with each drug of abuse, but the project was never completed.

Subsequently, in early 2020, Jeremy pursued a strategic partnership with Ammon Labs, a highly regarded drug testing laboratory based in New Jersey. Jeremy was particularly interested in Ammon Labs' in-house testing and the high volume of samples available for analysis.<sup>75</sup> Jeremy contemplated that the collaboration with Ammon Labs, which never got off the ground because Jeremy was ousted from Nanobeak, was intended to complete the VOC drug detection work commenced at Hopkins.

Jeremy believed, quite rationally, that if the handheld Nanobeak device was proven to work, law enforcement demand for the technology would be enormous. Joseph Peters concurred with Jeremy's assessment, testifying at trial that "[Barbera] asked my opinion because he felt that there would be great utility in the law enforcement area. And given our history before about collaborating using cutting-edge technology, I agreed with him and thought that, yes. It could be. And we discussed various applications."<sup>76</sup>

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<sup>75</sup> See Barbera PSR Objections, Exhibit 26 (Email from J. Barbera to D. Ricks, J. Peters, and T. Joyce, dated Feb. 24, 2020).

<sup>76</sup> Trial Tr. 430:3-9.

**E. Jeremy's director and officer bar is perceived as hindering Nanobeak's ability to raise capital.**

Jeremy understood that notwithstanding all of the work and progress he made with Nanobeak, he needed to raise substantial additional funds to get Nanobeak's product to the point of commercialization. He also understood, and certain Board members and investors concurred, that his SEC judgment was hindering Nanobeak's ability to raise the necessary capital to achieve its strategic objectives. One of the ways in which Jeremy hoped to raise capital was through an initial public offering. Jeremy understood that he could not serve as the CEO of a publicly traded company unless his SEC ban was vacated, an option he intended to pursue, but that nonetheless he needed a succession plan. As a result, in June 2019, after considering several candidates, Jeremy offered Tom Joyce, a Wall Street veteran, the position of Chairman of the Nanobeak Board of Directors. Joyce's responsibilities were delineated in an offer letter from Nanobeak: (i) complete a \$20 million equity raise; (ii) select an investment bank for a planned IPO in 2020; (iii) prepare Nanobeak for its S1 registration statement; and (iv) generate awareness of Nanobeak in the investment banking community.<sup>77</sup>

Joyce believed that one of the principal obstacles not only to an IPO, but to raising the capital necessary to accomplish Nanobeak's goals and bring the breathalyzer device to market, was Barbera's SEC history. Indeed, Joyce heard this concern from investors and from potential investment banking partners such as Cannacord Genuity.<sup>78</sup> Joyce tried to persuade Jeremy to

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<sup>77</sup> See Barbera PSR Objections, Exhibit 77 (Letter from Jeremy Barbera to Thomas Joyce dated June 26, 2019).

<sup>78</sup> Trial Tr. 197:19-200:1.

step down as CEO, but Jeremy resisted, arguing that Nanobeak’s outside counsel, Mintz Levin, had suggested that the “right lawyer” could get the SEC director and officer bar vacated.<sup>79</sup> But Jeremy also told Joyce that “if we fail to get the settlement vacated, we will recruit a new CEO just like we recruited you as chairman.”<sup>80</sup>

**F. The Nanobeak Board removes Jeremy as CEO.**

In October 2019, the Nanobeak Board persuaded Jeremy to step down as its CEO, which he did reluctantly.<sup>81</sup> The members of the Board already believed that Jeremy’s SEC judgment was preventing Nanobeak from raising sufficient funds to complete the development of the sensor.<sup>82</sup> The news of the grand jury subpoena convinced them that they had to act.

Nevertheless, the Board did not sever Jeremy from the company entirely because, in the words of Joseph Peters, “there was a concern that if we just moved him from the company completely, it would create such chaos in the eyes of investors and our present or future partners that the middle ground seemed to be—we would reduce him to chief science officer, which he knew better than anybody.”<sup>83</sup>

Once Joyce took over as CEO, he and the Nanobeak Board reviewed Nanobeak’s bank records and discovered that instead of paying himself a salary, Jeremy was using Nanobeak funds directly to cover personal expenses. The Board members did not disagree that Jeremy was

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<sup>79</sup> See Ex. 24.

<sup>80</sup> See *id.*

<sup>81</sup> Trial Tr. 200:23-202:1; DX 241.

<sup>82</sup> See, e.g., Trial Tr. 488:15-21.

<sup>83</sup> Trial Tr. 494:7-11.

entitled to compensation, however, as Joseph Peters said at trial, only so “long as it was properly done.”<sup>84</sup> In December 2019, the Board confronted Jeremy about “using Company funds inappropriately for personal expenses.”<sup>85</sup> Jeremy admitted that he had used the company’s funds for personal expenses, but explained that he did so in lieu of a salary because he had been the subject of a dispute with the IRS that exposed his personal accounts to being swept by the IRS.<sup>86</sup> The Board agreed to credit Jeremy \$300,000 per year for the previous seven years as compensation for his services to Nanobeak.<sup>87</sup> The Board further agreed that any funds in excess of the \$300,000 would be reimbursed by Jeremy through a reduction in his equity ownership.

Subsequently, the Board hired a forensic accountant to review the bank records to determine which expenses were personal and which expenses were business-related. Jeremy asked to make his case to the Board without the need for a forensic accountant. The Board declined to let Jeremy provide his analysis. The Board and Jeremy were at loggerheads over that issue, among others. In April 2020, the Board terminated Barbera from Nanobeak. Notably,

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<sup>84</sup> Trial Tr. 595:19-22.

<sup>85</sup> See Barbera PSR Objections, Exhibit 3 (Nanobeak Biotech Inc., Minutes of the Board of Directors, dated Dec. 10, 2019).

<sup>86</sup> *Id.* It should be noted that well before Jeremy was aware of any criminal investigation and well before the Board of Directors raised issues concerning his use of corporate funds, Jeremy engaged tax controversy counsel in early September of 2018 with the objective of settling his income tax issues with the IRS and with the New York State Department of Finance. In September of 2020, Jeremy’s tax counsel negotiated a payment plan with both agencies and is in the process of nearing the end of its negotiations for an Offer in Compromise with the IRS. See Barbera PSR Objections, Exhibit 66.

<sup>87</sup> See Barbera PSR Objections, Exhibit 3 (Nanobeak Biotech Inc., Minutes of the Board of Directors, dated Dec. 10, 2019).

Nanobeak issued a press release trumpeting Jeremy's termination and falsely representing that it "recently completed a stage 1 lung cancer trial at Johns Hopkins University and is currently in the analysis phase of that study."<sup>88</sup>

Tom Joyce continued to serve as Nanobeak's interim CEO until approximately October 2020. In November 2020, Bill Clark attempted a hostile takeover of the Nanobeak, purporting to remove the Board and its officers, to terminate Mintz Levin as outside counsel, and to install a man named Henry Livingston as CEO.<sup>89</sup> In December 2020, Board member Dee Dee Ricks informed Nanobeak shareholders that the Board believed that Mr. Clark's effort to remove the "Board and its Officers is without merit, improper, and harmful to the Company's business interests and detrimental to shareholder value."<sup>90</sup> Ms. Ricks also represented to Nanobeak shareholders that:

- The Board is in discussions with several renowned medical institutions to replace JHU as the Principal Investigator in order to move ahead with the expansion of clinical trials for stage one cancer screening/detection and other cancers.
- The Board is awaiting final proposals from R&D and engineering firms to test and validate the response of nanomaterials-based sensors to demonstrate proof of concept of the technology.
- The Board is in discussion with potential collaborators to start working on adapting the sensors to detect illicit drugs for law enforcement use.<sup>91</sup>

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<sup>88</sup> See Nanobeak Biotech Inc., Press Release, *Nanobeak Announces Termination of Jeremy Barbera*, Apr. 22, 2020, available at <https://www.biospace.com/article/releases/nanobeak-announces-termination-of-jeremy-barbera/>.

<sup>89</sup> See Letter from M. Harris, Esq. to D. Ricks and D. Nolan, dated Nov. 23, 2020 (Ex. 28).

<sup>90</sup> See Email from D. Ricks to Nanobeak Shareholders, dated Dec. 7, 2020 (Ex. 29).

<sup>91</sup> *Id.*

On December 13, 2021, over two years after Barbera was removed as its CEO, Nanobeak declared bankruptcy.<sup>92</sup>

**G. Jeremy launches Go Blue Biotech, Inc. and succeeds in developing sensor technology for medical diagnostic uses.**

After Johns Hopkins terminated the clinical study, Jeremy explored opportunities with other institutions to continue the clinical trial where Johns Hopkins left off. As discussed above, Jeremy was able to successfully secure approval for SUNY Stony Brook to continue that study. But Thomas Joyce and the Board declined that opportunity. Jeremy also explored the possibility of conducting a clinical trial at the University of Michigan. As Joe Peters testified at trial,

And around that same time, I remember him sort of finding a new bright spot scientifically which was the University of Michigan; that he had been out there with his daughters who went to school there, or one of his daughters, and had seen this facility that some pharmaceutical company had given Michigan and that it would be an optimal facility and they would be a great partner for us to go to the next level of clinical trials or whatever we needed to do.<sup>93</sup>

Just as with SUNY Stony Brook, the Board had no interest in pursuing any clinical trial at that time, let alone one recommended by Jeremy.

In November 2019, shortly before he was suspended by Nanobeak, Jeremy recognized that his termination was imminent and incorporated Go Blue Biotech Inc. (“Blu Biotech”) for the purpose of finishing what he started at Nanobeak, except without Nanobeak’s proprietary NASA sensor.<sup>94</sup> Jeremy, of course, has a comprehensive knowledge of the leading research scientists in

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<sup>92</sup> See *In re Nanobeak Biotech Inc.*, Case No. 21-11600 (MG) (SDNY Br.)

<sup>93</sup> Trial Tr. 487:22-488:4.

<sup>94</sup> See Go Blue Biotech Inc. State of Delaware Cert. of Incorporation, and EIN letter from the IRS (Ex. 30). Go Blue Biotech Inc., which operated as Blue Bioetch Inc., as reflected in an

the field of breath analytics. One of those scientists, Xudong (Sherman) Fan, is a Professor of Biomedical Engineering at the University of Michigan, as well as the Associate Director of the Max Harry Weil Institute for Critical Care Research and Innovation at the University.<sup>95</sup> Dr. Fan’s research focuses on using a micro photoionization detector device (“Micro-GC”) for sensitive detection of biomarkers in exhaled breath that indicate the presence of disease, and works on “translating lab research into commercial products that can benefit the whole society.”<sup>96</sup>

Dr. Fan and his team at Michigan created a Micro-GC that has the possibility of detecting VOCs from a person’s exhaled breath. In March 2020, Jeremy, on behalf of Blu Biotech, entered into a Sponsored Research Agreement with the University of Michigan, under which Blu Biotech would provide the funding to further develop and refine Michigan’s Micro-GC.<sup>97</sup> The parties also executed a Patent Option License Agreement that granted Blu Biotech the exclusive right to license Michigan’s Micro-GC.<sup>98</sup>

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amendment filed with the State of Delaware, recently effected a name change and now operates as Blu Biotech Inc.

<sup>95</sup> Dr. Fan’s profiles can be found at: <https://bme.umich.edu/people/xudong-fan/>; <https://weil institute.med.umich.edu/members/xudong-sherman-fan-phd?rq=xudong>; and <https://fanlab.bme.umich.edu/>.

<sup>96</sup> <https://bme.umich.edu/people/xudong-fan/>.

<sup>97</sup> See Blue Biotech Inc. and University of Michigan Research Agreement, dated Mar. 9, 2020 (Ex. 31); Research Amendment—Amendment #1, dated Mar. 3, 2021 (Ex. 32).

<sup>98</sup> See Blue Biotech Inc. and University of Michigan Patent Option Agreement, Dated Mar. 6, 2020 (Ex. 33); First Amendment to Patent Option Agreement, dated Mar. 12, 2021 (Ex. 34).

