

CERTIFICATE OF SERVICE

I hereby certify that on August 12, 2021, I filed a copy of the foregoing using the FTC e-filing system and served the same by electronic mail on the following:

Administrative Law Judge:	oalj@ftc.gov
Secretary's Office:	electronicfilings@ftc.gov
Complaint Counsel:	dnaegele@ftc.gov
Counsel for Respondent Illumina, Inc.:	xhysi@cravath.com
Counsel for Respondent GRAIL, Inc.:	anna.rathbun@lw.com

/s/ Aaron Ross

Aaron Ross

UNITED STATES OF AMERICA
BEFORE THE FEDERAL TRADE COMMISSION

)	
In the Matter of)	
)	
Illumina, Inc.,)	
a corporation,)	
)	
and)	
)	
GRAIL, Inc.,)	DOCKET NO. 9401
a corporation,)	
)	
Respondents.)	
)	

DECLARATION OF DR. KEN SONG IN SUPPORT OF NON-PARTY OMNIOME INC.’S MOTION FOR *IN CAMERA* TREATMENT

I, Ken Song, declare as follows:

1. I am Executive Chairman of the Board of Directors at Omniome, Inc. (“Omniome”). I have personal knowledge of the facts set forth in this declaration and if called as a witness I could and would testify competently to such facts.

2. I am familiar with the documents Omniome produced in the above-captioned matter in response to a civil investigative demand (“CIDs”) and subpoenas *duces tecum* (“subpoena”) issued by Complaint Counsel and Respondents. I am additionally familiar with the transcripts of my investigational hearing and deposition. Given my role as Chairman of the Board at Omniome, I am familiar with the type of information contained in the materials at issue and their competitive significance to Omniome. I am also familiar with the measures Omniome takes to protect the confidentiality of these materials. I submit that the public disclosure of the materials listed on Exhibit A of Omniome’s Motion for *In Camera* Treatment (“Exhibit A”) would cause serious injury to Omniome, as discussed below. In addition, the confidentiality of

some of these materials—Omniome’s Board of Directors presentations—is not likely to diminish over time.

3. Omniome is a private venture-backed startup attempting to develop and commercialize a genetic sequencing product based on Omniome’s proprietary genetic sequencing technology. Omniome has spent hundreds of millions of dollars toward developing a proprietary genetic sequencing product, and carefully guards the details of its technology. Although some of these details are public, for example because they are contained in Omniome’s public patent filings, many of the details of the operation of Omniome’s sequencing product are not. Keeping Omniome’s confidential information and trade secrets non-public is vital to Omniome’s goal of successfully launching and commercializing its product.

4. Five of the exhibits the parties intend to introduce into evidence in this matter are presentations accompanying recent meetings of the Omniome Board of Directors. These presentations discuss Omniome’s sequencing technology and development efforts at length and in great detail, including providing internal testing data, throughput data, cost comparisons, and other technological detail. These details of Omniome’s product are trade secrets that Omniome never intends to make publicly available. Because the documents describe the workings of Omniome’s key sequencing technology, the sensitivity of the documents is unlikely to diminish over time.

5. The Board of Directors presentations also contain competitively sensitive information about Omniome’s competitive position, including descriptions of Omniome’s go-to-market plans, discussions of Omniome’s strategic positioning, information on Omniome’s valuation and cash positioning, and information comparison with competitors, internal testing data, information on Omniome’s strategic positioning, and technical roadmaps.

6. Omniome takes great care to keep all of these materials confidential. Materials distributed to the Board of Directors are marked “CONFIDENTIAL,” and Board members are instructed not to forward or share Board materials with others. Omniome’s Board of Directors meetings are non-public and I take great care not to share these non-public materials with others.

7. Two of the exhibits for which Omniome requests *in camera* treatment are confidential presentations made to Omniome’s investors. From time to time, Omniome will present to investors or potential investors. These meetings are confidential, and Omniome takes care to ensure that all participants will maintain Omniome’s information confidentially. Omniome marks all slides presented at such meetings as Confidential—as it did here. Omniome only presents these materials to an investor if that investor agrees to keep the information shared confidential. And Omniome limits the distribution lists to which it sends such presentations in order to minimize the chance a presentation will be accidentally forwarded or sent to others who are not authorized to view its contents.

8. Omniome’s investor presentations contain significant detail of and insight into Omniome’s current plans, strategies, and technological roadmap. Public disclosure of these presentations would therefore cause significant competitive harm to Omniome, as Omniome’s competitors would be able to read the details of Omniome’s current plans, current product development efforts, and current product positioning. This is true for Omniome’s presentation from April 2018, as well as Omniome’s presentation from 2021; Omniome’s 2018 presentation contained details regarding Omniome’s product which, because the product has not launched, remain nonpublic.

9. One of the exhibits for which Omniome requests *in camera* treatment is an internal spreadsheet showing the competitive landscape for sequencing technology. This

document is the result of internal Omniome competitive analysis and includes details of Omniome's yet-to-be-released product. Disclosure of this information to Omniome's competitors would cause significant harm to Omniome as it would enable Omniome's competitors to determine Omniome's plans and competitive positioning.

10. Finally, Omniome requests *in camera* treatment for portions of my investigational hearing and deposition transcripts. At my deposition and investigational hearing, I discussed Omniome's product plans and product commercialization efforts, and described how Omniome views its product, including its development and launch timeline and how the product compares to sequencing technology offered by Illumina and Grail. Public disclosure of this information would cause significant harm to Omniome, as it would enable Omniome's competitors to understand Omniome's competitive positioning and attempt to mitigate the effects of Omniome's potential entry.

11. Some of the information in my deposition transcript, such as my testimony regarding Ariosa, can be revealed without causing competitive harm to Omniome. Accordingly, I have reviewed the deposition and Investigational Hearing transcript and Omniome requests *in camera* treatment only for limited portions.

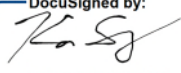
12. None of these documents are publicly available or widely disseminated. All of these documents are recent and discuss plans and strategies which are still relevant to Omniome today—especially because our sequencing product has not yet launched. Omniome provided these documents with the understanding that the FTC would afford them confidential treatment. On behalf of Omniome, I request that the FTC do so.

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Dated: August 4, 2021

DocuSigned by:

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Dr. Ken Song

Exhibit A

Exhibit A

Bates	Name	Exhibit No.	Request
Group A: Board of Directors Materials			
OMNIOME-FTC ILL-00000069	Presentation: Omniome Overview and Update, January 2018	RX____ (not provided)	Indefinite
OMNIOME-FTC-ILL-00000001	Presentation: Omniome, Inc. Board of Director's Call, April 23, 2018	PX8519	Indefinite
OMNIOME-FTC-ILL-00000570	Presentation: Omniome, Inc. Board of Director's Meeting, Sept. 17, 2019	PX8509	Indefinite
OMNIOME-FTC_ILL-00000773	Presentation: Omniome, Inc.'s Board of Directors Meeting, Dec. 29, 2019	RX____ (not provided)	Indefinite
OMNIOME-FTC-ILL-00001001	Presentation: Operational Update: Omniome Board of Directors Call, May 5, 2020	PX8510	Indefinite
Group B: Confidential Investor Presentations			
OMNIOME-FTC-ILL-00001216	Presentation: Omniome/Decheng Site Visit, Apr. 30, 2018	RX____ (not provided)	5 Years
OMNIOME-FTC ILL-00001469	Presentation: Delivering the World's Most Accurate DNA Sequencing Platform, May 14, 2021	RX____ (not provided)	5 Years
Group C: Omniome Internal Analysis			
OMNIOME-FTC-ILL-00001522	Spreadsheet: Sequencing landscape 2018_01_22_v2-GeneStudio	PX8511	5 Years
Group D: Testimony			
Dep. Transcript: Ken Song (Omniome) at 13:18-14:6; 15:7-16:17; 18:25-20:3; 20:17-31:1; 31:8-33:1; 33:13-34:11; 37:24-38:18; 39:9-13; 41:12-43:9; 44:23-25; 45:9-47:8; 48:19-49:2; 52:13-53:20; 54:22-55:7; 55:16-56:20; 101:10-21; 102:24-105:13	N/A	PX7071; RX____ (not provided)	5 years (limited portions)
IH Transcript: Ken Song (Omniome) at 14:6-15:2; 15:21-16:5; 17:22-18:20; 18:23-20:11; 21:9-22:11; 22:22-25:18; 27:1-6; 28:6-29:1; 46:3-6; 46:18-21; 52:11-13; 53:5-56:24; 59:23-64:3; 66:22-67:18; 68:9-20; 69:1-72:1; 72:5-73:3; 73:18-74:5;	N/A	PX7096	5 years (limited portions)

Bates	Name	Exhibit No.	Request
74:25-77:1; 77:13-81:22; 82:3-83:22; 84:2-85:23; 86:2-24; 87:3-88:18; 88:22-92:25; 95:21-98:24; 99:14-101:7; 104:6-7; 104:13-22; 105:3-107:23; 109:14-110:20; 137:2-7; 138:4-139:7; 140:16-25; 142:13-143:16; 143:21-145:2; 145:8-15			

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Exhibit B

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OMNIOME-FTC ILL-00000069

Presentation: Omniome Overview and Update, January 2018

Confidential – Redacted in Entirety

PUBLIC

OMNIOME-FTC-ILL-00000001

Presentation: Omniome, Inc. Board of Director's Call, April 23, 2018

Confidential – Redacted in Entirety

PUBLIC

OMNIOME-FTC-ILL-00000570

Presentation: Omniome, Inc. Board of Director's Meeting, Sept. 17, 2019

Confidential – Redacted in Entirety

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OMNIOME-FTC_ILL-00000773

Presentation: Omniome, Inc.'s Board of Directors Meeting, Dec. 29, 2019

Confidential – Redacted in Entirety

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OMNIOME-FTC-ILL-00001001

Presentation: Operational Update: Omniome Board of Directors Call, May 5, 2020

Confidential – Redacted in Entirety

PUBLIC

OMNIOME-FTC ILL-00001216

Presentation: Omniome/Decheng Site Visit, Apr. 30, 2018

Confidential – Redacted in Entirety

PUBLIC

OMNIOME-FTC ILL-00001469

Presentation: Delivering the World's Most Accurate DNA Sequencing Platform
May 14, 2021

Confidential – Redacted in Entirety

PUBLIC

OMNIOME-FTC ILL-00001522

Spreadsheet: Sequencing landscape 2018_01_22_v2-GeneStudio

Confidential – Redacted in Entirety



Deposition of:
Kenneth Song

June 2, 2021

In the Matter of:

**Illumina, Inc. and GRAIL, Inc. (In the
Matter of)**

Veritext Legal Solutions

800-734-5292 | calendar-dmv@veritext.com |

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UNITED STATES OF AMERICA
BEFORE THE FEDERAL TRADE COMMISSION
OFFICE OF ADMINISTRATIVE LAW JUDGES

In the Matter of:)
)
 ILLUMINA, INC.,)
 a corporation,)
) DOCKET NO. 9401
 and)
)
 GRAIL, INC.,)
 a corporation.)
)

ZOOM VIDEO-RECORDED DEPOSITION
UPON ORAL EXAMINATION OF
KENNETH SONG, M.D.

CONFIDENTIAL

8:14 A.M.