Over the next two years, Jeremy and Dr. Fan’s team at Michigan collaborated to develop and refine the Micro-GC. Because the research efforts began shortly after the onset of the pandemic, Blu Biotech and Michigan focused on developing the Micro-GC to detect COVID-19. As the research progressed, in December 2020, Dr. Fan’s team at Michigan received a \$2 million grant from the National Institute of Health (the “NIH”) in connection with a project called Screening for COVID-19 by Electronic-Nose Technology (“SCENT”), “to clinically test a portable breath analysis device that detects and monitors biomarkers indicative of COVID-19 as well as lung injury.”<sup>99</sup>

The NIH grant enabled Dr. Fan’s team to undertake and complete clinical studies related to the detection of COVID-19. One of the clinical studies involved analyzing 205 breath samples using the Micro-GC that produced a 90.9% accuracy rate in detecting COVID-19, notwithstanding the presence of a variant, such as Omicron.<sup>100</sup> In light of the success of that clinical test, Dr. Fan’s team from Michigan was invited to participate in the NIH’s SCENT Steering Committee. The Steering Committee includes program scientists from the NIH, representatives from the Food and Drug Administration (the “FDA”), and NIH SCENT program

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<sup>99</sup> See <https://bme.umich.edu/research-team-awarded-2m-nih-grant-for-breath-analyzer-that-detects-and-monitors-covid-19-covid-19-induced-lung-injury/>; See also Professor Fan’s grant application: <https://grantome.com/grant/NIH/U18-TR003812-01>.

<sup>100</sup> See Rushi Sharma, et al., *Portable Breath-Based Volatile Organic Compound Monitoring for the Detection of COVID-19: Challenges of Emerging Variants* (Sept. 9, 2022), available at <https://www.medrxiv.org/content/10.1101/2022.09.06.22279649v1>.



grant recipients from several universities. Jeremy participated in the SCENT Steering Committee as a member of Dr. Fan's Michigan team.<sup>101</sup>

Shortly after the jury's verdict in this case, Jeremy resigned as CEO and Chairman of Blu Biotech, which also ended his participation in the SCENT Steering Committee. Although Jeremy is no longer an officer or member of the board of Blu Biotech, the company has continued to pursue his objective of bringing a portable breath analytics device to the market for medical diagnostic uses.<sup>102</sup> But as a result of Jeremy's vision, his contributions to the effort through February 2022, and the contributions of the Blu Biotech and Michigan teams, on October 22, 2022, Blu Biotech submitted an application to the FDA for Emergency Use Authorization (EUA) to use the Micro-GC as a diagnostic test for COVID-19. Blu Biotech's EUA application is currently under review by the FDA.

In light of the successes of the clinical trials, Blu Biotech exercised its option under its Patent Option Agreement with Michigan. On November 2, 2022, Blu Biotech and Michigan entered into a Patent License Agreement for the purposes of developing and commercializing the Micro-GC.<sup>103</sup> In addition to using the Micro-GC to diagnose COVID-19, Blu Biotech is now working on developing the Micro-GC to diagnose various other diseases, including cancer, acute

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<sup>101</sup> See NIH SCENT Steering Committee Meeting Notes, FDA Pre-EUA Discussion, July 9, 2021 (Ex. 35).

<sup>102</sup> See Blu Biotech website: <https://www.blubiotech.com/>

<sup>103</sup> See Blu Biotech Inc., Press Release, *Blu Biotech Inc. Announces a Patent License Agreement with University of Michigan*, Nov. 1, 2022, available at <https://www.blubiotech.com/news/20221101>.

respiratory distress syndrome, sepsis, and other acute and chronic inflammatory diseases.<sup>104</sup>

Indeed, Blu Biotech has sponsored four clinical trials, each of which has demonstrated the efficacy of the Micro-GC and the promise of breath analytics for diagnosing disease:

- COVID-19: Blu Biotech provided financial support through a Sponsored Research Agreement for the University of Michigan's bioengineering Research and Development and a clinical trial designed to demonstrate the efficacy of the Micro-GC and the breath biomarkers discovered with the financial support of the NIH.
- COVID-19: Blu Biotech is the exclusive financial sponsor through a Sponsored Research Agreement for a clinical trial at the University of New Mexico designed to demonstrate the efficacy of the Micro-GC and the breath biomarkers discovered with the financial support of the NIH.
- Cancer: Blu Biotech holds the exclusive rights to certain biomarkers for colorectal cancer and is the exclusive financial sponsor for the University of Bari, Italy for its clinical trial designed to demonstrate the efficacy of the Micro-GC in screening for colorectal cancer.
- Cancer: Blu Biotech Biotic is the exclusive financial sponsor for the University of Bari, Italy for its clinical trial designed to demonstrate the efficacy of the Micro-GC in screening for lung cancer.

Each of these trials requires a source of patients from the university hospital where they are conducted, and a team of bioengineers from Michigan to conduct the evaluation using machine learning. The commercial version of the Micro-GC will be automated and will not require human intervention. The preliminary results of these trials have been extremely promising<sup>105</sup>:

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<sup>104</sup> See University of Michigan, Press Release, *Blu Biotech Inc. to Develop and Commercialize Breath Analysis Technology Developed at Weil Institute and College of Engineering*, Nov. 2, 2022, available at <https://weil.institute.med.umich.edu/latest-news/blu-biotech-inc-announces-a-patent-license-agreement-with-university-of-michigan>; Blue Biotech, Press Release, *Blu Biotech Inc. Announces a Patent License Agreement with University of Michigan*, Nov. 1, 2022, available at <https://www.blubiotech.com/news/20221101>.

<sup>105</sup> See Blu Biotech, Preliminary Results, available at <https://blubiotech.com/solution>.

Disease	Specificity	Sensitivity	Predictive Value
Lung Cancer	96%	88%	95.7%
Colorectal Cancer	100%	94.3%	96.2%
COVID-19	96.7%	93.3%	95%

Clinical results from the lung cancer trial were presented at the International Thoracic Surgical Oncology Summit, sponsored by the American Association of Thoracic Surgeons, on September 30, 2022.<sup>106</sup> Clinical results from the colorectal cancer trial were presented at the European Society of Coloproctology held in Dublin on September 21-23, 2022.<sup>107</sup> Jeremy’s vision for commercializing a device to diagnose diseases from human breath has never been closer.

### **UNRESOLVED OBJECTIONS TO THE PSR**

At sentencing, the district court “must—for any disputed portion of the presentence report or other controverted matter—rule on the dispute or determine that a ruling is unnecessary either because the matter will not affect sentencing, or because the court will not consider the matter in sentencing.” Fed. R. Crim. P. 32(i)(3)(B). In resolving any dispute concerning a factor

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<sup>106</sup> Sudish Murthy, Debora Braschia, Presentation, *Rapid Breath Analysis for Lung Cancer Detection Using An Automated Micro Portable Gas Chromatography Device*, Sept. 30, 2022, available at <https://www.aats.org/resources/rapid-breath-analysis-for-lung-cancer-detection-using-an-automated-micro-portable-gas-chromatography-device>.

<sup>107</sup> A. Picciariello, et al., *Rapid Breath Analysis for Colorectal Cancer Detection Using an Automated Portable Gas Chromatography Device*, Sept. 13, 2022, available at <https://onlinelibrary.wiley.com/doi/10.1111/codi.16275?af=R>.

important to the sentencing determination, “the court may consider relevant information without regard to its admissibility under the rules of evidence applicable at trial, provided that the information has sufficient indicia of reliability to support its probable accuracy.”

U.S.S.G. § 6A1.3(a).

Here, the PSR’s recitation of the offense conduct is lifted substantially verbatim from the Criminal Complaint, which is inaccurate in many of its allegations. As a whole, the PSR’s recitation of the offense conduct falsely paints a picture of Mr. Barbera as a serial charlatan who never intended to accomplish the objectives he described to investors, but instead used Nanobeak and other corporate vehicles as fronts solely for the purpose of “enrich[ing] himself and his family members,” as the Probation Officer concluded in making his sentencing recommendation.<sup>108</sup> Although a jury found that Mr. Barbera made material misrepresentations in order to induce investors to invest in Nanobeak, the evidence at trial, the substantial evidence cited in Mr. Barbera’s PSR objections and its exhibits, and this sentencing memorandum and its exhibits, conclusively demonstrate that Mr. Barbera worked relentlessly to deliver what he promised to investors: the commercialization of a device capable of detecting, through breath, early stage lung cancer and colon cancer. Had Mr. Barbera not been fired from Nanobeak, it is likely he would have accomplished for Nanobeak that which he was able to accomplish for Blu Biotech.

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<sup>108</sup> See PSR at page 35.

We respectfully submit, and courts have agreed, that a defendant's motive or his degree of culpability in making materially false statements to investors is an important consideration for sentencing. For example, the Seventh Circuit observed in *United States v. Schneider*, 930 F.2d 555, 558 (7<sup>th</sup> Cir. 1991):

[I]t is necessary to distinguish between two types of fraud. One is where the offender—a true con artist . . .—does not intend to perform the undertaking, the contract or whatever; he means to pocket the entire contract price without rendering any service in return. . . . The other type of fraud is committed in order to obtain a contract that the defendant might otherwise not obtain, but he means to perform the contract (and is able to do so) and to pocket, as the profit from the fraud, only the difference between the contract price and his costs.

Likewise, in *United States v. Ovid*, 2010 WL 3940724, at \*2 (E.D.N.Y. Oct. 1, 2010), the court varied substantially downward from the advisory Guidelines range in a securities fraud case based on the defendant's motives:

As opposed to your pump and dumps and some of these other types of criminal schemes that the court has . . . seen over the years, this Jadis Capital . . . was started with the best of intentions. This firm was hoping to benefit the lives of the ministers and people associated with the church who went to work at the firm and also specifically intended to benefit the members of the congregation. . . . [T]he defendant and his co-conspirators all believed that this was actually going to work. . . .

*See also United States v. Thavaraja*, 740 F.3d 253, 262 (2d Cir. 2014) (“[Defendant’s] motivation was certainly relevant to the determination of his punishment, and it was appropriate for the district court to take his motivation into account.”). As the Supreme Court has observed, “sentencing judges have considered a wide variety of factors in addition to evidence bearing on guilt in determining what sentence to impose on a convicted defendant,” and “[t]he defendant’s motive for committing the offense is one important factor.” *Wisconsin v. Mitchell*, 508 U.S. 476, 485 (1993).

Accordingly, we identify for the Court below Mr. Barbera's unresolved objections to the PSR. Where the government responded to the defense's objections or where we believe that the Probation Officer misconstrued an objection, we provide a response:

• **Paragraph 10:**

*Victims of the Alleged Fraud*

The defense objected to the statement that Mr. Barbera participated in a scheme to defraud "investors of investments in companies that were owned and/or controlled by Barbera," and specifically, that he "made material misrepresentations and omissions to investors in order to solicit and maintain their investments in those companies." In response, we asserted that the Indictment identifies only Nanobeak investors as the victims of the alleged fraudulent scheme, and that there is no evidence that Mr. Barbera "made misrepresentations to induce investors to invest in any other companies."

In response, the government contends that it "introduced evidence at trial, including the testimony of Dr. Richard Fried, Jamie Pike, and Robert Wood, that the defendant defrauded and attempted to defraud investors in Go Blue Biotech [and] Animal Breath Analytics."

The government is mistaken. As an initial matter, Dr. Fried conceded that Mr. Barbera did not try to solicit any investment from him in Animal Breath Analytics, but that he only asked Dr. Fried to be a scientific advisor to that company.<sup>109</sup> With respect to Robert Wood, Mr.

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<sup>109</sup> Trial Tr. 135:15-21.

Barbera sought to purchase Mr. Wood's shares in Nanobeak by issuing shares in Go Blue Biotech.<sup>110</sup>

With respect to Jaime Pike, Carl Smith attempted to purchase her Nanobeak shares in exchange for shares that he would purchase from Go Blue Biotech. Ms. Pike admitted that she had a conversation with Mr. Smith about this exchange but did not recall the substance of that conversation.<sup>111</sup> Although Ms. Pike said that she was not given the option of refusing to accept the offer, she also conceded that the issue of whether to accept or reject "was never brought up. There was no verbal communication or written communication having that opportunity not to take that option."<sup>112</sup> In any case, there is no evidence whatsoever that Mr. Barbera was privy to the conversation between Mr. Smith and Ms. Pike. Furthermore, we do not know Mr. Smith's side of the story since he did not testify at trial.