JUNE 2, 2021

WITNESS LOCATION: SAN DIEGO, CALIFORNIA

REPORTED BY: VICKY L. PINSON, RPR-CCR Washington 2559
California No. 9845; Oregon No. 16-0442

<p style="text-align: right;">Page 2</p> <p>1 A P P E A R A N C E S 2 (All Parties Appearing Remotely) 3 4 FOR THE PLAINTIFF ILLUMINA, INC.: 5 KATE STAMELL 6 Cravath, Swaine & Moore, LLP 7 825 - 8th Avenue, Ste 4043B 8 New York, NY 10019 9 212.474.1000 10 kstamell@cravath.com 11 12 FOR THE DEFENDANT GRAIL: 13 AL PFEIFFER 14 Latham & Watkins, LLP 15 505 Montgomery Street, Ste 2000 16 San Francisco, CA 94111 17 415.395.8898 18 al.pfeiffer@lw.com 19 MARCUS CURTIS 20 Latham & Watkins, LLP 21 12670 High Bluff Drive 22 San Diego, CA 92130 23 858.509.8465 24 marcus.curtis@lw.com 25 FOR THE FEDERAL TRADE COMMISSION: 26 DYLAN NAEGELE 27 SUSAN MUSSER 28 Federal Trade Commission - Bureau of Competition 29 400 - 7th Street S.W. 30 Washington, D.C. 20024 31 202.326.2688 32 Dnaegele@ftc.gov 33 Smusser@ftc.gov 34 35 Continuing on next page...</p>	<p style="text-align: right;">Page 4</p> <p>1 I N D E X 2 3 EXAMINATION BY PAGE 4 Mr. Naegele 7 5 Mr. Pfeiffer 32 6 Mr. Naegele 133 7 8 9 EXHIBITS FOR IDENTIFICATION PAGE 10 Exhibit 01 Omniome web page screenshot 40 11 Exhibit 02 Omniome press release - 44 12 01-09-20 13 Exhibit 03 Omniome Overview and Update - 58 14 January 2018 15 Exhibit 04 Delivering the World's Most 93 16 Accurate DNA Sequencing 17 Platform, Company Overview 18 Exhibit 05 Omniome, Inc. Board of 103 19 Director's Meeting, December 20 2nd, 2019 21 Exhibit 06 Omniome - Decheng site visit 108 22 4-30-18 23 Exhibit 07 GenomeWeb article: NIPT Firm 112 24 Ariosa Diagnostics Files for 25 IPO 26 Exhibit 08 GenomeWeb article: Illumina, 120 27 Roche Agree to Settle NIPT 28 Patent Lawsuits 29 Exhibit 09 Roche Press Release 12-2-14 123 30 31 32 33 34 35</p>
<p style="text-align: right;">Page 3</p> <p>1 A P P E A R A N C E S 2 (All Parties Appearing Remotely) 3 4 FOR OMNIOME: 5 DOUGLAS E. LITVACK 6 Davis Wright Tremaine 7 1301 "K" Street N.W., Ste 500 East 8 Washington, D.C. 20005 9 202.973.4215 10 Douglitvack@dwt.com 11 12 FOR OMNIOME and SONG: 13 GARRETT H. ANDERSON, PhD, JD 14 Attorney at Law 15 858.366.2983 16 Handerson-iplaw.com 17 18 ALSO PRESENT: 19 MIGUEL EVANGELICA, Technical Concierge 20 LORI TALBOTT, Video Specialist 21 22 23 24 25</p>	<p style="text-align: right;">Page 5</p> <p>1 San Diego, California, Washington; June 2, 2021 2 8:14 a.m. 3 * * * 4 5 (This deposition is being taken via 6 videoconference, and all parties, the 7 witness, the videographer and the court 8 reporter are appearing remotely.) 9 10 THE VIDEOGRAPHER: We're going on the record 11 at 8:14 a.m. Pacific Time on June 2nd, 2021. This 12 deposition is being conducted using virtual technology, 13 and all participants are attending remotely. Audio and 14 video-recording will continue to take place unless all 15 parties agree to go off the record. 16 This is Media Unit 1 in the video-recorded 17 deposition of Kenneth Song in the matter of Illumina, 18 Inc., and GRAIL, Inc., filed in the United States of 19 America before the Federal Trade Commission Office of 20 Administrative Law Judges, Docket No. 9401. 21 My name is Lori Talbot from the firm Veritext. 22 I am the videographer. The court reporter is Vicky 23 Pinson from the firm Veritext. I am not related to any 24 party in this action, nor am I financially interested 25 in the outcome. If there are any objections to proceeding, please state them at the time of your appearance, and we'll begin with the noticing attorney,</p>

Page 6

1 please.
 2 MR. NAEGELE: Vicky, would you please
 3 swear in the witness?
 4 (The witness was sworn by the Court.)
 5 MR. NAEGELE: My name is Dylan Naegele,
 6 and I represent the Federal Trade Commission.
 7 MR. PFEIFFER: This is Al Pfeiffer of
 8 Latham and Watkins. I represent GRAIL. And with me is
 9 my colleague, Marcus Curtis, also of Latham and
 10 Watkins.
 11 MS. STAMELL: Kate StameLL. I am from
 12 Cravath, Swaine & Moore, representing Illumina.
 13 MR. LITVACK: Doug Litvack, from Davis
 14 Wright Tremaine, representing the witness and Omniome.
 15 And I'd like to put on the record an objection
 16 to the deposition being taken by video, and any use of
 17 the dep -- of the video during any proceeding in this
 18 matter. The subpoena issued to us in the
 19 administrative proceeding didn't notice a deposition by
 20 video; and, thus, we are only proceeding to move the
 21 matter along, but we preserve our right to move to
 22 exclude the video from use at trial or any other
 23 proceeding in this matter.
 24 MR. ANDERSON: Garrett Anderson,
 25 representing the -- Ken Song and Omniome.

Page 7

1 MR. NAEGELE: And I'm joined by my
 2 colleague, Susan Musser, also from the Federal Trade
 3 Commission.
 4 * * *
 5
 6 KENNETH SONG, M.D.,
 7 sworn as a witness by the Certified Court Reporter,
 8 testified as follows:
 9
 10 EXAMINATION
 11 BY MR. NAEGELE:
 12 Q. Dr. Song, would you please state your full
 13 name for the record?
 14 A. Kenneth Song.
 15 THE WITNESS: I do want to make just one
 16 quick comment. I have multiple screens, and so if you
 17 see my eyes shifting, it's because I'm -- if there's --
 18 especially if there's an exhibit, I have to look away
 19 from where the camera is. So it's not that I'm being
 20 distracted. It's just I have different screens up.
 21 MR. PFEIFFER: Understood. Thank you.
 22 Q. What is your current position with Omniome?
 23 A. I'm the Executive Chairman of the Board.
 24 Q. What is your current location?
 25 A. San Diego, California.

Page 8

1 Q. And what address are you at?
 2 A. Currently I'm at 9880 Campus Point Drive, San
 3 Diego, California 92121.
 4 Q. Is there anyone else in the room with you?
 5 A. No.
 6 Q. What device are you using for this deposition
 7 today?
 8 A. A ThinkPad laptop.
 9 Q. Do you have any other programs or applications
 10 running on your laptop, such as instant messaging or
 11 emails?
 12 A. No.
 13 Q. Will you tell me if anyone tries to
 14 communicate with you while I'm asking questions?
 15 A. Yes.
 16 Q. Do you understand that you're testifying today
 17 under oath?
 18 A. Yes.
 19 Q. Is there any reason that you cannot give full
 20 and accurate testimony today?
 21 A. No.
 22 Q. Do you understand that you're appearing today
 23 in response to subpoenas, a tested condom issued by the
 24 Federal Trade Commission, and the Respondents in the
 25 matter of Illumina and GRAIL?

Page 9

1 A. Yeah.
 2 Q. Thank you, Dr. Song. As I mentioned earlier,
 3 my name is Dylan Naegele, and I'm an attorney with the
 4 Federal Trade Commission. I am going to ask you some
 5 questions today about Illumina and its proposed
 6 acquisition of GRAIL. Everything confidential will be
 7 covered by the protective order issued by the Federal
 8 Trade Commission's Part 3 Court.
 9 So I'd like to start by going over some ground
 10 rules for the deposition. Throughout the deposition we
 11 should both try our best not to talk over each other.
 12 Do you understand?
 13 A. Yes.
 14 Q. Please respond orally with "yes" or "no"
 15 rather than nods or the shake of the head because it's
 16 difficult for the court reporter to capture gestures.
 17 Do you understand?
 18 A. Yes.
 19 Q. If you do not hear a question, please say so
 20 and I will repeat it. If you do not understand a
 21 question, please say so and I will rephrase it. From
 22 time to time the Respondents may object to one of my
 23 questions. The objection will be noted by the court
 24 reporter. After the Respondent states his objection,
 25 you are -- or her objection, you are to answer the

Page 10	<p>1 question unless you would otherwise reveal privileged 2 information.</p> <p>3 At times I will be showing you documents on 4 the exhibit share platform and directing you to 5 specific pages or portions. If you need more time or 6 help in navigating the document, please let me know, 7 and you can have more time or I can try to assist you.</p> <p>8 I also want to remind you again that you are 9 under oath. Even though we are speaking via computer 10 screen, your answers should be as truthful as if you 11 were in front of a judge and jury.</p> <p>12 If at any point you realize you've answered a 13 question incorrectly or you remember something else 14 that would make your answer more complete, please let 15 us know and we can add to your answer right then and 16 there while it's on your mind.</p> <p>17 We will plan on taking a short break about 18 every hour or so. Please let me or my counterpart, Al, 19 know if you need a break, and I'm sure we'll be happy 20 to accommodate as long as there's no question pending.</p> <p>21 Now, while we are on the record, please 22 refrain from communicating with anyone unless 23 you're using -- unless it's via Zoom. Please also 24 refrain from using a chat, email messages, or text 25 messaging platform while we're on the record. And</p>	Page 12	<p>1 A. Yeah, I'm just sort of scrolling through it. 2 I didn't read the -- obviously I'm not reading the 3 entire document because it's long.</p> <p>4 MR. PFEIFFER: Please don't. 5 THE WITNESS: I know -- yeah.</p> <p>6 A. So I've -- I've looked at it. 7 Q. Is this a transcript of your testimony that 8 you gave on March 24th, 2021? 9 A. Yes. 10 Q. Is everything that you said in the 11 investigational hearing accurate to the best of your 12 knowledge? 13 A. So based -- you know, not having reviewed the 14 entirety of what's been shown in front of me, assuming 15 that this is the same as what was shared with me 16 through the testimony, it would be, assuming that's -- 17 this is the same document, then, yes. 18 Q. Yes, this is the same document. Thank you. 19 Dr. Song, I'd like to show you another exhibit 20 marked for identification as PX8519. Could you please 21 let me know when you see it on your screen? It will 22 take a minute. 23 MR. NAEGLE: All right. The file should 24 be available to everyone now. 25 Q. Dr. Song, can you see the -- the exhibit?</p>
Page 11	<p>1 lastly, please let me know if anyone tries to 2 communicate with you through any other platform.</p> <p>3 And before I begin, a few other things. When 4 I say NGS, I mean Next-Generation Sequencing. When I 5 say NIPT, I mean noninvasive prenatal testing. And 6 when I say IVD, I mean in vitro diagnostic.</p> <p>7 Dr. Song, I'd like to show you a exhibit now. 8 You should see it on your screen momentarily. Do you 9 see it? 10 A. Not yet. 11 Q. Okay. 12 MR. PFEIFFER: Yeah, I'm not -- I'm not 13 seeing anything yet either. 14 MR. LITVACK: Me, neither. 15 MR. NAEGELE: All right. My computer is 16 being slow. Does anyone see the exhibit now? 17 THE WITNESS: I still don't have anything. 18 A. Let me open it up. 19 Q. (By Mr. Naegele) So this exhibit is marked 20 for identification as PX7071. Do you see this exhibit 21 on your screen, Dr. Song? 22 A. Yes. 23 Q. Please take a minute to read over and review 24 this document, and let me know when you have done so. 25 Have you had a chance to review the document?</p>	Page 13	<p>1 A. I'm just clicking on it right now, yes. 2 Q. Would you please take a minute to read over 3 and review this document and let me know when you've 4 done so. 5 A. I reviewed the document. 6 Q. What is this document? 7 A. Sorry, can you repeat the question? 8 Q. Certainly. What is this document? 9 A. This is -- it looks like it's a presentation 10 that was put together for a call with the Board of 11 Directors. 12 Q. Was this document presented on April 23rd, 13 2018? 14 A. I would -- I would assume so. I can't recall 15 if this actually was the exact date and if it was on 16 that date particularly; but based upon the date of the 17 cover, that -- that's what I would assume. 18 Q. Is the -- to your knowledge is the date 19 approximately accurate? 20 A. To the best of my knowledge, it would be. 21 Q. Would you please turn to page PX8519-019? 22 You'll see the page numbers in the bottom right corner. 23 A. Oh, I see. Okay. You said 019? 24 Q. 019. 25 A. Okay.</p>

Page 14

1 Q. Please let me know when you're at the page.
 2 A. I'm at the page.
 3 Q. Do you see where it says Scenario 1?
 4 A. Yes.
 5 Q. What was Scenario 1?
 [Redacted]
 [Redacted]
 [Redacted]
 [Redacted]
 [Redacted]
 [Redacted]
 [Redacted]
 [Redacted]
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Page 16

[Redacted]
 [Redacted]
 [Redacted]
 [Redacted]
 6 Q. Did Omniome commercially launch its sequencer
 7 at the end of Q2-2020?
 8 A. No.
 9 Q. Thank you.
 10 Dr. Song, I'd like to show you another exhibit
 11 marked for identification as PX85019 [sic]. Please let
 12 me know when you can see the exhibit.
 13 MR. PFEIFFER: What was the exhibit number
 14 again?
 15 MR. LITVACK: Yeah, I'm not seeing it.
 16 MR. NAEGELE: It's PX8509. It currently
 17 says it's distributing file, and it's got a progress
 18 bar that's moving very slowly.
 19 Q. (By Mr. Naegele) All right. Dr. Song, do you
 20 see the file now?
 21 A. Yep. I just opened it up.
 22 Q. Yes. Please take a moment to read and review
 23 the document, and let me know when you've done so.
 24 A. I'll scroll to the, towards the end of it.
 25 Takes a little time to upload.

Page 15

[Redacted]
 [Redacted]
 3 Q. What would the advantage of -- sorry, let me
 4 strike that.
 5 Was there an advantage to outsourcing certain
 6 engineering aspects?
 7 A. Part of that would have been to see if there
 8 was certain expertise or capabilities that might be
 9 external that we could leverage. And I believe there's
 10 also some considerations as to whether or not that
 11 could have an impact on both timelines as well as
 12 overall spending.
 13 Q. What would the impact on the timelines be?
 14 A. I don't remember.
 15 Q. Do you recall what the impact on spending
 16 would have been?
 17 A. I think that's outlined on slide PX8519-019.
 18 So I don't recall the specifics of that, but I believe
 19 that information is outlined on the slide.
 20 Q. Thank you.
 [Redacted]
 [Redacted]
 [Redacted]
 [Redacted]
 [Redacted]
 [Redacted]

Page 17

1 (The Reporter requested the witness speak up.)
 2 (Off the record.)
 3 Q. (By Mr. Naegele) Have you had a chance to
 4 review the document, Dr. Song?
 5 A. Yes.
 6 Q. What is this document?
 7 A. This is a board of directors' presentation for
 8 the Omniome Board of Directors.
 9 Q. Was this presentation given on September 17th,
 10 2019?
 11 A. I assume so, again, based upon the date on the
 12 front cover. But I can't say with certainty that it
 13 was actually on that date.
 14 Q. To the best of your knowledge, was this given
 15 on or around that date?
 16 A. Yes.
 17 Q. Would you please turn to page PX8509-055?
 18 Please let me know when you have the page up in front
 19 of you.
 20 A. I have it in front of me.
 21 Q. What does this page depict, Dr. Song?
 [Redacted]
 [Redacted]
 [Redacted]
 [Redacted]
 [Redacted]
 [Redacted]

Page 22

[REDACTED]

12 Q. Would you please turn to page PX 8510-010, and

13 let me know when you've reached that page.

14 A. I'm there.

15 Q. What does this page depict?

16 A. It's putting out different scenarios around

17 the timing of the commercial launch of the instruments

18 using different assumptions.

19 Q. Do the blue arrows on this page represent

20 timelines?

21 A. Yes.

[REDACTED]

Page 24

[REDACTED]

Page 23

[REDACTED]

Page 25

[REDACTED]

19 Q. What is Instrument Control Software?

20 A. As I understand it, it's basically the

21 software that is written to ensure that all of the

22 different components within the instrument -- there's a

23 lot of fluidics and optics and mechanics that are

24 moving around within that, and they all need to be

25 coordinated. So it's about having the software written

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1 to ensure that all of those pieces are functioning
 2 properly and communicating with each other.
 3 Q. Does the software need to be written for a
 4 specific instrument?
 5 A. To my knowledge, yes.
 6 Q. And what does Systems Integration mean in this
 7 context?
 8 A. It's -- it involves multiple things, the full
 9 details of which I'm not really under -- I don't know
 10 the details of it -- of -- but I think from a basic
 11 level, it's about having all the different components
 12 coming together, which is both within the instrument as
 13 well as the consumables, like the reagents, the flow
 14 cell. And ensuring that all those things are working
 15 together. And also even the software and the
 16 informatics, to make sure that all those are
 17 communicating and functioning together as one system,
 18 so systems integration.
 19 Q. What does "production" mean in this context?
 20 A. I think my -- to my -- to my recollection,
 21 production is around producing the instruments. Once
 22 you've sort of gone through and verified that it's
 23 working, then the time it takes to actually start
 24 making the instruments to the final specifications for
 25 delivery.

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1 [REDACTED]
 2 [REDACTED]
 3 [REDACTED]
 4 [REDACTED]
 5 [REDACTED]
 6 [REDACTED]
 7 Q. Thank you.
 8 Dr. Song, will you please turn back to your IH
 9 transcript, PX7071?
 10 A. Okay.
 11 Q. Would you please turn to page PX7071-007?
 12 A. I'm there.
 13 Q. All right. Sorry, PX7071-008.
 14 A. I'm there.
 15 Q. Do you see the quadrant of the page marked 28?
 16 A. Yes.
 17 Q. And do you see about halfway down in that
 18 quadrant the bold text that says: And when does
 19 Omniome anticipate the commercial launch of its
 20 sequencer?
 21 A. Yes.
 22 Q. Will you please just take a minute to
 23 familiarize yourself with the, the page?
 24 A. Yes.
 25 Q. You gave this testimony on March 24th, 2021.

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1 Correct?
 2 A. Yes.
 3 Q. And that testimony was accurate?
 4 A. It was accurate based upon my understanding on
 5 March 24th, 2021 of, of what I knew of the company at
 6 [REDACTED]
 7 [REDACTED]
 8 [REDACTED]
 9 [REDACTED]
 10 [REDACTED]
 11 [REDACTED]
 12 [REDACTED]
 13 [REDACTED]
 14 [REDACTED]
 15 [REDACTED]
 16 [REDACTED]
 17 [REDACTED]
 18 [REDACTED]
 19 [REDACTED]
 20 [REDACTED]
 21 [REDACTED]
 22 [REDACTED]
 23 [REDACTED]
 24 [REDACTED]
 25 [REDACTED]

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1 [REDACTED]
 2 Q. Thank you.
 3 MR. NAEGELE: We've been going for about
 4 an hour now. Let's take a break.
 5 And, Dr. Song, is five minutes good for you?
 6 THE WITNESS: Yep, that's fine. I'm going
 7 to switch over to phone audio in the break, and that
 8 might work better. So let me do that.
 9 THE VIDEOGRAPHER: One moment, please, and
 10 I'll take us off the record. We're going off the
 11 record at 8:59.
 12 (Recess taken 8:59 a.m. - 9:13 a.m.)
 13 THE VIDEOGRAPHER: We are back on the
 14 record. The time is 9:13. Please proceed.
 15 Q. (By Mr. Naegele) Dr. Song, during your IH you
 16 testified that when you were CEO of Ariosa, Ariosa
 17 changed its Harmony NIPT test from Illumina NGS to
 18 affymetrix microarrays. Is that correct?
 19 MR. PFEIFFER: Objection. Leading.
 20 A. Yes.
 21 Q. What types of applications are microarrays
 22 best suited for?
 23 A. Traditionally, microarrays had been originally
 24 developed for genotyping and gene expression analysis.
 25 Q. Why are microarrays -- strike that.

<p style="text-align: right;">Page 30</p> <p>1 Are microarrays well-suited for those 2 applications?</p> <p>3 A. For which application? The genotyping and the 4 gene expression, or --</p> <p>5 Q. Yes.</p> <p>6 A. I mean, when they -- I mean, they were -- they 7 were commonly -- yeah, they were designed and they were 8 mostly used, to my knowledge, for those applications, 9 and then over time they've been sort of replaced with 10 sequencing.</p> <p>11 Q. Why have they been replaced with sequencing?</p> <p>12 MR. PFEIFFER: Object to the form of the 13 question. Lacks foundation.</p> <p>14 A. I mean, to my knowledge, I mean, with 15 sequencing you're generally able to do things at a 16 higher throughput. And potentially, you know, you 17 could also do things, depending on the application, 18 sometimes at a lower cost depending upon the platform.</p> <p>19 Q. To your knowledge, is the throughput of a 20 microarray comparable to the throughput of a sequencer?</p> <p>21 A. I think it depends on the application that 22 you're looking at and the -- it really depends upon the 23 sequencing platform and the microarray platform that 24 you're comparing.</p> <p>25 Q. At the time that you -- at the time that</p>	<p style="text-align: right;">Page 32</p> <p>1 time. But you would be able to get much more 2 throughput or number of patients analyzed with the 3 NovaSeq than you would have been able to do with what 4 we were doing at the time with an array-based readout.</p> <p>5 MR. NAEGELE: Great. Well, I will reserve 6 the rest of my time and pass the table over to my 7 counterpart, Mr. Pfeiffer.</p> <p>8 MR. PFEIFFER: Thank you.</p> <p>9 * * *</p> <p>10</p> <p>11 EXAMINATION</p> <p>12 BY MR. PFEIFFER:</p> <p>13 Q. Dr. Song, we met briefly earlier this morning, 14 but my name is Al Pfeiffer, and I represent GRAIL. And 15 I'm going to ask you some questions now. You all set? 16 Need any breaks or anything? You good?</p> <p>17 A. I'm good.</p> <p>18 Q. Okay. So you understand you're here in 19 connection with the FTC trying to block the merger 20 between GRAIL and Illumina. Is that right?</p> <p>21 A. Yes.</p> <p>22 Q. What -- what's your general understanding 23 about what that lawsuit's about?</p> <p>24 A. My understanding is that the FTC has 25 competition concerns around Illumina's acquisition of</p>
<p style="text-align: right;">Page 31</p> <p>1 Ariosa switched its test to microarrays, was the 2 throughput comparable to the sequencers that you were 3 using?</p> <p>4 A. At the time, yes.</p> <p>5 Q. To your knowledge, is the throughput of a 6 microarray comparable to a sequencer like the NovaSeq?</p> <p>7 MR. PFEIFFER: Object to the form of the 8 question. Lacks foundation.</p> <p>9 A. The NovaSeq would have higher throughput for 10 most applications than you would be able to do on a 11 microarray-based platform.</p> <p>12 Q. When you say "most applications," what do you 13 mean?</p> <p>14 A. I mean, I can't -- it's always hard to say 15 extremes of all or none. I would say that if you're 16 comparing a NovaSeq to microarray technology, at least 17 based on what I can think about, I don't really see -- 18 you know, I believe the NovaSeq would be able to give 19 you more throughput and more information based upon the 20 applications I can think about than you would be able 21 to accomplish with an array-based readout.</p> <p>22 Q. What applications are you thinking about?</p> <p>23 A. Gene expression -- you know, gene expression 24 analysis, genotyping, you know. And then as it related 25 to Ariosa, the NovaSeq instrument did not exist at the</p>	<p style="text-align: right;">Page 33</p> <p>1 GRAIL and how that could potentially lead toward, you 2 know, possible anticompetitive behavior in the 3 marketplace.</p> <p>4 Q. Did you ever review the Complaint that the FTC 5 filed?</p> <p>6 A. Not in detail, no.</p> <p>7 Q. But -- but you looked at it?</p> <p>8 A. I'm trying to -- I mean, I'm trying to 9 remember. If I looked at it, it was very -- I am under 10 oath, so I'm trying -- I believe I may have opened it, 11 but I don't -- it would have been a while ago, and, 12 again, I don't, I would not recall any of the specifics 13 within that Complaint.</p> <p>14 Q. How did you come to even open it and look at 15 it, in general?</p> <p>16 MR. LITVACK: I'm just going to interject 17 and caution the witness not to reveal any privileged 18 information.</p> <p>19 A. Again, I don't -- I can't -- I mean, I 20 honestly cannot recall if I've actually seen the 21 complaint. I've seen a lot of things through this, you 22 know, because I've been under testimony, et cetera. So 23 I can't say with actually any certainty that I've 24 actually seen the Complaint. I'm just trying to 25 recall. It's possible that I could have seen it. If</p>