*Barbera's Use of Nanobeak Funds for Personal Purposes*

The government contends that Mr. Barbera "falsely claimed that any funds invested in Nanobeak would be used for research and development or other general corporate purposes. . . ." For the reasons set forth in our objection to Paragraph 10, that representation was not false. Furthermore, the government advances the misleading assertion that Barbera "falsely claim[ed] to Nanobeak's investors and/or Board of Directors that Barbera did not receive a salary for

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<sup>110</sup> Trial Tr. 645:21-650:16; GX 684 at 1, Email from Jeremy Barbera to Robert Wood, dated April 3, 2020 at 10:21 a.m. ("We will take you out of Nanobeak and put you into Go Blue Biotech (GBB) and increase your ownership to 1%.")

<sup>111</sup> Trial Tr. 298:18-299:1.

<sup>112</sup> Trial Tr. 299:10-300:4.

Nanobeak or that he received funds in an amount substantially less than what he in fact received from the company.”

*First*, there is no evidence that Mr. Barbera told anyone that he did not receive a salary or compensation from Nanobeak. Nor is there any evidence that it was his regular practice to direct others to represent to investors that he did not receive compensation from Nanobeak. The only document that comes close to a *single* instance in which Mr. Barbera allowed such a representation to be made to an investor is when Bill Clark asked Mr. Barbera to review a seven-paragraph draft email to a single potential investor in which Clark said, among other things, that “[e]veryone that works on different aspects of Nanobeak is not paid a salary as there is no money for such.”<sup>113</sup> Mr. Barbera responds curtly, “[i]t’s fine and accurate,” and adds that “[o]bviously we are paying JHU and NASA a considerable amount of money for their people. It’s your call whether you expand on that fact or not.”

*Second*, the government misleadingly asserts that Mr. Barbera falsely told the Board of Directors “that he received funds in an amount substantially less than what he in fact received from the company.” But this contention apparently relies on a single set of draft financial statements Mr. Barbera provided the Board, which included a line reflecting “Officer Compensation.” The fact is that Barbera prepared those financial statements with the assistance of a CFO and Bill Clark, and together they decided how to categorize whether certain expenses of Barbera’s were personal or business-related in nature. There is no evidence that Mr. Barbera

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<sup>113</sup> GX 318.



intentionally misled anyone on the Board about whether he took compensation or the *amount* he was taking in compensation. The evidence shows that Mr. Barbera did not disclose to the Board *how* he was taking his compensation. However, there is no indication that the Board or any investor ever inquired about any of those matters until *after* the Board became aware of a grand jury subpoena served on Johns Hopkins relating to Mr. Barbera.

*The Loss Amount*

We address the loss calculation below in this Memorandum's section on the Guidelines analysis.

- **Paragraph 16:** We object to the characterization of the neither-admit-nor-deny settlement with the SEC as the "SEC Fraud Settlement."

- **Paragraph 17:**

We submit that testimony by any witness to the effect that Mr. Barbera told them he had completed the development of the sensor are not credible on their face, principally because they concede that immediately after they had invested, they learned that the development of the sensor had not been completed, and never raised the issue with Mr. Barbera.<sup>114</sup> The referenced exhibit in which Mr. Barbera stated that Nanobeak had "developed the ability to detect lung cancer at stage 1" does not prove the government's point. As an initial matter, Mr. Barbera uttered those words while making a speech to attendees of the Special Operations Forces Industry Conference. He was not offering the attendees the opportunity to purchase shares in Nanobeak. Moreover, in June 2017, Johns Hopkins was in the process of performing a

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<sup>114</sup> See, e.g. Trial Tr. 121:25-122:17 (Fried), 126:12-127:17 (Fried); 228:19-229:13 (Joyce); 230:16-231:5 (Joyce).

confirmatory study relating to existing scientific literature concerning a unique breath signature for stage one lung cancer. Mr. Barbera sincerely believed that the sensor, with further development, would be capable of detecting the volatile organic compounds making up that breath signature.

- **Paragraphs 22-26, 28-29, 33-36:** The government did not respond to our objections.
- **Paragraph 37:** We disagree with the government's response for the reasons set forth in our objection.
- **Paragraph 38:** The government did not respond to our objections.
- **Paragraph 39:** The government's response misconstrues our objection.
- **Paragraphs 40-41, 43-47:** The government did not respond to our objections.
- **Paragraph 52:** We disagree with the government's response for the reasons set forth in our objection.
- **Paragraph 55:** The government did not respond to our objection.
- **Paragraph 57:** The loss calculation is addressed below in this Memorandum's section on the Guidelines analysis.

### **SENTENCING GUIDELINES ANALYSIS**

#### **I. The applicable advisory Guidelines calculation results in an offense level of 9.**

Mr. Barbera's total offense level is 9, based on the following calculation:

Base Offense Level: 7 (U.S.S.G. § 2B1.1(a)(1))

Prior Judicial Order: +2 (U.S.S.G. § 2B1.1(b)(9)(C))

Total: 9 (Advisory Guidelines Zone B sentencing range of 4 to 10 months)

#### **A. The Government bears the burden of proof to establish the existence and amount of any loss and the proof here should be clear and convincing.**

For a loss enhancement to apply, the government must prove both the existence and the amount of loss attributable to the offenses of conviction. *See United States v. Williams*, 247 F.3d

353, 358 n.7 (2d Cir. 2001). While courts in the Ninth Circuit apply a “clear and convincing” standard of proof for contested facts that significantly change the guidelines range, other circuits apply a “preponderance of the evidence standard.” *United States v. Robertson*, 946 F.3d 1168, 1171 (10th Cir. 2020). Neither the Supreme Court nor the Second Circuit have definitively stated whether due process requires this heightened standard. *Id.*

We respectfully submit that the loss enhancement here, which, by itself, increases Mr. Barbera’s minimum advisory Guidelines sentence by over elevenfold (i.e. 4 months without the loss enhancement to 46 months with the enhancement, and even higher if the government’s proposed calculation is accepted), should be subject to this heightened standard. *Cf. Woodby v. I.N.S.*, 385 U.S. 276, 285-86 (1966) (applying clear and convincing standard in deportation case and noting the “drastic deprivations that...follow” cannot be based “upon no higher degree of proof than applies in a negligence case.”); *Santosky v. Kramer*, 455 U.S. 745, 764 (1982) (in the context of termination of parental rights, “when the individual interests at stake . . . are both ‘particularly important’ and ‘more substantial than mere loss of money’ . . . . [T]he [Supreme] Court has deemed this level of certainty necessary to preserve fundamental fairness in . . . proceedings that threaten . . . ‘a significant deprivation of liberty’ or ‘stigma.’”).<sup>115</sup>

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<sup>115</sup> See also *United States v. Norman*, 776 F.3d 67, 77 (2d Cir. 2015) (observing that the trial court in *pro se* case “painstakingly calculated the Guidelines” and determined the loss amount “well in excess of preponderance of the evidence”); *United States v. Marsh*, 820 F. Supp. 2d 320, 343 (E.D.N.Y. 2011), as amended (Nov. 3, 2011) (finding that the government met its loss causation burden “by a clear and convincing standard.”).

**B. There is no “actual loss,” or, at a minimum, “actual loss” cannot reasonably be determined here.**

Although the amount of loss need not be computed with “precision,” *United States v. Kumar*, 2010 WL 3169270, at \*14 (2d Cir. Aug. 12, 2010), a sentencing court’s estimate of the loss must be “reasonable,” U.S.S.G. § 2B1.1 at cmt. n. 3(C), and a sentencing court may not engage in speculation. *United States v. Deutsch*, 987 F.2d 878, 886 (2d Cir. 1993). Thus, the government must provide a specific loss calculation for each individual victim. *United States v. Skys*, 637 F.3d 146, 154 (2d Cir. 2011). This includes where the victims are all individual investors in a particular company. *Id.* at 155; *See also United States v. Abiodun*, 536 F.3d 162, 168-69 (2d Cir. 2008) (vacating sentence where district court failed to calculate each individual victim’s loss before applying the sentencing enhancement for number of victims).

In *Skys*, the district court applied the enhancement for ten or more victims based on four financial institutions listed in the PSR, including one with multiple individual investors. The Second Circuit reversed, and instructed the district court to engage in an individualized assessment of each victim’s loss. For the financial institution with multiple investors, the court was instructed to calculate loss for each investor rather than the institution as a whole. *Id.* at 155-56. *See also, e.g., United States v. Warshak*, 631 F.3d 266, 274 (6<sup>th</sup> Cir. 2010) (reversing and remanding to district court for a “more thorough explication of its [loss] calculation,” and noting “that it may be improper to conclude that all of Berkeley’s revenues constitute *actual loss*” because while “the evidence suggests that Berkeley’s operations—even in the later years—were permeated with fraud, . . . there is no evidence suggesting that literally every customer was deceived by [the company’s] misrepresentations.”).

**1. The correct measure of loss in this case is “actual loss,” if it reasonably can be determined.**

The Guidelines provide that in a case involving fraud, the “loss” amount is the greater of the actual or intended loss. *See* U.S.S.G. Section 2B1.1, cmt. 3(A)(i)-(ii). “Intended loss” is the “pecuniary harm that the defendant purposely sought to inflict.” *Id.* The evidence adduced at trial reflects that Barbera was genuinely trying to achieve the development and commercialization of the Nanobeak sensor. Barbera did not purposely seek to inflict pecuniary harm on any Nanobeak investor and, as a result, there is no “intended loss.”

“Actual loss” is “the reasonably foreseeable pecuniary harm that resulted from the offense,” which is defined as “harm that the defendant knew or, under the circumstances, reasonably should have known, was a potential result of the offense.” *Id.*, cmt. 3(A)(iii)-(iv). Accordingly, it is clear that “actual loss,” if it can reasonably be determined, is the appropriate measure of loss.

**2. “Actual loss” cannot reasonably be determined here because Barbera’s misrepresentations were not the proximate cause of the loss to Nanobeak investors.**

“[W]here a finding of loss is based on the victim’s actual loss, the district court generally must limit its loss determination to the losses *caused by* the defendant’s fraudulent representations.” *United States v. Abbey*, 288 F.3d 515, 518 (2d Cir. 2002) (emphasis added). In a case involving the sale of securities, this typically requires estimation of “[t]he reduction that resulted from the offense in the value of equity securities or other corporate assets.” *Id.* cmt. n. 3(C)(v). For the loss to have “resulted from the offense,” the Second Circuit has adopted the civil securities fraud loss causation standards. *See United States v. Rutkoske*, 506 F.3d 170, 179 (2d Cir. 2007). The Second Circuit in *Rutkoske* found that there was “no reason why

considerations relevant to loss causation in a civil fraud case should not apply, at least as strongly, to a sentencing regime in which the amount of loss caused by a fraud is a critical determinant of the length of a defendant's sentence." *Id.*

Guided by *Dura Pharmaceuticals, Inc. v. Broudo*, 544 U.S. 336, 342 (2005), the government must demonstrate both "but-for" and proximate cause of the economic loss—i.e. transaction and loss causation. *Id.* Any portion of the decline in value of the investment caused by other factors disrupts the chain of causation and "must be excluded from the loss calculation." *Rutkoske*, 506 F.3d at 179 (citations omitted). While Mr. Barbera's case does not involve the more familiar fact pattern involving the sale of publicly traded securities, the government is not (and cannot be) absolved of its burden of proving proximate causation. *See, e.g., United States v. Marlatt*, 24 F.3d 1005 (7<sup>th</sup> Cir. 1994).