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1 it is, I'm not sure how I would have seen, and if I
 2 did, I don't recall any of the specifics. Because if I
 3 did review it, of which I'm not certain, it would -- I
 4 don't have any recollection of any details within it.
 5 Q. Now, you mentioned earlier in connection with
 6 Ryan's questioning that you remembered having testimony
 7 taken at the investigative hearing process. We looked
 8 at that exhibit. Right?
 9 A. The March 24th testimony?
 10 Q. Yes.
 11 A. Yes.
 12 Q. Apart from that testimony itself, did you
 13 speak with anyone at the FTC at any time during the
 14 time they've been investigating or suing GRAIL and
 15 Illumina?
 16 A. There was -- aside from that testimony, there
 17 was, from what I recall there was a brief conversation
 18 where the FTC had reached out. And then that's when
 19 I -- I believe I had sort of contacted the counsel that
 20 I have here representing -- or not -- or helping me
 21 out.
 22 Q. When was that brief conversation?
 23 A. Probably a couple of months ago or a few
 24 months ago. It would have been before the -- the
 25 March -- the testimony.

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1 Q. And who did you talk to? Do you remember?
 2 A. I can't say with certainty. I don't want to
 3 guess nor -- yeah.
 4 Q. What did you talk about?
 5 A. It was, I think it was just, um -- it was
 6 so -- I think they, I think they had just reached out
 7 to me. I don't -- again, I don't remember any of the
 8 specifics. It was, it was nothing that I can recall --
 9 there was, from my recollection, there was nothing that
 10 was discussed of any specifics or of substance. It was
 11 just reaching out to see if they could sort of connect
 12 with me. That's the best I can recall. At which point
 13 I then contacted legal counsel to understand what we
 14 should do in terms of -- because I didn't know in terms
 15 of what context that I was being specifically reached
 16 out to.
 17 Q. Okay. Did -- did the FTC --
 18 A. But then I had --
 19 (Simultaneous cross-talking.)
 20 (The Reporter requested clarification.)
 21 A. Then I had the testimony in March that we have
 22 the exhibits on.
 23 Q. (By Mr. Pfeiffer) So when the FTC reached out
 24 to you before your investigative hearing testimony, did
 25 they explain at all why they were calling you?

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1 A. I honestly don't remember the details.
 2 Q. You don't remember it even being in the
 3 context of, "Hey, we have a reason why we're reaching
 4 out to you"?
 5 A. I, I don't, actually.
 6 Q. And have you spoken to anyone from the FTC
 7 after your investigational hearing? After your March
 8 testimony?
 9 A. I -- no. I don't believe so. I can't, I
 10 can't recall having any interaction with them until
 11 today.
 12 Q. And how long have you been the Executive
 13 Chairman of the Board at Omniome?
 14 A. About four years.
 15 Q. And just at a high level, what is the business
 16 that Omniome is in?
 17 A. Developing a sequencing -- next-generation
 18 sequencing system.
 19 Q. So -- and that's what Illumina does, too.
 20 Right? They sell next-generation sequencing systems?
 21 A. Yes.
 22 Q. So you're at least at some level intending to
 23 be competing with Illumina. Right?
 24 A. Yes.
 25 Q. And when was Omniome actually founded?

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1 A. I don't know the exact date. It was probably
 2 a few years before I got -- I believe it was a few
 3 years before I got involved officially.
 4 Q. And one of the founders of Omniome was someone
 5 who used to work at Illumina. Is that right?
 6 MR. NAEGELE: Objection. Leading.
 7 A. The founder and original CEO was a gentleman
 8 who, to my understanding, was employed by Illumina
 9 prior to him founding Omniome.
 10 Q. Did you overlap with him?
 11 A. Briefly.
 12 Q. So when did -- when did that original founder
 13 then cease being involved with Omniome?
 14 A. Once I became executive chairman of the
 15 company, he left the company, I believe, within the
 16 first -- we separate -- we transitioned him, I believe,
 17 within the, within several months after I became
 18 executive chairman.
 19 Q. So then would it be fair to say you think he
 20 left sometime in 2017?
 21 A. Yes.
 22 Q. Okay. In your role as executive chairman,
 23 what interactions, if any, do you have with Omniome's
 24 existing and potential investors?
 25 A. With a subset of the investors, they have

<p style="text-align: right;">Page 38</p> <p>1 board representation. So with them there's 2 interactions during board meetings and -- and 3 potentially at other times. 4 With some investors, I have little to no 5 contact with them. 6 Q. And how about with potential investors? What 7 role, if any, do you have with identifying and 8 communicating with potential investors? 9 A. That's been variable over my time as executive 10 chairman. In certain times I've interacted with 11 potential investors, and -- and in other times I've 12 had, again, little to no interaction with potential 13 investors. 14 Q. So as part of that responsibility, then, when 15 you do have interactions with investors, do you keep 16 yourself apprised of the company's general business 17 strategies? 18 A. Yes. 19 Q. And do you sometimes review materials that 20 Omniome prepares for either existing or potential 21 investors? 22 A. Yes. 23 Q. Now, you were asked a couple of questions 24 earlier that related to Ariosa. And I just want to, in 25 terms of your background, ask about that. When were</p>	<p style="text-align: right;">Page 40</p> <p>1 sequencing by binding. 2 Q. Yeah. And -- 3 MR. PFEIFFER: Where did it go? I wanted 4 to show you a document, and my screen just went blank. 5 Hang on. 6 Marcus, would you -- would you please post 7 to the Marked Exhibits folder the Omniome web page 8 screenshot? 9 There we go. It should be at the top of the 10 list. It'll say Exhibit 01, Omniome website. 11 (Exhibit 01 was marked for identification.) 12 Q. (By Mr. Pfeiffer) Do you have that on your 13 folder? 14 A. Yes. 15 MR. PFEIFFER: Okay. And I will represent 16 for the record this is a document that -- marked 17 Exhibit 01 that we screenshotted and converted to PDF 18 in the course of this proceeding. From Omniome's 19 website. 20 Q. (By Mr. Pfeiffer) And you'll see there -- 21 well, first of all, have you visited the company's 22 website? 23 A. I have, in the past. 24 Q. Does this appear to you to be a page from your 25 website?</p>
<p style="text-align: right;">Page 39</p> <p>1 you at Ariosa? 2 A. I was at -- I first became involved with 3 Ariosa, I believe it was in late 2009 when we first 4 identified the opportunity. And then I became the CEO 5 in 2010 and served as a CEO until its acquisition in 6 early 2015. 7 Q. Did you stay on some period of time after 8 Roche acquired Ariosa in that acquisition? 9 A. Yes. 10 Q. How long? 11 A. It was a little bit more than a year. 12 Q. In what capacity? 13 A. I continued on -- I believe my official title 14 became General Manager post the acquisition, and Site 15 Head also, of the location that continued post the 16 acquisition. 17 Q. Now, I want to come back to Omniome and your 18 work there. You mentioned earlier that Omniome is 19 currently developing an NGS-based device. Is that 20 right? 21 A. Yes. 22 Q. Okay. Would you please just describe that -- 23 that sequencer system at a high level? 24 A. It is a short-read sequencing technology that 25 uses a novel sequencing biochemistry that we call</p>	<p style="text-align: right;">Page 41</p> <p>1 A. This is actually the first time I've seen this 2 particular page. So. 3 Q. Any reason to believe this is not what you 4 currently have posted in your website? 5 A. No. 6 Q. And you'll see there, it does -- it says, 7 "Sequencing by binding from Omniome," right across the 8 sort of center of the page. Correct? 9 A. Correct. 10 Q. And that sequencing by binding is distinct -- 11 distinct from a different type of next-generation 12 sequencing. Right? 13 MR. NAEGELE: Objection. Leading. 14 A. It refers to the biochemistry of the 15 sequencing reaction. 16 Q. Are you also familiar with a type of chemistry 17 called sequencing by synthesis? 18 A. Yes. 19 Q. And you're not using sequencing by synthesis, 20 are you? 21 A. No. 22 Q. Again, at a high lay level, how do the two 23 technologies differ? 24 A. The technologies differ in the way that the 25 different individual nucleotides or bases are</p>

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1 synthesized as you're trying to determine the DNA
 2 sequence of a sample.
 3 Illumina's sequencing by synthesis uses
 4 fluorescently-labeled nucleotides that become
 5 covalently incorporated into a growing DNA strand. And
 6 they do both what we call a incorporation and an
 7 interrogation step at the same time, using a
 8 fluorescently-labeled nucleotide.
 9 Sequencing by binding actually decouples the
 10 incorporation and the interrogation steps. And
 11 ultimately what gets put into the sequenced DNA strand
 12 is a natural nucleotide that's not modified. Whereas
 13 with sequencing by synthesis from Illumina, you are
 14 adding in engineered or modified nucleotides into the
 15 synthesized DNA strand.
 16 Q. Thank you.
 17 In the interest of not tripping over my tongue
 18 all day here, will it be okay with you if I refer to
 19 sequencing by binding as SBB and sequencing by
 20 synthesis as SBS?
 21 A. That's fine.
 22 Q. And if I understood you correctly, a moment
 23 ago you said that Illumina's NGS system is based on an
 24 SBS chemistry?
 25 A. Yes.