*Marlatt* is instructive here. In *Marlatt*, the defendant owned and sold title insurance issued by Ticor Title Insurance Company. *Id.* at 1006. He later purchased a resort hotel, sold timeshare condominiums in the hotel, and issued each purchaser a Ticor title insurance policy that falsely represented the purchasers were obtaining clear title, when he knew, but did not disclose to the purchasers or to Ticor, that all of the titles were heavily encumbered by mortgages and other debt. *Id.* Ticor ultimately discovered the encumbrances and spent \$476,000 to eliminate the liens and clear the purchasers' titles. *Id.* In the meantime, however, the value of the property had plummeted because the defendant had closed the resort. *Id.* When the timeshare purchasers threatened to sue, Ticor purchased all of the units back from the purchasers for \$565,000. *Id.* The district court, in determining the loss, added the \$565,000 to the \$476,000 to compute the total loss caused by the fraud. *Id.*

The Seventh Circuit reversed. The court reasoned that \$476,000 was a sound calculation of the loss because “the defendant unlawfully took from Ticor the promise of indemnification contained in the policies of title insurance that Ticor through the defendant issued to purchasers of the time-share condominiums.” *Id.* Nevertheless, the investors were not promised that their condominiums would be purchased back if the title proved defective. Rather, the investors were promised to be made whole for any defects in the title. *Id.* at 1007. Although the purchasers’ timeshares had become worthless because the resort had closed, the loss in value of the timeshares “was not a consequence of the fraud . . . other than in the sense . . . of ‘but for’ causality.” *Id.* The court, however, held that the mere “fact that the purchasers *would not have purchased* the time shares” had it not been for the title insurance policies issued by Ticor did not make “Ticor an insurer against a drop in the real estate market.” *Id.* (emphasis added). In other words, the loss in value of the timeshares was not caused by the defendant, and thus was not chargeable to him as “loss” under the Guidelines. As the Court reasoned,

That is the difference between “but for” causation and the causation-for which the presence of but-for causation is ordinarily a necessary condition but rarely a sufficient one—that imposes legal liability. The distinction runs throughout the law. Criminal law is no exception.

*Id.*

The same reasoning applies here. Mr. Barbera’s misrepresentations did not cause the losses to investors. Indeed, he had advanced Nanobeak to the point where it was on the verge of following a clear path to commercialization. But the Board and some investors determined that the company would be better off *without* Mr. Barbera. As Mr. Joyce admitted at trial, “the technology was there, the possibilities were there, but [Nanobeak] couldn’t move forward with

Mr. Barbera . . . as CEO.”<sup>116</sup> Even months after learning about the grand jury subpoena served on Hopkins, and well after Mr. Barbera had been demoted to Chief Science Officer, the members of the Board believed in the technology and that it could be developed into a product for commercial use and distribution. As Tom Joyce expressed to one impatient investor, “[w]e have basically validated the technology. . . . Just gotta perfect it some more, then get regulatory approval, which means some hoops to jump through. Then make the things.”<sup>117</sup>

Notably, the government’s investigation did not begin as a result of any investor complaint. It began after a defendant in this District was convicted after trial and tried to provide information about potential offenses in order to obtain a motion for a reduction in sentence under Rule 35. Indeed, we understand that this defendant heard about Mr. Barbera pitching potential investors in the Hamptons (at the home of a member of the Nanobeak Board of Directors) on purchasing stock in Nanobeak, and he expressed to law enforcement that he believed that the concept of using breath to detect disease was ludicrous. The case agent investigated the matter, leading him to NASA, where officials informed him that:

- Nanobeak “failed to pay the full amounts due to NASA under the various RSAAs [between NASA and Nanobeak].”<sup>118</sup>
- After Barbera settled his case with the SEC, “Barbera started to enter into agreements with NASA using [Nanobeak], rather than continuing to use [MSGI],” and, consequently,

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<sup>116</sup> Trial Tr. 248:25-249:4.

<sup>117</sup> See Email from T. Joyce to X. Mimaud, dated Sept. 8, 2019 (Ex. 36).

<sup>118</sup> See Criminal Complaint ¶ 11.g; PSR ¶ 24.



“Barbera did not disclose to NASA the intertwined relationship of [MSGI] and [Nanobeak].”<sup>119</sup>

- Nanobeak never developed a breathalyzer sensor technology “capable of detecting either narcotics or cancer in human breath,” because, indeed, “NASA had only conducted research related to the detection of biomarkers for diabetes.”<sup>120</sup>
- “NASA did not permit research related to narcotics testing at its facilities, and thus no such testing was ever done.”<sup>121</sup>
- Nanobeak could not have developed a breathalyzer sensor capable of detecting cancer because “NASA did no research related to the detection of cancer.”<sup>122</sup>

Of course, all of those statements by NASA were misleading and uninformed.

The truth of the matter was that:

- Nanobeak had stopped working with NASA because Mr. Barbera believed it was too slow in making progress. Mr. Barbera had approached Johns Hopkins University Applied Physics Lab (JHU-APL), which in sum and substance, promised to perform the work in one year that NASA had been charged with, and failed to accomplish in well over three years.<sup>123</sup>
- Barbera never concealed the “intertwined relationship” between MSGI and Nanobeak.<sup>124</sup>
- Whether NASA had performed research on breathmarkers for cancer or for narcotics was beside the point, since *Johns Hopkins* was conducting the clinical study on the breathmarkers for cancer, and Mr. Barbera had sought to conduct a clinical study on the breathmarkers for narcotics at the Johns Hopkins Bloomberg School of Public Health, and elsewhere.<sup>125</sup>

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<sup>119</sup> See Criminal Complaint ¶ 12.a; PSR ¶ 25.

<sup>120</sup> See Criminal Complaint ¶ 13.a; PSR ¶ 29.

<sup>121</sup> See Criminal Complaint ¶ 13.c; PSR ¶ 29.

<sup>122</sup> See Criminal Complaint ¶ 13.d; PSR ¶ 29.

<sup>123</sup> See PSR Objections ¶¶ 22-26, 28.

<sup>124</sup> See PSR Objections ¶¶ 26.

<sup>125</sup> See PSR Objections ¶ 29.

With NASA's information in hand, the case agent interviewed investors, explaining that the FBI was investigating a possible fraud by Nanobeak, which, predictably, caused certain investors to distrust Mr. Barbera. Especially since those investors, concededly, had been told by Mr. Barbera that the timetable for commercialization and an IPO was much shorter than what had actually panned out. As Dr. Richard Fried testified at trial, "[U]ntil really the FBI agent walked into my office, I had no reason to believe that anything I had been told wasn't true."<sup>126</sup>

The FBI also interviewed and served grand jury subpoenas on Nanobeak strategic partners, including Johns Hopkins University, which, as the testimony at trial established, caused Johns Hopkins to terminate the clinical study before it was completed. The Nanobeak Board soon learned of the grand jury subpoena served on Johns Hopkins (but did not inform Barbera). After that happened, the members of the Board and a few other investors who already were concerned about whether Mr. Barbera—given the SEC settlement and director and officer bar—could raise sufficient funds to move the breathalyzer sensor towards the finish line of commercialization, now had ample additional reason to demote and then remove Mr. Barbera from the company he founded.

The relevance of all of this is that notwithstanding whatever representation(s) the jury found Mr. Barbera to have made to investors that were intentionally and materially false, when the investigation began in 2019, Nanobeak had never been in a better position to accomplish its goal of commercializing the sensor. Indeed, the Hopkins study was progressing favorably and

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<sup>126</sup> Tr. 80:7-9.

the members of the clinical research team were excited and hopeful about the possibilities of this new technology.<sup>127</sup> Mr. Barbera had sought and made contacts with strategic partners for the development of VOCs associated with narcotics, as well as the development, manufacturing, and distribution of the Nanobeak breathalyzer. Mr. Barbera had asked for, and was granted meetings with a number of investment bankers who were interested in learning more about the potential for an initial public offering. Indeed, Tommy Rueger, a Managing Director at JPMorgan Chase investment bank, and the head of its healthcare division, who generally met with no more than five companies a week took not only one meeting with Mr. Barbera, but made arrangements to meet with him at an upcoming healthcare conference.<sup>128</sup> Cannacord Genuity investment bank expressed substantial interest in working with Nanobeak, but not with Mr. Barbera at the helm of the company because of Mr. Barbera's SEC judgment.<sup>129</sup>

Accordingly, if Barbera's misrepresentations could have proximately caused the loss, with Thomas Joyce leading the company, and Mr. Barbera finally removed, there should have been few obstacles to success. Mr. Joyce, an accomplished and experienced CEO "was a believer that the technology was real and that the opportunity was somewhere between large and huge."<sup>130</sup> Nevertheless, after demoting Barbera to Chief Science Officer in October 2019, suspending him in December 2019, and terminating him in April 2020, Nanobeak could not gain

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<sup>127</sup> See, e.g., DX 705.

<sup>128</sup> Trial Tr. 147:22-148:8; 150:19-151:6; 155:16-166:14.

<sup>129</sup> Trial Tr. 199:6-200:1.

<sup>130</sup> Trial Tr. 254:2-4.

traction without Mr. Barbera. Indeed, for the more than two years since Jeremy was removed as Nanobeak's CEO until Nanobeak declared bankruptcy, Nanobeak was unable to raise sufficient capital or otherwise make any progress towards accomplishing the objective of commercializing the breathalyzer sensor. Nanobeak's failure cannot be laid at Mr. Barbera's feet.

As demonstrated by the success of Blu Biotech, Mr. Barbera accomplished what Nanobeak could not accomplish without him. In these circumstances, the actual loss cannot be the total amount invested in Nanobeak, as the government and the Probation Department contend. *See, e.g., United States v. Leonard*, 529 F.3d 83, 93 (2d Cir. 2008) (“[E]ven accepting the district court’s finding that the investors would not have purchased the investment had they known of the fraud, this does not, in and of itself, mean that the securities the investors received in exchange for their contributions were entirely without value.”) (quotations and citations omitted); *United States v. Olis*, 429 F. 3d 540, 546-547 (5<sup>th</sup> Cir. 2005) (distinguishing between cases in which “defendants promoted worthless stock in worthless companies,” in which the Guidelines loss is appropriately calculated as “the entire amount raised by the schemes,” and cases in which fraud “prop[s] up a company’s stock but do[es] not . . . render the company worthless,” where the appropriate measure of loss requires proximate causation and “careful analysis” because the “stock price is affected before and after the fraud by numerous extrinsic market influences as well as the soundness of other business decisions by the company.”).

Here, the government’s position presumes that Nanobeak was worthless at all times and that investors received stock in what was a sham company. That argument, however, is unsupported by the record and wrong as a matter of law and basic economics. Accordingly, the argument by both the government and the Probation Department that the loss is the total amount raised from Nanobeak investors should be rejected.

**3. “Gain” is not an appropriate proxy for Guidelines “loss” in this case.**

The Guidelines provide that the gain to the defendant “that resulted from the offense” can be used “as an alternative measure of loss,” but “*only* if there is a loss but it reasonably cannot be determined.” U.S.S.G. § 2B1.1 n. 3(B). Here, the government has not met its burden of proving loss in the first instance, and has not offered a methodology for determining loss other than the total amount raised from Nanobeak investors. *See, e.g., United States v. Robie*, 166 F.3d 444, 454-56 (2d Cir. 1999) (citing *United States v. Chatterji*, 46 F.3d 1336, 1340 (4th Cir.1995) (“[G]ain is only an alternative measure of some actual, probable, or intended loss; it is not a proxy for loss when there is none.”); *United States v. Morales*, 664 F. App’x 228, 232 (3d Cir. 2016) (“Yet even when showing an exact amount proves elusive, it remains within the government’s power to present evidence that would aid in forming a well-grounded estimate.”); *United States v. Andersen*, 45 F.3d 217, 221-22 (7th Cir. 1995) (where there is no evidence of financial loss, sentencing enhancement based on defendant’s gain is not appropriate.).

**4. If “Gain” is to be used as an alternative measure of the “loss,” the appropriate Guidelines calculation results in an offense level of 23.**

**a) The “Gain” to Barbera was no more than \$1,499,030.**

If gain is to be used as an alternative measure of the loss, we propose that the reasonable estimate of that loss is no greater than \$1,499,030 for the reasons set forth in our objections to Paragraph 57 of the PSR at pages 36-38.

**b) If “Gain” is used as an alternative measure of the “loss,” the applicable offense level is 23, with an advisory Guidelines range of 46 to 57 months’ imprisonment.**

If gain is used as an alternative measure for loss, the Guidelines calculation is as follows:

Base Offense Level: 7 (U.S.S.G. § 2B1.1(a)(1))

Loss: +14 (U.S.S.G. § 2B1.1(b)(1)(H))  
Prior Judicial Order: +2 (U.S.S.G. § 2B1.1(b)(9)(C))  
Total: 23 (Advisory Guidelines range of 46 to 57 months' imprisonment)

**C. The enhancement for “10 or more victims” should not be applied here.**

Although there were fewer than ten investors who testified at trial, the Probation Department and the government seek a Guidelines enhancement of two levels because, as discussed above, there is no evidence of any victim “loss,” within the meaning of Section 2B1.1 of the Guidelines. *See supra*, Section I.B. Even if the government had such evidence, it must provide individualized proof of loss for each investor, and it cannot do so here. *See supra*.  
Section I.A.

**II. To the extent the Court uses the gain as an alternative measure for loss, and so much more so if it accepts the government’s loss calculation, a downward departure is warranted because the loss overstates the degree of Mr. Barbera’s culpability.**

In determining the otherwise-applicable advisory Guidelines, a court also should consider any applicable advisory Guidelines departures. *See United States v. Emmenegger*, 329 F. Supp.2d 416, 422 (S.D.N.Y. 2004) (“[A] sentencing departure does not constitute a subversion of the Sentencing Reform Act or of the guidelines system. In fact, notwithstanding the shorthand terminology sometimes applied, a departure is not a departure ‘from the guidelines’; it is a departure from *the otherwise applicable guideline range*”) (citations omitted). *See also, United States v. Taylor*, 843 F. Supp. 38, 43 (3d Cir. 1993) (“It is important to note that departures are an important part of the integrated structure of the Guidelines.”). The Sentencing Commission has long recognized that a downward departure may be warranted where the offense level determined under the fraud table “substantially overstates the seriousness of the offense.” U.S.S.G. § 2B1.1, Cmt. n. 21(C).

For the reasons we discuss more fully below in analyzing the sentencing factors under Section 3553(a), the loss substantially overstates the degree of Mr. Barbera's culpability. Among other things, while a jury found that Mr. Barbera made one or more misrepresentations to investors to induce them to purchase shares in Nanobeak, the evidence demonstrates that Mr. Barbera did not intend to cause financial harm to his investors. To the contrary, he sincerely wanted them to succeed. Furthermore, even accepting the jury's verdict, the bulk of Mr. Barbera's very hard work for Nanobeak was legitimate and honorable. *See, e.g., United States v. Hussain*, 2019 WL 1995764, at \*6 (N.D. Cal. May 6, 2019), *aff'd sub nom. United States v. Hussain*, 818 F. App'x 765 (9<sup>th</sup> Cir, 2020) (rejecting government's loss calculation to the extent it included the defendant's salary and bonuses because "[w]hile some portion of the salary, bonuses, and equity compensation that [the defendant] received during the relevant period can likely be traced back to his fraud, . . . [the defendant] would have earned a salary and other compensation for his work . . . independent of his fraudulent behavior as a result of his non-fraudulent work.").

**ANALYSIS OF THE FEDERAL SENTENCING FACTORS UNDER 18 U.S.C. § 3553(a)**

After determining a defendant's sentencing range under the advisory Guidelines, the district court must consider: "the nature and circumstances of the offense and the history and characteristics of the defendant," and impose a sentence that is sufficient, but not greater than necessary to satisfy the objectives of federal sentencing, including the need for the sentence imposed to: (i) reflect the seriousness of the offense, promote respect for the law, and to provide just punishment for the offense; (ii) provide general deterrence; (iii) provide specific deterrence; and (iv) "provide the defendant with . . . medical care, or other correctional treatment in the most effective manner." 18 U.S.C. § 3553(a)(1), (2). Although the district court must correctly calculate the Guidelines and consider them, the Guidelines calculation "must take second place"

to the federal sentencing factors under Section 3553(a). *United States v. Gupta*, 904 F. Supp. 2d 349 (S.D.N.Y. 2012), *aff'd*, 747 F.3d 111 (2d Cir. 2014).

As Judge Gleeson observed in *Ovid*, “a full consideration of the ‘nature and circumstances of the offense and the history and characteristics of the defendant’ . . . implicates offense and offender characteristics that are too numerous and varied, and occur in too many different combinations, to be captured, much less quantified, in the Commission’s Guidelines Manual.” *Id.* at \*1. Rather, “consideration of those and other factors set forth in § 3553(a) produces sentences that are moored to fairness, and to the goals of sentencing set forth in § 3553(a)(2), but sometimes not so much to the advisory Guidelines range. Indeed, in some cases the fair sentence can drift quite far away from the advisory range, which is, after all, but one of eight factors the sentencing judge must consider.” *Id.*

#### **I. Jeremy Barbera’s History and Characteristics and the Nature and Characteristics of the Offense.**

Jeremy Barbera is a 66-year-old man who, despite being an entrepreneur and salesperson for the majority of his adult life, has never previously run afoul of the criminal laws. He is a kind man, a devoted father, a son who honored and cared for his parents, and is compassionate to people and animals alike.<sup>131</sup> Despite running a large, successful public company for about twenty years, he never had any issues with the SEC until ten years after that company terminated its operations. The fact of the matter is that unlike the Probation Department’s misguided view

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<sup>131</sup> See Exs. 1-3, Trial Tr. 123:12-23 (Fried); Trial Tr. 442:7-8; 584:19-24.



of him—which itself concedes that view is based on limited knowledge<sup>132</sup>—Mr. Barbera is not a serial fraudster.

Mr. Barbera did not steal from investors. He did not target the weak and gullible. Indeed, the vast majority of Nanobeak’s investors were high net worth, financially savvy individuals. His conduct was not motivated by greed. By all accounts, Mr. Barbera was passionate about Nanobeak’s breathalyzer technology, believed in it, and worked tirelessly to deliver for his investors by developing and commercializing the breathalyzer sensor and by taking the company public. This is demonstrated by Jeremy’s actions as described above in this memorandum. And several of the witnesses who worked closely with him agreed with that view.<sup>133</sup> Indeed, Mr. Barbera not only wanted to benefit his investors, but he also believed he was pursuing a higher calling: to potentially transform the state of medical in order to save millions of lives.

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<sup>132</sup> See, e.g., PSR at 31 (“since the defendant was found guilty at trial, the Court would be in the best determine whether paragraphs . . . should be revised.”).

<sup>133</sup> T. Joyce, Trial Tr. 244:1-3 (“He was passionate about it, yes. Obviously he was far too optimistic at times, but he was passionate about it.”); T. Joyce, Trial Tr. 244:25-245:5 (Jeremy chose Mr. Joyce to serve as Chairman of the Board because he truly wanted to take Nanobeak public; “That was part of the employment agreement I signed when I became Chairman. It was obviously a goal of the company.”); T. Joyce, Trial Tr. 256:1 (Jeremy “did seem to have a very robust work ethic.”); T. Joyce, Trial Tr. 256:21-25 (Mr. Joyce had no doubt about “[t]he sincerity about [Jeremy’s] belief in the possibilities of the, if you will, invention of the device. . . . I think he was sincere.”); T. Joyce, Trial Tr. 257:6-7 (“I believe he wanted to develop a product to bring to market.”); J. Peters, Trial Tr. 584:5-18 (agreeing that Mr. Barbera was passionate about the technology and who wanted to make an impact by developing that technology.); J. Peters, Trial Tr. 588:22-589:1; 597:15-598:9 (agreeing that Mr. Barbera worked extremely hard to develop and bring the product to market); D. Jain, Trial Tr. 358:12-25, 359:5-12 (agreeing that Mr. Barbera was passionate about Nanobeak’s mission and wanted to develop the technology).

Mr. Barbera spent every waking moment trying to deliver for his investors. He put whatever money he had into Nanobeak. He also took out high-interest loans which he personally guaranteed to keep Nanobeak afloat. Mr. Barbera staked his career and reputation on making this venture work. He did not want to harm his investors. He did not wish for them to lose their money. That he believed in the technology and the efficacy of breath analytics is evidenced by his willingness to have Johns Hopkins, NASA, ADI, Evonik, and other major companies and scientists test his hypotheses.

We appreciate, but respectfully disagree with the jury's verdict. The jury considered the evidence and apparently found that Mr. Barbera exaggerated too much: perhaps they believed Mr. Barbera made unrealistic representations to investors concerning how long it would take the breathalyzer sensor to be brought to the market or the company to reach an IPO. There is no question that Mr. Barbera lied about his educational credentials, which is indefensible, although those representations seemed to be geared more to making people comfortable with his understanding of science and technology—which he indisputably has—and not to the essence of the bargain itself, *i.e.*, shares in a company that was genuinely pursuing development and commercialization of the breathalyzer.

It is important to consider the pressures that an entrepreneur faces, which undoubtedly contributed to Mr. Barbera's legal troubles here. An article in the *Harvard Business Review*, entitled "Entrepreneurs and the Truth" provides some insight into the pressures facing an entrepreneur:

In the early days of Vice Media, cofounder Shane Smith sent a few copies of the Montreal-based start-up's fledgling publication to a record store in Miami and a skate shop in Los Angeles so that the company could tell advertisers its readership was distributed *across* North America. . . . Such chicanery is too common in the start-up world. The norms of entrepreneurship encourage founders to be hustlers and evangelists for their companies.

Indeed legendary founders are celebrated for their ability to inspire others, even if that means stretching the truth. . . .

That's a vital skill for founders, who must persuade their audiences to temporarily suspend disbelief and see the opportunity the entrepreneur sees: a world that *could be* but is not now. However, reality distortion is a slippery slope. Enthusiasm can lead to exaggeration, exaggeration to falsity, and falsity to fraud. . . .

The Chicago economist Frank Knight was one of the first scholars to study the role of entrepreneurs in the modern capitalist system. In his 1921 book *Risk, Uncertainty, and Profit*, he distinguishes entrepreneurs from other businesspeople by their willingness to act in the face of uncertainty. . . . Entrepreneurs often don't know whether their product will work, how it will be manufactured, who the customers will be, or how they can be reached. For Knight, an entrepreneur is someone who, facing all this uncertainty, acts while others dither.

But action alone is insufficient. An entrepreneur needs others' help and must therefore be a persuasive cheerleader—when pitching VCs for funding, wooing prospective employees away from cushy jobs, persuading customers to take a chance on a new product, and instilling confidence in the team amid the start-up's vacillating fortunes.

That's the first reason some entrepreneurs are less than truthful. They transgress because they have many opportunities to do so. More than most other businesspeople, they are always "on." The second reason is that entrepreneurs have a lot on the line. . . . A thousand things must go right to earn such outsize rewards, and in any one meeting, a founder's fortunes might balance on a knife's edge. Failure can mean not just missing an enormous windfall but also letting down friends, family, employees, and investors. With stakes that high, it can be tempting to bend the truth. . . .

None of this is to say that entrepreneurs are less ethical than other businesspeople. What little research is available suggest that on average, they have *higher* moral standards than corporate managers do. But the pressures that might tempt them to be less than completely truthful are enormous—and decades of psychological study have shown that even people with high moral standards are likely to transgress in contexts in which ethical lapses are common and tolerated.<sup>134</sup>

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<sup>134</sup> See Kyle Jensen, et. al, *Entrepreneurs and the Truth*, HARV. BUS. REV., July-Aug. 2021, available at <https://hbr.org/2021/07/entrepreneurs-and-the-truth>.

We do not raise these points to argue that Jeremy is innocent. We understand that he was convicted by the jury and that Your Honor will sentence him accordingly. We make these points to illustrate certain distinctions relevant to culpability—and to the appropriate sentence to be imposed—that the Guidelines simply do not make.