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1 Q. And Omniome's technology is based on an SBB
 2 chemistry?
 3 A. Yes.
 4 Q. Okay. Which do you consider to be superior?
 5 A. I mean, "superior" is relative. Um, there
 6 are -- are differences between the two, so I think
 7 that's more of a judgment call.
 8 Q. Okay. Well, why did you choose SBB at
 9 Omniome? It wasn't because you thought it was worse,
 10 was it?
 11 A. No. There are -- there are advantages with
 12 using SBB in terms of being able to have higher
 13 accuracy of sequencing as compared to SBS.
 14 Q. Are there other advantages that you have also
 15 identified between the SBB chemistry that you use and
 16 the SBS chemistry that Illumina uses?
 17 A. We believe that with SBB you have the
 18 potential to also get longer sequence read as compared
 19 to SBS. And because of the way the particular steps
 20 are done with SBB, the reagent costs could also be less
 21 than what is being done with SBS.
 22 MR. PFEIFFER: Marcus, will you please put
 23 up to the marked file Tab 1?
 24 Q. (By Mr. Pfeiffer) You should see shortly
 25 hopefully what will be marked as Exhibit 02. Not yet.

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1 There we go.
 2 (Exhibit 02 was marked for identification.)
 3 Q. Do you see Exhibit 02, Omniome press release,
 4 January 9th, 2020?
 5 A. Yes.
 6 Q. And you may want to --
 7 A. Zoom in on it.
 8 Q. Yeah, I was going to suggest zooming in. That
 9 would probably help.
 10 MR. PFEIFFER: For the record, what has
 11 been marked as Exhibit 02 is a press release on the
 12 Omniome website that we downloaded and converted to PDF
 13 in the course of preparing for this proceeding.
 14 Q. Let me know when you've had a chance to look
 15 that over, please, Dr. Song.
 16 A. I've looked it over.
 17 Q. Do you recognize this document?
 18 A. Not this exact document, but the press
 19 release, the content of it, yes.
 20 Q. Yes. Yeah, you're familiar with the press
 21 release even if not in this PDF form?
 22 A. Yes.
 23 Q. And do you see, if you look down toward the
 24 bottom of the page, there's a quote attributed to you.
 25 A couple of sentences there?

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1 A. Yeah.
 2 Q. Would you look that over, please? You see
 3 that?
 4 A. Yes.
 5 Q. And is it your practice to review press
 6 releases that contain quotes from you before they're
 7 released?
 8 A. Yes.
 9 Q. Do you have any reason to believe that this is
 10 not a true and accurate press release issued on or
 11 about January 9th, 2020?
 12 A. No.
 13 Q. Now, right under the title, there, it says:
 14 Company raises \$145 million in 18 months to complete
 15 development and early commercialization of breakthrough
 16 DNA sequencing platform.
 17 Do you see that?
 18 A. Yes.
 19 Q. Was that an accurate statement?
 20 A. At the time, that was our understanding. So,
 21 yes.
 22 Q. And mainly it was accurate that you had raised
 23 \$145 million in 18 months. Correct?
 24 MR. NAEGELE: Objection. Leading.
 25 A. That's correct.

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1 Q. Have you raised any additional capital since
 2 January 2020?
 3 [REDACTED]
 4 [REDACTED]
 5 [REDACTED]
 6 [REDACTED]

7 Q. Okay. And how many rounds of financing were
 8 involved in that \$145 million that was raised over
 9 18 months? Do you recall?

10 A. I don't know the exact number because there
 11 was a Series B financing, and I don't remember if there
 12 was an extension or second part to that or not.

13 Q. Does it ring a bell that this \$60 million
 14 financing is, was a Series C financing?

15 A. Yes.

16 Q. Okay. So it sounds like you would have had an
 17 A, a B, and a C?
 18 [REDACTED]
 19 [REDACTED]
 20 [REDACTED]
 21 [REDACTED]

22 Q. If you look down within the press release,
 23 you'll see a quote before yours that is -- it's right
 24 about the middle of it, attributed to Dave Mullarkey,
 25 president and CEO at Omniome. Do you see that?

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1 A. Yes.

2 Q. The quote reads: Our product development
 3 efforts are advancing rapidly and shifting toward
 4 delivering our first beta prototype instruments.
 5 And was that an accurate statement at the time
 6 it was made?

7 A. I would -- that's a statement from Dave
 8 Mullarkey, so I can't speak on his behalf, but he was
 9 the former CEO of Omniome, and that quote would be
 10 attributed to him.

11 Q. And you were at the time the executive
 12 chairman of the company. Correct?

13 A. Yes.

14 Q. You wouldn't have wanted the company to be
 15 putting out a press release related to a financing that
 16 contained inaccurate information, would you?

17 A. No.

18 Q. Okay. So as far as you knew, it was accurate
 19 at that time?

20 A. Yes.

21 Q. Now, so Mr. Mullarkey is no longer the CEO.
 22 Is that correct?

23 MR. NAEGELE: Object to form.

24 A. That is correct.

25 Q. When did he leave?

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1 A. Um, it was -- well, I think we had, um, asked
 2 him to transition late summer, early fall of 2020. But
 3 he had a continued sort of consulting arrangement with
 4 the company until, I think through the end of 2020.

5 Q. Just to make sure I understood, did you say he
 6 transitioned out of being CEO in approximately
 7 mid-2020?

8 A. It was, it was more, I think -- I think it was
 9 sort of in the September 2020 timeframe, give or take
 10 several weeks. I can't remember the formal separation
 11 date, but it was around then.

12 Q. And who's your current CEO?

13 A. We don't have one.

14 Q. Okay. Who is -- who is fulfilling the
 15 functions of a CEO?

16 A. It depends on what you consider a CEO's
 17 functions to be. We have a president of the company
 18 currently.

19 Q. Who's the president?

20 A. Richard Shen, S-h-e-n.

21 Q. Did you mention also that you hired a chief
 22 product officer?

23 A. That was Richard Shen, who we hired, that then
 24 was promoted to president.

25 Q. Okay. And if I understood what you were

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1 saying earlier this morning, it sounded like you
 2 thought that the company's development skills were
 3 good. Is that fair?

4 MR. NAEGELE: Object to form. Leading.

5 A. I -- earlier this morning, I would say
 6 depending upon what timeframe you looked at Omniome's
 7 history, Omniome has always had very strong research in
 8 early development, and the product development
 9 discipline did not come really until Richard Shen
 10 joined.

11 Q. And would the product development that you're
 12 referring to then be something necessary to achieve
 13 commercialization?

14 A. Yes.

15 MR. NAEGELE: Objection. Lack --

16 Q. (By Mr. Pfeiffer) And would you have
 17 preferred if you'd had that -- well, actually, let me
 18 ask you to what extent did Mr. Shen bring that
 19 expertise that you thought you were lacking before?

20 A. I think when Richard joined the company to
 21 actually have the responsibility to drive towards
 22 product development, that was a pretty significant
 23 addition to the company; to be able to have a leader
 24 who had the authority to help drive activity forward.
 25 Prior to Richard, we didn't have that.

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1 Q. Would you have liked to have had that sooner?
 2 MR. NAEGELE: Object to form.
 3 A. Hindsight's always 20/20. So I would say, you
 4 know, if we had to replay history, it would have been
 5 nice to have someone like Richard in the company
 6 earlier.
 7 Q. Would you be further along in the development
 8 process, do you think, if you had had someone with
 9 skills like Richard in the company earlier?
 10 MR. LITVACK: Objection. Calls for
 11 speculation.
 12 THE WITNESS: I just have a -- I just have
 13 a process question. When someone objects, am I
 14 supposed to wait for someone to sort of comment on
 15 that, or --
 16 MR. PFEIFFER: No. No judge is -- yeah,
 17 no judge is going to rule on them. You go ahead and
 18 answer them. The objection is made and preserved for
 19 the record.
 20 THE WITNESS: All right.
 21 A. I think it's hard to -- I think it's hard to
 22 say because there was still a lot of technology
 23 development that was going on at the company. I think
 24 we would have had better visibility and a, and more
 25 discipline and an understanding of what resources and

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1 organization would be needed to get a product out.
 2 Whether that would have shifted the timelines in one
 3 direction or the other is really difficult to say
 4 because, you know, even since Richard's come on board
 5 as chief product officer, we have made some
 6 modifications to the product specification.
 7 Q. And, again, would you have preferred to have
 8 had that greater visibility and discipline earlier?
 9 MR. NAEGELE: Object to form.
 10 MR. LITVACK: Asked and answered.
 11 MR. NAEGELE: Speculation as well.
 12 A. That would have -- yes, that would have been
 13 preferred.
 14 MR. PFEIFFER: And just for the record,
 15 there are two lawyers here representing Mr. -- Dr. Song
 16 and the company. You actually -- since you're
 17 representing the same people, you don't get to both
 18 object, if you were. I don't know if you both were
 19 because I can't see.
 20 MR. LITVACK: So the FTC is objecting as a
 21 party in the case. And this is Doug Litvack, who
 22 represents the witness who is also objecting on behalf
 23 of the witness.
 24 MR. PFEIFFER: I couldn't tell if anybody
 25 else objected because I can't see all the screens.

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1 Thank you.
 2 MR. LITVACK: No problems.
 3 MR. PFEIFFER: That's so we're all on the
 4 same page.
 5 MR. LITVACK: Yeah, We're all on the same
 6 page.
 7 Q. (By Mr. Pfeiffer) Are you familiar -- you
 8 mentioned a prototype earlier. Do you recall that
 9 discussion earlier this morning?
 10 A. Yes.
 11 [REDACTED]
 12 [REDACTED]
 13 [REDACTED]
 14 Q. Is that sometimes also referred to as a "beta"
 15 or do you guys not use that terminology?
 16 MR. NAEGELE: Object to form.
 17 A. Some people -- some people use that
 18 terminology. I have come to appreciate people use
 19 different terms -- alpha, beta, prototype -- without
 20 always having clear distinction between those.
 21 (The Reporter clarified speaker identification
 22 for previous objection.)
 23 MR. NAEGELE: That was me. I objected to
 24 form.
 25 Q. (By Mr. Pfeiffer) So is "prototype" how you

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1 would refer to it? Is that what would be most
 2 comfortable for you if I refer to it that way rather
 3 than a beta?
 4 A. Either one is fine for me.
 5 [REDACTED]
 6 [REDACTED]
 7 [REDACTED]
 8 [REDACTED]
 9 [REDACTED]
 10 [REDACTED]
 11 [REDACTED]
 12 [REDACTED]
 13 [REDACTED]
 14 [REDACTED]
 15 [REDACTED]
 16 [REDACTED]
 17 [REDACTED]
 18 [REDACTED]
 19 [REDACTED]
 20 [REDACTED]
 21 [REDACTED]
 22 [REDACTED]
 23 [REDACTED]
 24 [REDACTED]
 25 [REDACTED]

[Redacted text block]

Page 56
[Redacted text block]

25 Q. If you -- if you turn back to the press

[Redacted text block]

Page 57
1 release, please.
2 A. Okay.
3 Q. If you go down to the quote that's attributed
4 to you, you'll see that there's a quote that comes
5 before your name, and then there's the rest of the
6 quote.
7 A. Yes.
8 Q. If you look at the second part of the quote,
9 it says: The goal and vision have always been to
10 develop a disruptive sequencing technology, taking into
11 account accuracy, speed, throughput, and cost. The
12 team's success in advancing product development across
13 these dimensions has attracted considerable interest
14 from top-tier investors.
15 Was that an accurate statement at the time you
16 made it?
17 A. Yes.
18 Q. To your understanding, what was it about
19 Omniome and its technology that was -- had attracted
20 considerable interest from top-tier investors?
21 A. I think probably one of the most notable
22 features was the improved accuracy of SBB over SBS.
23 Q. And when you refer to accuracy, what do you
24 mean?
25 A. Sequencing error. And we refer to it as

Page 58 Page 60

1 actual single raw-read error.

2 Q. And to your understanding, which technology,

3 which chemistry is more accurate? The SBB that you use

4 or the SBS that Illumina uses?