**II. The need for the sentence to reflect the seriousness of the offense, promote respect for the law, and provide just punishment.**

There is no question that Mr. Barbera was found guilty of committing a serious offense. The seriousness of his offense is not, and cannot be disputed. We concede that Mr. Barbera was, at times, reckless with his statements to investors. Mr. Barbera acknowledges that much. He has reflected on his conduct and understands where he exaggerated and stretched the truth. But the sentence advocated by the government and Probation is misguided in that it fails to account for Mr. Barbera's fundamentally good character, that Nanobeak's stock was not worthless when it was purchased, and that Barbera had the best of intentions to deliver for his investors. The government fails to consider that Barbera's representations were not the proximate cause of the investors' losses.

The government and the Probation Department rely on a flawed Guidelines calculation for the reasons we discuss above. Nanobeak was not a fraudulent enterprise. It was not a vehicle for fraud. The amount of investor losses here, while substantial, should not be attributed to Mr. Barbera. Even assuming for the sake of argument that they are attributable to Mr. Barbera's conduct, in economic crime cases like this one, adherence to the Guidelines can often result in unreasonably high sentences for first-time, nonviolent offenders like Mr. Barbera due to the manner in which the "loss" amount drives the Guidelines level. The "loss" as the government and Probation calculate it is a poor measure of the seriousness of the offense. The Court is

undoubtedly familiar with the vast body of legal scholarship and judicial opinions criticizing the utility and fairness of the Guidelines—and particularly its reliance on “loss” as the primary driver of sentence length—in fashioning an appropriate sentence based on the unique characteristics of that individual and on the particular circumstances of the offense.

Accordingly, we will not belabor that discussion here, but simply provide certain excerpts from judicial opinions that are particularly apt here, particularly if the Court either uses gain as an alternative measure of the loss, or if it accepts the government’s Guidelines calculation:

- “[T]he Court has made clear repeatedly that it has serious problems with the guidelines, problems that cut across all sentences, and that those questions are most prominent when it comes to the way the guidelines approach loss calculations in white-collar cases . . . . [L]oss, if it can be calculated [contributes to] as much as 60 or 70 percent of the total calculation of the offense level [which is] grossly disproportionate to the multifaceted aspect of the crime, let alone of sentencing[.]”<sup>135</sup>
- “[T]he Guidelines place undue weight on the amount of loss involved in the fraud. . . . In many cases . . . the [loss amount] is a relatively weak indicator of the moral seriousness of the offense or the need for deterrence.”<sup>136</sup>
- “For the small class of defendants . . . convicted of fraud offenses associated with very large guidelines loss calculations, the guidelines now are divorced both from the objectives of Section 3553(a) and frankly, from common sense. Accordingly, the guidelines calculations in such cases are of diminished value to sentencing judges.”<sup>137</sup>
- “As far as this court can tell, the Sentencing Commission’s loss-enhancement numbers do not result from any reasoned determination of how the punishment can best fit the crime, nor any approximation of the moral seriousness of the crime.”<sup>138</sup>

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<sup>135</sup> *United States v. Lumiere*, No. 1:16-CR-483 (JSR) (S.D.N.Y. May 31, 2017), Tr. Sent’g Hr’g at 2:13-23 (DE 105) (Ex. 39).

<sup>136</sup> *Emmenegger*, 329 F. Supp. 2d at 427.

<sup>137</sup> *United States v. Corsey*, 723 F.3d 366, 380 (2d Cir. 2013) (Underhill, J., concurring).

<sup>138</sup> *United States v. Johnson*, 2018 WL 1997975, at \*3 (E.D.N.Y. Apr. 27, 2018).

• “As many have noted, the Sentencing Guidelines, because of their arithmetic approach and also in an effort to appear ‘objective,’ tend to place great weight on putatively measurable quantities, such as . . . the amount of financial loss in fraud cases, without, however, explaining why it is appropriate to accord such huge weight to such factor.”<sup>139</sup>

“[T]he numbers assigned by the Sentencing Commission to various sentencing factors appear to be more the product of speculation, whim, or abstract number-crunching than of any rigorous methodology—thus maximizing the risk of injustice.”<sup>140</sup>

### **III. The need for the sentence imposed to satisfy the goal of specific deterrence.**

As a result of the filing of criminal charges against him and of the guilty verdict at trial, Mr. Barbera’s reputation has been irreparably tarnished. Many of his investors were close friends and longtime business associates, and other investors were close friends of those investors. Most of them have turned their back on him. Mr. Barbera developed close relationships and gained the respect of many people he admired and worked closely with, including in the financial industry, in the field of academics, and in large, successful corporations. They respected Mr. Barbera. Now, none of them will take his calls or do business with him. He is disgraced.

His children, who have looked up to him all of their lives, now find themselves having difficulty making new friends or dating because Mr. Barbera’s name on the internet is principally associated with his arrest and guilty verdict in this case. For almost two years, he, his daughters, and his ex-wife essentially have endured what has been an endless series of traumatic experiences, from the shock of his arrest to the stress of the trial, and to the dread as to what will

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<sup>139</sup> *United States v. Adelson*, 441 F.Supp. 2d 506, 509 (S.D.N.Y. 2006), *aff’d*, 301 F. App’x 93 (2d Cir. 2008).

<sup>140</sup> *Gupta*, 904 F.Supp. 2d at 351.

be his fate in light of the jury's verdict. The prosecution and its result have impacted his physical, mental, and emotional health. *See, e.g.* PSR ¶¶ 96-98.

Mr. Barbera's professional life is in tatters. On the cusp of achieving his vision, he was compelled to resign as an officer and as a board member of Blu Biotech. All he now seeks is redemption. Indeed, if Blu Biotech becomes a commercial success, Mr. Barbera is committed to making all of the Nanobeak investors whole. Fortunately, that possibility seems more and more likely as the Blu Biotech clinical trials continue to produce successful results.

At 66 years old, with no college degree, a criminal conviction, and having experienced a very public humiliation, it is highly unlikely—notwithstanding Mr. Barbera's will and determination—that he will ever be able to raise money from investors again or start a new business. And it will be extremely difficult for him to find any employment that would require him to interface with potential investors or customers. With the stigma and other collateral consequences of a criminal conviction, Mr. Barbera is undoubtedly sufficiently deterred from ever committing another offense. In these circumstances, the “personal, business and family consequences . . . [Mr. Barbera] experienced will likely deter him from future misconduct, which mitigates the need to protect the public from further crimes he might commit.” *United States v. Redemann*, 295 F.Supp. 2d 887, 897 (E.D. Wisc. 2003). *See also, United States v. Gains*, 829 F.Supp. 669, 671 (S.D.N.Y. 1993), *aff'd* 31 F.3d 73 (2d Cir. 1994) (departing downward where the defendant's “substantial loss of assets and income” served as a specific deterrent to future wrongdoing); *Adelson*, 441 F.Supp. 2d at 514 (“With his reputation ruined by his conviction, it was extremely unlikely that he would ever involve himself in future misconduct.”); *Gupta*, 904 F.Supp. 2d at 355 (“[I]t seems obvious that, having suffered such a blow to his reputation, [the defendant] is unlikely to repeat his transgression[.]”).

**IV. The need for the sentence imposed to achieve the goal of general deterrence.**

For largely the very same reasons he will be specifically deterred from committing an offense in the future, a non-custodial sentence is also sufficient to achieve the objective of general deterrence. Indeed, any citizen in Mr. Barbera's circumstances "need only consider what happened to [him] in order to reconsider [committing a similar offense]; thus, general deterrence is served." *Redemann*, 295 F. Supp. 2d at 897. As this Court has observed in the past, it would be inappropriate to sentence a defendant for the sole purpose of "sending a message," whether to the community of entrepreneurs or the community at large:

I often say with respect to general deterrence that any sentence must be just for the individual defendant. If we impose the sentence on the basis of general deterrence that wasn't just for the individual defendant, we would end up using the law to impose sentences on individuals that were not just for the individual defendants, and that would be contrary to law.

So you expect that a sentence which is just for the individual defendant will be sufficient for purposes of general deterrence, and you ought not to be able to attempt to justify. A sentence based upon the message that it sends to others unless you can say that the sentence is just for the individual that you're sentencing. Otherwise, you're just using that defendant in a way that's not just for the individual defendant.

*United States v. Hayes*, Case No. 1:20-CR-500 (JGK) (SDNY), Tr. of 5/25/2022 Sentencing Hr'g at 51:12-52:1.

**V. The need for the sentence imposed to provide the defendant with medical care in the most effective manner.**

For decades, the Federal Bureau of Prisons has been criticized in government audits and in the media for its poor performance in providing consistent and timely health care for inmates,



especially those with chronic conditions that need regular monitoring.<sup>141</sup> With the BOP stretching its resources to address the spread of COVID-19, those issues continue to plague the BOP health care system.<sup>142</sup> Accordingly, we provide a description of Mr. Barbera's medical conditions for the Court to consider in addition to the information contained in the PSR.

In our October 17, 2022 letter to the Court, we described Mr. Barbera's [REDACTED]

[REDACTED].<sup>143</sup> For the Court's consideration, we provide a letter from [REDACTED].<sup>144</sup>

In addition to those conditions and the conditions identified in the PSR (*see* ¶¶ 89-97), Mr. Barbera recently has been suffering from [REDACTED]. Mr. Barbera has been [REDACTED]

[REDACTED]. [REDACTED]

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<sup>141</sup> See, e.g., DOJ, Office of the Inspector General, *Review of the Federal Bureau of Prisons' Medical Staffing Challenges*, Mar. 2016, available at <https://oig.justice.gov/reports/2016/e1602.pdf>; U.S. Government Accountability Office, *Bureau of Prisons*, July 2021, available at <https://www.gao.gov/assets/gao-21-502.pdf>.

<sup>142</sup> See, e.g., Walter Pavlo, *Federal Bureau of Prisons' Medical Care Falls Short of Its Own Policy*, FORBES, Apr. 19, 2022, available at <https://www.forbes.com/sites/walterpavlo/2022/04/19/federal-bureau-of-prisons-medical-care-falls-short-of-its-own-policy/?sh=4b252a805eab>; Conrad Wilson, *Inmates at Oregon's Only Federal Prison Dire Medical Care*, Oregon Public Broadcasting, Feb. 11, 2022, available at <https://www.opb.org/article/2022/02/11/oregon-prison-federal-sheridan-covid-inmate-death/>.

<sup>143</sup> See Letter from Eric M. Creizman to Hon. John G. Koeltl, dated Oct. 16, 2022 (Ex. 37).

<sup>144</sup> See Letter from Eric Grossman, MD to Hon. John G. Koeltl, dated Nov. 3, 2022 (Ex. 38).

[REDACTED]

[REDACTED]

[REDACTED]

**CONCLUSION**

For the reasons set forth in this memorandum, with exhibits, and in Mr. Barbera's objections to the Presentence Report, with exhibits, dated September 25, 2022, we respectfully submit that a sentence of Probation with a condition of one year of home confinement and a condition of substantial community service is sufficient, but not greater than necessary to achieve the purposes of federal sentencing.

Dated: New York, New York  
November 6, 2022

Respectfully submitted,

*/s/ Eric M. Creizman*

Eric M. Creizman (EC7684)

Melissa Madrigal (MM0200)

ARMSTRONG TEASDALE LLP

7 Times Square, 44th Floor

New York, New York 10036

T: (212) 209-4400

E: [ecreizman@atllp.com](mailto:ecreizman@atllp.com)

[mmadrigal@atllp.com](mailto:mmadrigal@atllp.com)

*Attorneys for James Jeremy Barbera*

**SENTENCING LETTERS**

- I. Exhibit 1—Letter from Claudia Goddard, dated November 11, 2022**

**Claudia Goddard**

**[REDACTED]**  
**New York, New York [REDACTED]**

November 1, 2022

The Honorable John G. Koeltl  
United States District Judge  
United States District Court  
Southern District of New York  
500 Pearl Street  
New York, New York 10007

Dear Judge Koeltl,

I am writing on behalf of Jeremy Barbera, and I understand that this letter will be part of your packet of documents to consider when Jeremy's sentencing comes up this month.

I am Jeremy's ex-wife. I want to show you a side of Jeremy that doesn't necessarily come up in courtrooms – the side that his family and friends know, the side that we all love.