5 MR. NAEGELE: Object to form.

6 A. Based on what we've been able to evaluate and

7 study, we believe that the SBB chemistry has higher

8 accuracy.

9 MR. PFEIFFER: Marcus, would you put up

10 the next Tab 2 document, please?

11 THE WITNESS: Is this Exhibit 03?

12 MR. PFEIFFER: Exactly, Exhibit 03.

13 And, for the record, Exhibit 03 is a

14 PowerPoint deck entitled "Omniome Overview and Update,"

15 dated January 2018, the first page of which bears the

16 Bates label Omniome FTC_ILL-00000069.

17 (Exhibit 03 was marked for identification.)

18 Q. (By Mr. Pfeiffer) Do you have that document?

19 A. I do.

20 Q. What is this document?

21 A. Oh, sorry, I was just -- I was -- hold on.

22 It's refreshing. I'm trying to go back to the first

23 screen.

24 Q. Sure.

25 A. It's a Omniome presentation providing an

Page 59 Page 61

1 update.

2 Q. And in your role as executive chairman, did

3 you tend to see business overviews and updates?

4 A. I did. Not all the time.

5 Q. Any reason to believe you didn't see this one?

6 A. I'd say that the -- I would have seen likely

7 the content of this. Whether or not I would have seen

8 this particular presentation, I'm not sure.

9 Q. And was it part of the regular course of

10 operations at Omniome to prepare and then retain

11 documents of this type?

12 A. It was -- depending on who -- yeah, it was

13 pretty common to prepare it. I'm not sure what you

14 mean by "retain."

15 Q. Oh, just this came to us from your files. And

16 I assume that you have a computer system where you keep

17 documents. Right?

18 A. Yeah.

19 Q. Okay. Okay. I want to ask you just about a

20 few slides in particular. If you would scroll down to

21 the page that at the bottom ends in 074.

22 A. I'm there.

23 [REDACTED]

24 [REDACTED]

25 [REDACTED]

1 Q. In terms of those companies you've just been
2 discussing, how many of them, to your knowledge, are
3 offering a blood-based early detection cancer screening
4 test today that people can actually go out and ask
5 their doctor to get for them?

6 MR. NAEGELE: Object to form.

7 A. Well, you inserted the word "screening." So I
8 don't know how many are offering -- there's definitely
9 use of liquid biopsy tests for patients who already
10 have cancer and for monitoring.

11 For screening of an asymptomatic population,
12 there may be. I -- again, I'm not as deeply involved
13 in this field as I used to be. I don't know if there's
14 any bona fide blood-based screening tests for cancer
15 that one can easily access. There might be. I just, I
16 personally don't know.

17 Q. So would you consider both the symptomatic
18 population-based test and the asymptomatic screening
19 test to both be target customers for NGS sequencing
20 machines?

21 A. Yes.

[REDACTED]

[REDACTED]

19 Q. And are you aware of other companies who, like
20 Omniome, are in the process of developing alternative
21 sequencers?

22 A. Yes.

23 Q. Who else is out there as potential
24 competitors?

25 A. Singular Genomics is a company, as well as

1 another company that's in the development stage would
2 be considered Element Biosciences. And then there is a
3 company called MGI, which is a spin -- some
4 relationship to BGI from China, which also has a
5 sequencing system.

6 Q. Okay. What about Oxford Nanopore? Are you
7 familiar with them?

8 A. Yes.

[REDACTED]

21 Q. Thank you.

22 Would you go next to the slide ending in 082?
23 It says: Core Enabling Technology Sequencing By
24 Binding, SBB.

25 A. I'm there.

[REDACTED]

Page 70

[REDACTED]

Page 72

[REDACTED]

2 Q. Would you go to the next slide, please, the
3 one that ends in 083?
4 A. Yes.
[REDACTED]

Page 71

[REDACTED]

Page 73

[REDACTED]

4 Q. So someone then doesn't have to use any
5 specific type of library consumables?
6 A. Yeah. You could design -- you could work
7 with -- you could -- the chemistry could work with a
8 multitude of different types of, different sort of
9 library prep processes.
10 Q. Are those sometimes referred to as "library
11 prep kits"?
12 A. Yes.
13 Q. And are there different manufacturers of
14 library prep kits out there?
15 A. Yes.
16 Q. Not just Illumina; right?
17 A. That's correct.
[REDACTED]

Page 74

[REDACTED]

[REDACTED]

6 Q. Okay. Thank you.

7 Mr. Pfeiffer: I think we've been going

8 about an hour. Why don't we take another short break?

9 THE WITNESS: Okay.

10 THE VIDEOGRAPHER: We are going off the

11 record at 10:22.

12 (Recess taken 10:22 a.m. - 10:36 a.m.)

13 THE VIDEOGRAPHER: We are back on the

14 record. The time is 10:36. Please proceed.

15 Q. (By Mr. Pfeiffer) Dr. Song, I wanted to ask

16 you to turn back to an exhibit that you looked at

17 earlier this morning. It'll be in the folder with the

18 number PX8509. It's that September 17th, 2019 board

19 deck.

20 A. I have it open.

21 Q. Oh, great. Okay. Within that, if you would

22 turn to the slide ending in, it's PX8509-018. It has

23 the Bates number ending in 0586.

24 A. Okay.

[REDACTED]

Page 76

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

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[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

Page 77

[REDACTED]

2 Q. If you turn within the same slide deck, then,

3 to the slide -- it's Slide 26 of the slide deck, and it

4 ends in the Bates No. 596.

5 A. Wait. Slide 20 -- wait.

6 Q. Only -- only some of the slides have numbers.

7 Apparently only the odd pages have numbers on the

8 slides themselves the way this is depicted. But if you

9 go to, it's, the Bates number ends in 596 and the PX

10 number ends in 028.

11 A. Oh, yeah, yeah, yeah, I see that. Yeah.

12 Okay.

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

Page 78

[Redacted text block]

Page 80

[Redacted text block]

Page 79

[Redacted text block]

Page 81

[Redacted text block]

23 Q. Yeah. But you're still placing the bet that

24 you are going to be viable and will attract demand?

25 MR. NAEGELE: Object to form.

1 A. I mean, we obviously are going forward and
2 still planning on developing a product, yeah.

[Redacted content]

1 A. Yes.

[Redacted content]

[Redacted content]

23 Q. If you go to -- it's a couple forward now.
24 It'll be Slide 40. And the page has a Bates number
25 ending 610 and the PX number ending in 042.

[Redacted content]

24 Q. And -- and Omniome considers its sequencers to
25 be more accurate than Illumina's. Right?

Page 90

[REDACTED]

Page 92

[REDACTED]

Page 91

[REDACTED]

Page 93

1 Okay. Why don't we go back to the folder.
2 MR. PFEIFFER: And, Marcus, if you would
3 please put up Tab 4.
4 Q. (By Mr. Pfeiffer) You should now have a
5 document titled Exhibit 04, Omniome FTC? Do you see
6 that?
7 A. Yes.
8 (Exhibit 04 was marked for identification.)
9 Q. Okay. If you'd open that for me, please.
10 MR. PFEIFFER: And for the record, I'll
11 state while this is coming up that this is a PowerPoint
12 document entitled "Delivering the World's Most Accurate
13 DNA Sequencing Platform, Company Overview." And it
14 says "David Mullarkey, president and CEO" under that.
15 It was produced to us from Omniome's files, and it
16 bears the Bates label from Omniome ending in 01469 on
17 the first page.
18 Q. (By Mr. Pfeiffer) Do you have that document
19 in front of you?
20 A. I do.
21 Q. Okay. What is this document?
22 A. Just looking through it, it's actually the
23 first time I've seen this template, actually. So this
24 would be --
25 Q. Okay.

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1 A. -- the first time I'm actually seeing this
 2 document because I don't, I don't recognize
 3 the template. But just flipping through it, the
 4 contents, it's -- I'm familiar with the content. Or if
 5 I, if I saw the template, it's not -- it's not really
 6 ringing a bell. So -- but the content is, it just
 7 looks like it's been formatted differently than what
 8 I've seen.
 9 Q. If you'd take a look at the slide ending in
 10 471. It's entitled "Leadership." Do you have that
 11 slide?
 12 A. Yeah, it's just refreshing it right now.
 13 Q. Oh, okay.
 14 A. I'm scrolling around. Yes, I'm at that slide.
 15 Q. Does that help you place approximately when
 16 this leadership team would have been in place?
 17 A. Yeah.
 18 Q. What does it tell you?
 19 A. I would say -- I mean, this was definitely
 20 before -- it's interesting. This would have been --
 21 yeah, because I'm looking at Kathy. I think she left
 22 in the summer of last year. So this would have been
 23 before the summer of 2020. So I would -- you know, I'm
 24 trying to see if there's other points, and I see the
 25 number of employees. This is probably, like, an

Page 96

[REDACTED]

Page 95

1 early -- if I had to take my best-educated assumption,
 2 I would say that -- I could probably hone it in better.
 3 But I would say it's maybe first half 2020, late 2019.
 4 Q. Okay.
 5 A. Just based upon the leadership. I'm sure
 6 there might be other clues in the deck that could --
 7 Q. Yeah. And feel free if you see other clues
 8 that help pin that down any further.
 9 If you turn to the seventh slide in the deck,
 10 there are some smaller numbers at least on some of the
 11 slides, but it's the page ending in 475.
 12 A. Yeah.
 13 Q. It's entitled "Our Cost" -- or our, rather,
 14 "Our Competitive Advantage."
 15 A. Yes.
 16 Q. And then next to it, it says: Next-generation
 17 sequencing, NGS, system with leading accuracy, cost and
 18 flexibility.
 19 Do you see that?
 20 A. Yes. Yes.

[REDACTED]

Page 97

[REDACTED]

Page 102

1 documents.

2 Q. Do you know approximately how many patents you

3 have that relate to the various components of your

4 eventual NGS sequence you're offering?

5 A. I don't know how many are directly related.

6 We have a lot of patents that we have filed. I don't

7 know what proportion of those are directly related to

8 the configuration that we would go to market with.

9 Q. Well, let's start with just how many patents

10 do you know that you have at this point that you've

11 applied for? Let's -- let's --

12 A. So, yeah, so --

13 Q. Let me start over so that's a clearer

14 question. Sorry.

15 Approximately how many patents do you

16 understand you have applied for at Omniome?

17 A. Yeah, so both pending and issued, still in

18 progress, you know, in all different countries and

19 jurisdictions, I believe we have over 200.

20 Q. Why did you apply for those patents?

21 A. One, because there was innovation that

22 happened at the company. So if there was novel

23 inventions, and so we wanted to credit that.

24 And then I think ultimately as we think about

25 both our core product and there's a lot of innovation

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1 that happens in the field, we wanted to make sure that

2 we built a robust patent state to, (a), protect our

3 product, but also ensure that we protect any new ideas,

4 whether or not they be relevant to our products, that

5 might be potentially relevant to what other people are

6 doing in this space or beyond.

7 Q. I think that's it for this document.

8 MR. PFEIFFER: Marcus, would you please put up

9 Tab 5?

10 Q. (By Mr. Pfeiffer) There it is. Do you have

11 it yet? You should see Exhibit 05.

12 A. I have it.

13 (Exhibit 05 was marked for identification.)

14 Q. And for the record, this is a PowerPoint

15 document that is entitled "Omniome, Inc., Board of

16 Director's Meeting, December 2nd, 2019," produced from

17 Omniome's files, with the Bates number ending in 0773

18 on the first page. Is that the document you have in

19 front of you?

20 A. Yeah.

21 Q. And to the best of your understanding, was

22 this a board deck presented in connections with a board

23 meeting in December of 2019?

24 A. Yes.

25 Q. If you'd go within this document to Slide 21,

Page 104

1 please.

2 A. 21. What is the --

3 Q. Sorry. Yeah, it doesn't have the Bates

4 numbers at the bottom. It should say 795 at the

5 bottom. My apologies.

6 [REDACTED]

7 [REDACTED]

8 A. I'm almost -- it's just taking a little bit of

9 time to load.

10 Q. Yeah, no worries. Just let me know when you

11 have it.

12 A. Yep, I'm there.

13 [REDACTED]

14 [REDACTED]

15 [REDACTED]

16 [REDACTED]

17 [REDACTED]

18 [REDACTED]

19 [REDACTED]

20 [REDACTED]

21 [REDACTED]

22 [REDACTED]

23 Q. All right. Well, I'm not going to ask you

24 more about that if it's not being actively pursued.

25 Why don't we go ahead within this to the slide ending

Page 105

1 in 811.

2 A. Okay.

3 [REDACTED]

4 [REDACTED]

5 [REDACTED]

6 [REDACTED]

7 [REDACTED]

8 [REDACTED]

9 [REDACTED]

10 [REDACTED]

11 [REDACTED]

12 [REDACTED]

13 [REDACTED]

14 [REDACTED]

15 [REDACTED]

16 [REDACTED]

17 [REDACTED]

18 [REDACTED]

19 [REDACTED]

20 [REDACTED]

21 [REDACTED]

22 [REDACTED]

23 [REDACTED]

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[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

Page 108

1 A. I have this.

2 Q. Great. If you would open that, please.

3 MR. PFEIFFER: And for the record, I'll

4 note that what's been marked as Exhibit 6 is a document

5 entitled Omnium/DeCheng site visit --

6 A. Yes.

7 (Exhibit 06 was marked for identification.)

8 Q. -- April 30th, 2018, produced from Omnium's

9 files with the Bates number ending in 1216.

10 Do you have that document?

11 A. Yes.

12 Q. Can you tell me what this document is?

13 A. It appears to be a PowerPoint that was made in

14 preparation for Decheng, which is one of our investors.

15 And I, I recall they did visit. I think it's as

16 part -- I can't remember in connection with which

17 financing it was, but, but this would have been made

18 for them.

19 Q. Does it ring a bell that Decheng led Omnium

20 Series B funding round?

21 A. Yes.

22 Q. And in terms of a site visit, what's that

23 referring to?

24 A. I believe this is when they came to visit us

25 in person.

Page 107

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

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1 Q. So in connection with that fundraising?

2 A. That would be my assumption, although I'm not

3 certain. But that would most -- that would make sense.

4 Q. If you'd turn, please, to Slide 38, which is

5 the page ending in 1264, so it's quite a -- it'll take

6 a while to get you there.

7 A. 1264, you said?

8 Q. Yeah, the Bates number at the bottom should

9 say 1264. I'm actually still waiting for it to open

10 myself. At the top it should say: Omnium up to 10x

11 lower price per giga base.

12 Do you see that?

13 A. Yes.

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

24 MR. PFEIFFER: Marcus, would you please

25 put up Tab 6?

Page 110

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

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[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

21 MR. NAEGELE: Object to form.

22 MR. PFEIFFER: Let's take a break. We've

23 been going again about -- about an hour. I'm about to

24 change topics. And let's take a short break, if that

25 works for you. And since you're yawning, I think that

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1 A. Yes.

2 Q. So do you recall when Ariosa announced its

3 intention to -- to proceed with an IPO?

4 A. I don't recall the exact dates. It was

5 sometime in 2014, though, I believe.

6 Q. And you did at Ariosa actually file a Form S-1

7 registration statement with the SEC, didn't you?

8 A. Yes.

9 Q. Does March 26th, 2014 sound about right for

10 that S-1?

11 A. Yeah, pro- -- that seems like a reasonable

12 time period.

13 Q. Let's see if we can pin that down anymore.

14 MR. PFEIFFER: Marcus, would you put up

15 Tab 6, please -- or seven. Tab 7.

16 Q. (By Mr. Pfeiffer) There we go.

17 A. Okay. I have it up.

18 Q. I'll represent to you and for the record

19 what's been marked as Exhibit 7 is an article from the

20 GenomeWeb website dated "NIPT Firm Ariosa Diagnostics

21 Files for IPO," dated March 26, 2014.

22 (Exhibit 07 was marked for identification.)

23 Q. Are you familiar with GenomeWeb?

24 A. Yes.

25 Q. Who are they?

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1 probably works for you.

2 THE WITNESS: Okay. Sorry about that.

3 MR. PFEIFFER: No worries.

4 THE VIDEOGRAPHER: We are going off the

5 record at 11:31.

6 (Recess taken 11:31 a.m.- 11:43 a.m.)

7 THE VIDEOGRAPHER: We are back on the

8 record. The time is 11:43. Please proceed.

9 Q. (By Mr. Pfeiffer) Dr. Song, I wanted to

10 change topics a bit and discuss your time back at

11 Ariosa, which you may recall there were -- there were a

12 number of questions directed to you about your time at

13 Ariosa in your March testimony. Do you recall

14 generally that topic area?

15 A. Yes.

16 Q. So I want to follow up on some of what was

17 discussed there. One of the things that was discussed

18 there was a patent infringement lawsuit that Illumina

19 filed against Ariosa in 2014. Do you recall that

20 general subject?

21 A. Yes.

22 Q. And there was particularly some testimony

23 about the relationship between that lawsuit and a

24 potential IPO that Ariosa had been considering. Do you

25 recall that?

Page 113

1 A. They're an industry trade publication. I

2 believe they're mostly online.

3 Q. And you'll see that this article refers to

4 Ariosa as having filed for an IPO?

5 A. Yes.

6 Q. Does that refresh your recollection that it

7 was at least on or around March 26th, 2014?

8 A. Yes.

9 Q. Okay. Now, in your testimony back in March,

10 you had referred to Illumina suing Ariosa for patent

11 infringement, but that came well after you filed your

12 Ariosa S-1, didn't it?

13 MR. NAEGELE: Object to form.

14 A. I remember it just because it occurred on the

15 day that we were supposed to launch our IPO road show.

16 Q. Okay. Had you disclosed to Illumina that you

17 were launching your road show for your IPO?

18 A. No. But a press release from NASDAQ, I

19 believe, with a pricing range was released publicly on

20 the eve before Illumina filed its patent infringement

21 lawsuit against us.

22 Q. Oh, so -- so you think the night before

23 Illumina filed its patent infringement lawsuit is when

24 NASDAQ issued its press release about your IPO pricing?

25 A. I -- that's what I recall, is that there was a

<p style="text-align: right;">Page 114</p> <p>1 formal -- because we filed the IPO. There's some 2 period of time that transpires before an IPO road show 3 would start. And it's really once that road show 4 starts with a pricing range that then I would say it's 5 pretty well-known in the industry that you'll be then 6 trading as a public entity. At least back in 2014 it 7 was about two weeks after that date. 8 Q. You're not suggesting that -- that Illumina 9 put together a complaint overnight and filed it the 10 next day because you were going to be going out with 11 your pricing road show, are you? 12 MR. NAEGELE: Object to form. 13 MR. LITVACK: Objection. Mischaracterizes 14 his testimony. Unnecessarily argumentative. 15 Go ahead and answer, Ken. 16 A. I, so, I mean, this is -- I don't know, 17 obviously, exactly for certain what they did or did not 18 do. My -- I'm left with the impression that they had 19 already prepared that and they were waiting for the 20 opportune time to release it, which, to me, seems that 21 it occurred the day after there was a -- they would've 22 well -- I believe it -- I believe it was well known 23 that we would begin our road show and start pricing two 24 weeks later. I don't think that's a mystery to anyone. 25 So that's at least -- to me, it seemed like it was more</p>	<p style="text-align: right;">Page 116</p> <p>1 This argument -- this article wasn't written by Ken 2 Song, so I'm not sure what you're asking him. 3 MR. PFEIFFER: You really have to stop 4 with the speaking objections. That's going to be very 5 problematic. You can object to the form of the 6 question, and then we'll go on from there. 7 Q. (By Mr. Pfeiffer) Sir -- 8 MR. NAEGELE: I also object on the 9 foundation as well. 10 Q. (By Mr. Pfeiffer) It's consistent with your 11 understanding, having been at Ariosa as its CEO, that 12 it sued Sequenom in 2011. Is that right? 13 A. Yes. 14 Q. Okay. And then it also says in early 2012 15 Sequenom returned volley and sued Ariosa, alleging 16 patent infringement. Is that also correct to your 17 understanding? 18 A. It was -- I believe it's on the same patent 19 matter between us sort of doing a declaratory judgment 20 and then them coming back and suing us on that specific 21 patent. 22 Q. And the last sentence in that paragraph says: 23 Later that year, Verinata and Stanford University also 24 took Ariosa to court accusing it of patent 25 infringement.</p>
<p style="text-align: right;">Page 115</p> <p>1 than just a coincidence. I don't believe that they 2 prepared it overnight. I believe that it had already 3 been prepared in advance. 4 Q. But you don't know when -- why they filed it 5 when they filed it. You're speculating. Right? 6 MR. NAEGELE: Object to form. 7 A. That's -- yes. 8 Q. Now, if -- if you look at this web -- 9 GenomeWeb article, Exhibit 7, if you turn to the 10 paragraph, I guess, fourth up from the bottom that 11 begins "In addition." Do you see that paragraph? 12 A. On the first -- on the first page? 13 Q. Yes. Sorry, on the first page, fourth 14 paragraph up from the bottom, beginning with the words 15 "In addition." 16 A. Yes. 17 Q. It says: In addition to being highly 18 competitive, the NIPT space has been -- has been highly 19 litigious. 20 Do you see that? 21 A. Yes. 22 Q. And then next to that it says that in 2011 23 Ariosa actually sued Sequenom to invalidate a patent. 24 Is that right? 25 MR. LITVACK: Objection on foundation.</p>	<p style="text-align: right;">Page 117</p> <p>1 Is that also consistent with your recollection 2 that in 2012 Verinata and Stanford sued Ariosa for 3 patent infringement? 4 A. Yes. 5 Q. And that was prior to Illumina acquiring 6 Verinata, wasn't it? 7 A. I believe so. 8 Q. And that Verinata/Stanford case wasn't 9 resolved by the time you filed your S-1 in 2014, was 10 it? 11 A. It was not. 12 Q. But there had been a claim construction 13 hearing that supported the view that Ariata -- Ariosa, 14 rather, had infringed the Verinata and Stanford 15 patents. Is that right? 16 MR. NAEGELE: Objection. Foundation. 17 A. Yeah, I don't recall the details of timing 18 around -- it's, like, I don't know what the claim 19 construction and this and that and what the outcomes. 20 I don't recall the dates around that in relation to the 21 IPO. 22 Q. Okay. We'll let that speak for, I guess -- 23 there'll be other records of that. 24 Are you suggesting that Illumina's 2014 25 infringement suit after it bought Verinata was not</p>