My name is Claudia Goddard and I live in Manhattan. I am a performing arts administrator and a musician – I play for several local Hawaiian dance companies, and I also am the administrator for a Hawaiian cultural camp. I perform at many local events in theaters, parks, museums, and private events all throughout the tri-state area.

I met Jeremy at New York University in the spring of 1987, just as I was finishing up coursework for my Master's in Performing Arts Administration. He was the guest lecturer for my Marketing in the Arts class. At the time, he was the head of a marketing firm that handled theaters, symphony orchestras, museums etc. He talked about his humble beginnings selling T-shirts at Lincoln Center when he was a teenager (while also doing research at NASA's office on West 112<sup>th</sup> Street) and his subsequent journey in learning how best to market for the arts – and especially how to harness newfound computer capabilities to fill those seats at the opera, ballet, Broadway and dance. His prowess with computers and science, yet using it to service the arts, was fascinating to me. He was hiring at this firm and hired me the moment I graduated in June 1987. I only worked for him for a year and then he went to start a new company by himself. I went on to work at The Joyce Theater as their marketing director. We began dating in 1988. It was a lovely time in our lives – enjoying each other's company while experiencing the very best that New York City has to offer – going to lots of theater and music and dance, biking all around the City, trying to get him to try new foods...and rescuing dogs and cats. Yes, that was our side-line and actually, it still is....

From the first time I met Jeremy I was always so impressed by his rapid intellect, his ambition to do better and his zeal to work hard and achieve big goals in whatever industry he was in. When he learned that there was a short program at MIT for

entrepreneurs, he rushed to sign up to go to Boston. After his first week there, when he described his interactions with professors and other students, who were entrepreneurs like himself, he lit up like a Christmas tree with excitement at what he was learning. For his second week there, [REDACTED] which I hid from him because I knew if he found out he would come rushing home to my side – but there was no way I was taking him away from that precious experience at MIT. When he came home, he was pretty upset with me, but I knew I made the right call. He needed that education and connection, and [REDACTED] I am of the opinion that when you see talent like I could see in him – you have to help it flourish.

In 1991, we got married in the Central Park Boathouse. In 1992 we welcomed our first daughter Wynona. He took to fatherhood right away and doted on Wynona in every way. Always affectionate, always attentive and delighting in her every move. He did work an extraordinary number of hours, but always made time for playing around with her. [REDACTED]

finally six years later in 1999, we welcomed our second daughter Chloe, who also became the light in his life. Seeing him so lovingly interact with our daughters was such a highlight to me especially since my own father died when I was only 16 years old. Jeremy and his own father also found new connection with the coming of our two girls. Despite a harsh childhood, he and his father formed a newer, stronger bond when his dad came to work for him at his growing company. But sadly, his father unexpectedly passed away in 2000 – a huge blow that still hits him today. In addition, from that moment, Jeremy had to support his mother.

Unfortunately, Jeremy and I drifted apart and in 2001 we made the extremely difficult decision to separate.

In spite of this, Jeremy stayed extremely closely connected with me and his daughters and he has been a very generous and devoted Dad. From the start he decided to always live within 10 blocks or so from us on the Upper West Side. Because he was a workaholic - I became a stay-at-home mom and we decided the girls would live with me full-time and he could see them as often as he liked, which was often. We may have lived ten blocks apart, but we raised these precious girls together. Every important decision, we made together. He worked extremely hard to afford to keep the girls in their beloved home. He attended every school concert, every dance recital, every show at their schools. He took them to live music, theater, movies, the zoo and every now and again we would rescue another animal. A highlight for the girls every year with Jeremy was to attend Comic-Con – spending weeks plotting the costumes and planning which discussion panels to attend. For every birthday and every Thanksgiving and Christmas, Jeremy joins us for family meal and later when he re-married, she came too. If there was ever a problem, he would be at our house in mere minutes – helping out. Once, one of the cats died in the middle of the night and I called him at 4am to please help remove the dead cat before the girls would be traumatized by the sight and he was at my door at 4:10am.

In 2012 we finally made the divorce final. My divorce attorney was very impressed with how hard Jeremy worked to make sure the girls could stay in their home and remain so closely connected to us.

All the while, since 2000, Jeremy was supporting his mother. Unfortunately, she was a very difficult woman and in addition she never got over his father's death. Jeremy has no siblings and no other family, so he was entirely responsible for her. In spite of her increasingly severe medical and psychiatric problems – her wish was to remain in her apartment, and he made that happen. Despite her multiple calls a day, he always made time for her and checked on her constantly – which was not easy, when trying to run a company. When Hurricane Sandy hit, and they lost power in her building – he carried her down eight flights of stairs to safety. And he never complained. She was his responsibility, and he alone took it on until the day she died last year, at the age of 95.

Now that our daughters are adults, he is still very involved, and they always doing things together. Decisions about education, jobs, and life in general are always discussed with him. To me, the happiest sound in the world is the sound of the three of them laughing really hard. As Jeremy pivoted into working in Public Health, he always explained to us what he was working on. Again, I saw that excited light in his eyes when he was describing his work on the medical devices at his company – I was so happy for him that he could bring his smarts and tenacity and gift for hard work to this venture – and how excited he was to bring a product to market that could make huge strides in improving people's health. When Chloe decided to study Public Health at the University of Michigan – that put her and her father in the same sphere and they could talk about Public Health issues at great length. He helped place Chloe in a lab at Johns Hopkins University to learn lab procedures. Jeremy is here for our family in every way – just recently when my daughter Wynona shattered her ankle in an accident and couldn't walk for months and I unexpectedly came down with [REDACTED] at the same time as we all got shut down for the Pandemic - he still did everything he could to support us, including rescuing two dogs to gift to us and lift our spirits during the deep depression of those days. Both Jeremy and I [REDACTED]

Judge Koeltl, I know you are deliberating about the sentencing to hand down to Jeremy. I implore you not to rip him away from his daughters, who are so very, very close to him, and not to rip him away from his work. The girls and I are so proud of him and the groundbreaking work he has been doing in developing these medical devices. We want to see him succeed in this incredibly difficult journey over many years to bring about real improvements in medical detection that will help so many people. Just like when I met him and he was passionately committed to expanding audiences for the arts - which enrich us all spiritually – he is still the same fiercely smart, hard-working, nerdy, slightly goofy, passionate guy who now is climbing that hill to enhance medical care for all.

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Because both at home with his family and at work – he has demonstrated in the 35 years I have known him that it was never about just him. It's about what he can do for others.

Thank you for allowing me to tell you about the father of my daughters and to shine a light on the good man that Jeremy is. I may be the ex-wife but showing you a glimpse of the Jeremy we know and deeply appreciate was very easy for me to do.

Sincerely,

DocuSigned by:  
  
248998706078475  
Claudia Goddard



**II. Exhibit 2—Letter from Wynona Barbera, dated November 2, 2022**

**Wynona Barbera**

[REDACTED]

[REDACTED]

**New York, NY** [REDACTED]

**The Honorable John G. Koeltl  
United States District Judge  
United States District Court  
Southern District of New York  
500 Pearl Street  
New York, New York 10007**

Dear Judge Koeltl:

Your honor, I am writing to you today because you are about to make a decision that will impact me and my family in a way I don't know that we have even fully comprehended yet. While I understand and acknowledge the jury's verdict in his case, I am here to tell you about the person I have been so fortunate to call my dad, whom you know as Jeremy Barbera. I appreciate your kindness as you read this letter, and I hope that you are able to hear the love and admiration I have for him in these words. I have never been so terrified as the moment when I heard from my mother that the FBI took my father from his apartment. I remember the world standing still in what was the longest day I think I ever braved. Though I was so grateful to have his safe return, I am now at risk of this reality once again. My father is my hero, and I do not wish to go another day without full access to him ever again. If this letter can impact even a fraction of your opinion of him, I would write it a hundred times over.

Let me start by introducing myself. My name is Wynona, I am 30 years old, and I am my father's eldest daughter. I'm an animal lover, a conservationist, a scuba diver, a documentarian, and a fierce lover of the under-defended causes of the world. I grew up wanting to be a veterinarian, which later translated into a love for wildlife. In high school I focused my passions on the ocean, and I eventually fell in love with sharks. A misunderstood species; we have let fear and blind hate lead to the near eradication of one of the most crucial and special creatures to grace this planet's history. My goal in my career is to be able to be a part of changing the public's perception about them, and helping their species thrive. I hope to achieve this through the art of a documentary. This is a goal that I admit is increasingly harder to work towards while supporting myself here in New York City. As a result, I also work full time in the wine industry representing family-owned vineyards that are often overlooked by the big corporate titans of the industry. Though wine is a long way from animals, I take pleasure in supporting and uplifting the under-represented within the wine community just as I do with wildlife.

My passions are no accident. I grew up with the best example for a father I could ever ask for. A determined, passionate person, beaming with love and hope for a better world. My dad has done everything in his life for others, and that is why I grew up wanting to do the same. I will now take the opportunity to lead you through just a few of the reasons why.

My parents separated when I was fairly young. I often consider myself one of the lucky ones, because two parents have never worked harder to keep my sister and I as happy and healthy as possible through their decision to divorce. Though we were living with my mother, it was my father's mission to be a part of our lives every day in every way he could. I have endless memories of waking up in the morning, excited to start my day with seeing my dad. Despite living less than a mile from my school, a commute that could easily be accomplished in a 15 minute walk, it was instead traveled with my dad every morning. He would drive up to my mother's apartment building every weekday, pick me up, and then take "the long route" over to my school. He continued this even when I changed school buildings to a short five blocks away from my home. Sometimes we would stop at a favorite breakfast spot to have breakfast together. Sometimes we would just chat the whole ride over. Sometimes we would even pull over because we wanted five more minutes together blasting our favorite songs on the radio. My father made sure that he was always there, and that I would feel loved the moment I started my day. I think it was honestly impossible not to always start school with a smile on my face, thanks to the way he lifted me up each morning.

What I would later mature to realize is that after my father dropped me off at school, he would immediately go straight into his work day. In many cases, he was often already working all night or taking calls earlier that morning. That sacred time he took out of his everyday life to drive me to school was sandwiched between the hours of the hardest worker I know. My dad has always raised me with a "you can do or handle anything" attitude. He has extended himself above and beyond for myself and my family time and time again, and his accomplishments throughout his career were sources of incredible inspiration throughout my life. One thing about my dad is he grew up a comic book nerd who admired superheroes, and as a result he has a deeply ingrained desire to contribute to making the world a better place. I've always seen my dad as a superhero, and in some ways I believe him to have super powers of his own. When he commits to something he believes in, he throws his entire self into it. He positions himself to be the reliant and hardworking force that brings dreams to life. He would rather sacrifice his sleep and sanity than to see something deserving go undone. He put his all into his many career ventures throughout my life. Yet, despite his exhausting work schedule, I could always rely on his morning pick up to bring me to school.

Growing up watching my father create magic within the science and the arts world, I was of course inspired to follow suit myself. I was fortunate to explore many passions in my childhood, but I always experienced a similar pull as he did in his career. I was enamored with science and animal conservation, while also in love with performance art and the world of entertainment. My dad was my number one cheerleader in all these pursuits. Whether he was taking me to see local dance showcases, or to the local zoo to visit my favorite animals, he was constantly pouring love and effort into my growth. He instilled that very same superhero mentality in me. The feeling that if I am blessed to have life on this earth, that I must use that blessing to help impact it for the better. For him, that was through working on life-changing biotechnology. He helped me discover that, for me, it was through a love for animals.

My connection to animals also came from his love for life of all kinds. I grew up with several dogs and cats between both of my parents, each of them rescues. When my parents separated, one of the first things my dad did was rescue and adopt two dogs. The first, Splotch, was a victim to an often-overlooked consequence of one of New York's greatest disasters. When 9/11 happened, and we so sadly lost many lives, so many of those lives were not just fathers and mothers to children, but also to pets. Splotch was one of those pets who tragically lost their owner that day and was in need of a home. Shortly after my dad adopted Splotch, he also adopted Nelly, a greyhound who was also a retired racer. I don't know how much you know of the dog racing world, but greyhound racing is infamous for horrific dog abuse. Nelly was put through things as harsh as constant whipping so that she was never tempted to sit or relax during a race. When my dad adopted her, he tailored his environment to make her feel as safe and comfortable as possible. In time, Nelly grew to trust again, and lived a beautiful happy life with my dad and Splotch. These are just two of the stories of the pets my father has been a part of rescuing in his life. I have constant memories of fostering animals, giving back to their community, or adopting them ourselves. I even remember my dad throwing himself into traffic to grab a dog who had got loose from his owner. At my father's core, he is determined to help others, no matter what the cost to himself. That day I saw his life almost end for a small dog he had never met. Today, I reflect back on all the times he sacrificed his own comfort or safety in order to make someone else's life better.

I'm not sure if you are reading this letter before or after my mother's, but I think their relationship is another testament to why I was able to grow up as loved and supported as I was. I'm sure she will lay it out beautifully for you, but I will share my perspective for a moment. It's not exactly common to see ex-spouses in the good graces of one another. My parents' commitment to each other may have ended on a romantic level, but it never ended as parents to their children. I already mentioned just

one example of how my father consistently showed up for me, but it's amazing the ways he has also constantly showed up for her. He supported her vigorously, he invested in her future, and they have remained good friends and constant pillars for each other. My dad believed in family above everything else, so he worked tirelessly not just for the success of his children, but also for the success of their mother, even as his ex-wife. I am forever grateful for this aspect of his character.

I know you've heard about the support he also poured into his mother. My grandmother, whom I referred to as Babsha, was never the same after her husband, my dad's father, passed. It launched her into a deep depression that led her to stop taking care of herself. Unfortunately, much of my association with Babsha is associated with pain, but that didn't stop my dad from putting his all into her care. All of the work my dad has ever done has been to benefit those he loves. His sleepless nights and stress-filled days were to provide for myself, my sister, my mother, and his mother as well. Every unfortunate turn that my grandmother faced, my dad was there picking up the pieces. Even in the days she was old and not too kind towards anyone, he took constant steps towards her health and comfort. There is very little joy in supporting someone who has essentially given up on themselves, but my dad is a selfless family man. The obstacles he has navigated on behalf of his mom are monstrous, but he completed them all the same. They spoke every day. He was by her side as often as possible. He was never afraid to do the hard work himself when necessary. He's even carried her down eight flights of stairs in a blackout when she was in need of medical attention. Whether it's the little dog running into oncoming traffic, his ex-wife, or his mother, my dad is truly a superhero.

All this love and support for his family, both human and not, and my dad still managed to champion in his career. When he was not busy being a present and supportive father, he was busy attempting to make other's dreams for the world a reality. I've met colleague after colleague of his, and I've met them at institutions all over the United States. At Ames Research Center, at Johns Hopkins, at University of Michigan, just to name a few. These are all people who believed wholeheartedly in the same medical causes, and the same tech they all believe will get them there. I have been watching my father and his countless teammates work towards a better future for years. Not a day goes by where he isn't working, round the clock, to further a mission we all so desperately want to see succeed. Although the road has been incredibly challenging, he has spent each day with hope and with pride for what they are working to accomplish. I hope more than anything that he can continue on to prove what they are doing is special because it holds the potential of changing the world. I believe with every fiber of my being in what my father is doing, and I know I am nowhere near alone in that belief. My father has never shied from proudly showing me the ins and outs of

career milestones. Just as he helped give me the tools and support to follow my passions, I grew up watching him chase his.

Your Honor, I could honestly write a book on how much my father means to me. Having to sit here and account for a few memorable moments is a difficult task because my life is so filled with them. I wish I had more time to prepare and reflect, because there is so much I haven't even mentioned. His support through all of my ever-changing ventures. His attendance at every life milestone. He taught me how to drive. He taught me how to stand up for myself. He taught me to never take "No" for an answer when I was faced with rejection. He helped me gain my first ever internship. My first real job. He inspired me to reach farther than I ever thought myself capable. He encouraged my nerdy love for superheroes and we've seen every major Marvel/DC release together ever since.

Please, when making your decision, remember that my father is a good, loving person. Every decision he's ever made was out of love and support for his family. He wants nothing but to help the world and see his family thrive. My only hope is to not lose my superhero in the process.

Thank you,

Wynona Barbera

A handwritten signature in black ink, appearing to read "Wynona Barbera". The signature is fluid and cursive, with the first name being more prominent.

Email: [REDACTED]

Cell: [REDACTED]

**III. Exhibit 3—Letter from Chloe Barbera, Dated November 1, 2022**

Chloe Barbera  
[REDACTED]  
[REDACTED]

November 1<sup>st</sup>, 2022

The Honorable John G. Koeltl  
United States District Judge  
United States District Court  
Southern District of New York  
500 Pearl Street  
New York, New York 10007

Dear Judge Koeltl,

My name is Chloe, and I am the youngest daughter of Jeremy Barbera. I am 23 years old, and I currently work as a Community Ambassador for a non-profit called Community Health Action of Staten Island, where our team's mission is to improve health equity for residents of New York City public housing facilities. Of course, I am aware of my father's conviction and I understand that you will be sentencing him. However, I would like to provide you with a deeper understanding of my father's character and the impact that he has had on not only me, but countless other people.

Growing up, my father has always been my greatest inspiration. As a child, I didn't know what I wanted to do when I grew up. I just knew I wanted to be like my dad. When people would ask me what he does for a living, I would respond, "how much time do you have?" because he has done so many incredible things. From working on the production teams of hit Broadway shows to running a business that is developing life-saving nanotechnology, I truly believe there are no bounds to what he can do. His work in the public health sphere has inspired me to take on a public health role myself. When I was only 17 years-old, he got me an internship at the Johns Hopkins School of Public Health, the leading medical research university in the country. He had been collaborating with them for his work. At Johns Hopkins, I worked in a lab creating a vaccine for the Zika virus. I learned so much and loved every moment of the internship, and I feel so privileged and lucky that my father was able to expose me to such a valuable experience at such a young age. This launched my career in public health before I had even finished high school. Today, I am proud to say that I have an undergraduate degree in Community and Global Public Health from the University of Michigan School of Public Health. I credit so much of this accomplishment to my father, who inspired and guided me during every step of the way.

When my father was only 16, he left home, as his parents were alcoholics and he was unsafe in his home-environment. He biked around New York City delivering newspapers to make ends meet. When he was in his 20s, he got an apartment in Yorkville, which is the neighborhood where I live now. Entirely coincidentally, my first apartment on my own in New York City happens to be directly across the street from the one he lived in at my age. I can see his old apartment from my living room, and I look at it frequently, thinking about how much we have in common. I've always followed in his footsteps, and I got a massive head start on my public health career simply because I am his daughter. With this experience, I now have a job that allows me to give back to my community and provide free healthcare access to low-income New Yorkers living in NYCHA facilities. It feels we have come full circle.



Chloe Barbera  
[REDACTED]  
[REDACTED]

November 1<sup>st</sup>, 2022

Although my parents separated when I was two years old, and I lived with my mother from then on, my father still holds an equally impactful and loving role in my life. When he moved, he intentionally found an apartment less than a mile away from ours so that we could visit him with ease. My sister and I routinely visited his apartment and spent time with him every weekend. We would go on walks in Central Park with him and his dogs, see a movie every Sunday, and eat pizza afterward. I hold these memories very dear to my heart, as it is a tradition that I looked forward to every day. To this day, even as 23 and 30-year-olds, my sister and I still frequently spend our Sundays with him at the same movie theater, eating the same pizza. I would love nothing more than to keep on with this tradition for many years to come.

Our relationship was never limited to just the weekends. Despite my parents' divorce, they remained great friends, and it was always important to them that we spend time all together as a family. Some of my fondest memories include family trips to the zoo and aquarium. My father has always loved animals, which is a trait that was absolutely passed on to us. He used to read the book "If You Give a Moose a Muffin" to me as a child. His favorite animal is the puffin, and he would always joke that "If you Give a Puffin a Muffin" would have been a better name for the book, because it rhymes better. Puffins were always our favorite stop at the zoo, and I'm sure he would have given the puffin a muffin if he could. Sometimes I still go to the Bronx Zoo and excitedly send him pictures of the puffins, because I know they always make us smile.

Bonding over animals was one of our favorite activities, as we always had pets in the house. I remember vividly that when Hurricane Sandy hit New York, we were housing evacuated families in our apartment, and he wondered if he could help the animals too. He explained that Peter Cooper Village, the area where my grandmother lived, has a large population of squirrels that rely on the residents to feed them. He said with sorrow, "all the residents evacuated days ago. The squirrels must be starving." He had recently carried my grandmother down 8 flights of stairs in her wheelchair to get her to safety during the power outage. The next day, when the rain had died down, he bought 5 gigantic packages of peanuts for the squirrels. We went out and fed squirrels for the entire afternoon. The squirrels all came out of hiding to eat out of our hands, and we had a wonderful time together.

My father's relationship with his mother has always been an incredibly generous one. She was not only an alcoholic, but also quite mean. She would never hold back from insulting him and us and expressing her disappointment in anything we did. Despite her behavior, he continued to do everything he could to care for her. Most of his money was spent on providing her with 24-hour home care, as she was very ill in her final years. She never expressed any gratitude, but he continued, nevertheless, because he cared. Decades ago, it was in my grandfather's dying wish that his wife never be put in a nursing home, as he knew she would be miserable there. My father promised to him that he would make sure she would stay at home in their apartment. He kept his word, and she stayed there until the day she passed. He worked hard every day to make sure he could afford her health aids. He worked so often; he barely found the time to sleep. Nevertheless, spending quality time with his children was still his utmost priority. Somehow, he always found the time for us.

Chloe Barbera

[REDACTED] P. 49.1

November 1<sup>st</sup>, 2022

In my near 15 years of dancing growing up, he never once missed a competition or performance. Once, while driving to a dance competition in Long Island, we got a flat tire. I panicked, as I was captain of the team and I knew I couldn't be late. I anxiously paced about and felt hopeless that we would have to wait hours for AAA to come pick us up. But he calmed me down, and reminded me, "Have I ever let you down?" He never had, and didn't then. He adapted to the situation and miraculously got me to the competition on time. I frequently have anxiety over things that I cannot control. But whenever he is there, he assures me every time, "just because something seems impossible, its simply because I haven't done it *yet*." He always finds a way to fix things, big or small. I know I can rely on his help in absolutely any situation, and he will not stop until he knows I am doing okay.

Even when I moved away to Michigan for college, he continuously showed me that he was by my side. During this time,

[REDACTED]

My father's commitment and perseverance are some of his most inspiring qualities. He has always been the hardest working person I know. He has never been one to work a 9-5 job—he frequently works in the middle of the night, or even from his own hospital bed. Even on the day he was arrested, while he also happened to be sick with COVID-19, he got back to work the moment the police returned his phone. He does this because he cares so deeply about the work itself and the impact it will have. Currently, his company is spearheading a technology that will allow for the early diagnosis of cancer, which has the potential to save countless lives. He knows how important this technology is, and that every minute he spends on it will bring him a little bit closer to saving these lives. The work he is doing is incredible, and I cannot wait to see this technology used in everyday homes, doctor's offices, and hospitals. As a public health worker myself, his work is something we love to talk about. I am in awe every single day of the progress he and his company have made. His sentencing will not only have a great impact on my family, but also the fate of the countless people who could benefit from the technology that his company is currently working on. He is an incredible leader, and I have faith that the presence of his guidance, knowledge, and commitment is going to make a massive impact on the health of not only Americans, but the entire world.

In conclusion, my father is a generous, compassionate, and loving father whom I feel eternally grateful to have in my family. I cannot imagine the grief I would feel, going even a day without knowing he is here by my side. I love him so dearly, and he has been the utmost supporter of my life. He is my rock. Not only this, but he has a truly brilliant mind. Without being able to work, I fear that the world will miss out on all the great things that he is capable of doing and creating. Please find it in your heart to provide him leniency and spare him any sentence of imprisonment. Thank you so much for taking the time to read my letter.

Chloe Barbera

[REDACTED]

November 1<sup>st</sup>, 2022

Respectfully yours,

A handwritten signature in cursive script, appearing to read "Chloe Barbera".

Chloe Barbera