<p style="text-align: right;">Page 118</p> <p>1 well-founded?</p> <p>2 MR. NAEGELE: Object to form.</p> <p>3 A. Yeah, I think our -- yeah, our belief is that</p> <p>4 that infringement lawsuit that they filed against us</p> <p>5 was not -- that there was no credible basis for that.</p> <p>6 Q. In fact, didn't a federal jury ultimately find</p> <p>7 for Illumina on that patent claim and award it millions</p> <p>8 in damages?</p> <p>9 MR. NAEGELE: Objection. Leading.</p> <p>10 A. So, you know, I know that they're -- at least</p> <p>11 during our, my tenure at Ariosa, and shortly thereafter</p> <p>12 through my involvement with Roche, there was multiple</p> <p>13 patent matters in dispute with multiple appeals going</p> <p>14 back and forth.</p> <p>15 I think we've been very consistent, at least</p> <p>16 my view, and the company, Ariosa's view has been very</p> <p>17 consistent throughout, that we did not have, we did not</p> <p>18 infringe on any patents that were being accused against</p> <p>19 us.</p> <p>20 Q. Were you not aware that a federal jury did</p> <p>21 find for Illumina on the patent infringement claim</p> <p>22 against Ariosa and award it millions in damages?</p> <p>23 MR. NAEGELE: Objection. Leading.</p> <p>24 A. No, I'm aware of that, but I also -- I don't</p> <p>25 recall whether -- again, I just stopped following the</p>	<p style="text-align: right;">Page 120</p> <p>1 Tab 10, please?</p> <p>2 Q. (By Mr. Pfeiffer) You should see now what's</p> <p>3 Exhibit 08.</p> <p>4 A. Okay.</p> <p>5 Q. Would you open that, please?</p> <p>6 A. Yes.</p> <p>7 Q. I think you may have just referred to this.</p> <p>8 This is a GenomeWeb article from May 26, 2001, entitled</p> <p>9 "Illumina, Roche Agree to Settle NIPT Patent Lawsuits."</p> <p>10 (Exhibit 08 was marked for identification.)</p> <p>11 Q. Is that the article you thought you saw</p> <p>12 recently?</p> <p>13 A. Well, I don't -- yeah, I just saw the tag</p> <p>14 line. I don't know that I saw the actual GenomeWeb</p> <p>15 article because I don't have a subscription to</p> <p>16 GenomeWeb.</p> <p>17 Q. Okay. If you take a look within this, I guess</p> <p>18 it's the fourth paragraph in Exhibit 08, it says,</p> <p>19 "Verinata Health, acquired by Illumina in 2013,</p> <p>20 initially filed suit against Ariosa Diagnostics in</p> <p>21 2012" at the beginning of it. Do you have that?</p> <p>22 A. Yes.</p> <p>23 Q. You'll see there in the next to last sentence,</p> <p>24 it says: In June 2018, a jury awarded Illumina</p> <p>25 \$26.7 million in damages for patent infringement</p>
<p style="text-align: right;">Page 119</p> <p>1 back and forth. I don't know if that was -- I can't</p> <p>2 recall if that was formally appealed or whatnot. And</p> <p>3 then I -- I do believe I saw something recently that</p> <p>4 there was ultimately some type of settlement, again.</p> <p>5 But I don't know what patent matters and what the</p> <p>6 outcome of that was. It was just something that was</p> <p>7 published, I think, just a few weeks ago, actually.</p> <p>8 Q. And we may come to that. Were you aware that</p> <p>9 the federal circuit affirmed that jury verdict in</p> <p>10 Illumina's favor of infringement by Ariosa on appeal</p> <p>11 after it was appealed?</p> <p>12 A. On which patent -- again, which patent?</p> <p>13 Q. The patent suit under, in the 2014 Illumina</p> <p>14 lawsuit that you talked about being close in timing to</p> <p>15 your road show.</p> <p>16 A. Again, I, that sounds familiar. Again, I --</p> <p>17 it is, I literally just did not -- it was the different</p> <p>18 lawsuits. I don't -- I don't know ultimately the final</p> <p>19 fate of what happened and all the back and forth.</p> <p>20 Particularly since post our being acquired in 2015 and</p> <p>21 my departure from Roche in 2016, I definitely did not</p> <p>22 keep as close tabs on this as I had when I was at</p> <p>23 Ariosa.</p> <p>24 Q. Let's take a look --</p> <p>25 MR. PFEIFFER: Marcus, would you put up</p>	<p style="text-align: right;">Page 121</p> <p>1 stemming from the 2014 lawsuit.</p> <p>2 Do you see that?</p> <p>3 A. Yes.</p> <p>4 Q. Do you have a basis to dispute what's said in</p> <p>5 that GenomeWeb article?</p> <p>6 A. No.</p> <p>7 Q. Okay. Than it subsequently says: Ariosa</p> <p>8 appealed, and in April 2020 the U.S. Court of Appeals</p> <p>9 for the federal circuit affirmed the lower court's</p> <p>10 decision.</p> <p>11 Do you have a basis to dispute that statement?</p> <p>12 A. Nope.</p> <p>13 Q. Now, did Ariosa ultimately complete the IPO</p> <p>14 that it submitted the S-1 for in March of 2014?</p> <p>15 A. No.</p> <p>16 Q. And Ariosa ultimately was acquired by Roche,</p> <p>17 you said. Right?</p> <p>18 A. Yes.</p> <p>19 Q. And Ariosa actually ended up raising more</p> <p>20 money by Roche buying it than it had planned to raise</p> <p>21 through an IPO, didn't it?</p> <p>22 MR. NAEGELE: Object to form. Leading.</p> <p>23 A. I don't know by "raised." I mean, Roche ended</p> <p>24 up acquiring the company outright, and so, you know, it</p> <p>25 became part of Roche. Whereas the IPO process would</p>

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1 have, you know, brought in funds into the company to
 2 continue operations obviously as an independent entity.
 3 So I think -- they're a little bit different.
 4 Q. That's fair. The dollar value of the IPO was
 5 substantially less than the purchase price that Roche
 6 paid for the company. Fair to say?
 7 A. I think because we never did -- I think
 8 the projec- -- I don't remember the projected terms of
 9 what the IPO would have valued the company at.
 10 Obviously we don't know what the value would have been
 11 because we never completed the IPO process.
 12 Q. Does it ring a bell that the figures were
 13 discussed in the range of the IPO raising between 56
 14 and \$69 million?
 15 A. I don't know the exact numbers, but that --
 16 that seems to be a reasonable ballpark based upon what
 17 I recall and what I think IPOs were sort of doing, you
 18 know, back then.
 19 Q. And Roche acquired Ariosa in 2015. Is that
 20 right?
 21 A. Yes.
 22 Q. Do you recall approximately how much Roche
 23 paid to acquire Ariosa?
 24 A. There was an upfront payment. I can't
 25 remember. It was like 400 or 425. Somewhere between

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1 four and 450 upfront. And then there was contingencies
 2 of milestones that was about I think around another 200
 3 or so.
 4 Q. So approximately around \$600 million total?
 5 A. Yes.
 6 MR. PFEIFFER: And, Marcus, would you put
 7 up Tab 8, please?
 8 Q. (By Mr. Pfeiffer) You should have now in your
 9 folder what's marked as Exhibit 09. Would you please
 10 open that, sir?
 11 A. Yes.
 12 Q. And Exhibit 09 is a document reduced to a PDF
 13 from a web page. It is a Roche press release from
 14 December 2nd, 2014, entitled "Roche Acquires Ariosa
 15 Diagnostics and Enters the Noninvasive Prenatal Test,
 16 NIPT, and Cell-Free DNA Testing Services Markets."
 17 (Exhibit 09 was marked for identification.)
 18 Q. Do you have that document in front of you?
 19 A. Yes.
 20 Q. This is another one you might want to zoom in
 21 on just a little bit. There is a quote attributed to
 22 you, I guess, just -- just above the "About Ariosa
 23 Diagnostics" line. It starts with the words, "We are
 24 thrilled."
 25 A. Yes.

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1 Q. It says: We are thrilled to join forces with
 2 Roche to continue in our commitment to bringing forward
 3 high quality and affordable genetic testing that
 4 positively impacts the medical care of patients around
 5 the world.
 6 And then it says: Said Ken Song, M.D., CEO of
 7 Ariosa.
 8 And that was an accurate quote of you, wasn't
 9 it?
 10 A. Yes.
 11 Q. And did Roche, in fact, help develop and
 12 commercialize Ariosa's Harmony test after the
 13 acquisition?
 14 A. I don't know by, I mean, develop? When they
 15 acquired the company, our tests had already been on the
 16 commercial market. There was -- I think there was one
 17 addition to it over time in terms of test content, but
 18 most of the development had already been completed by
 19 us.
 20 Q. So I'll reframe my question, then. Did Roche
 21 actually continue to expand the commercialization of
 22 your Harmony -- or Ariosa's Harmony test?
 23 A. Yes.
 24 Q. You also had mentioned in your testimony back
 25 in March that Ariosa had switched from an NGS-based

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1 approach to a microarray-based approach for its Harmony
 2 test. Is that right?
 3 A. Yes.
 4 Q. And you did succeed in making that conversion,
 5 didn't you?
 6 MR. NAEGELE: Objection. Leading.
 7 A. Um, yeah, I mean, it probably depends on how
 8 you define "succeeding." We -- we were able to convert
 9 the current test content we had at the time over to the
 10 array-based format, but in terms of the plans that we
 11 had, had we stayed on an NGS platform, we were not able
 12 to further make those development efforts on the
 13 array-based platform.
 14 Q. The Harmony test did ultimately go to the
 15 commercial marketplace after you switched to microarray
 16 technology. Right?
 17 MR. NAEGELE: Objection. Leading.
 18 A. Yeah, I would say that it continued. I mean,
 19 we continued to offer the Harmony test first through
 20 use of the Illumina sequencing HiSeq platform. And
 21 while we still had it on the marketplace, we
 22 transitioned to an array-based readout format while we
 23 were a commercial product.
 24 Q. And after you transitioned to the microarray
 25 technology, you continued to offer the Harmony test

<p style="text-align: right;">Page 126</p> <p>1 commercially?</p> <p>2 A. Yes.</p> <p>3 Q. On basically a global basis. Right?</p> <p>4 MR. NAEGELE: Object to form.</p> <p>5 A. Yes.</p> <p>6 Q. And is -- Ariosa's Harmony test is still being</p> <p>7 sold by Roche as an NIPT test option today, isn't it?</p> <p>8 MR. NAEGELE: Objection. Leading.</p> <p>9 A. I believe so. I haven't actually checked to</p> <p>10 see where it's still offered, but my understanding is</p> <p>11 that it is still available.</p> <p>12 Q. And is it the case you don't know where it's</p> <p>13 currently available?</p> <p>14 A. That's correct.</p> <p>15 Q. Okay. Have you checked? Have you tried to</p> <p>16 keep track of where it's available?</p> <p>17 A. No.</p> <p>18 Q. Is it fair to say that at least -- at least at</p> <p>19 some point you understood that the Harmony test had</p> <p>20 been commercialized in more than 100 countries around</p> <p>21 the world?</p> <p>22 MR. NAEGELE: Objection. Leading.</p> <p>23 A. It was -- while we were still at Ariosa, yeah,</p> <p>24 we were offering it in, I think we said 100 countries</p> <p>25 and territories because I think some of them were not</p>	<p style="text-align: right;">Page 128</p> <p>1 Q. And --</p> <p>2 A. But our sequencing costs were low to begin</p> <p>3 with.</p> <p>4 Q. So is it the case, then, switching to the</p> <p>5 microarray lowered costs and increased turnaround -- or</p> <p>6 decreased turnaround time?</p> <p>7 MR. NAEGELE: Objection. Form.</p> <p>8 A. Yes, we had slightly lower costs and our</p> <p>9 turnaround time improved.</p> <p>10 Q. Now, I think you also mentioned in your March</p> <p>11 testimony, and I wanted to just ask you briefly, that</p> <p>12 there came a time before you switched to the microarray</p> <p>13 technology where Illumina wanted to charge Ariosa a</p> <p>14 higher, I guess, license fee. Does that sound</p> <p>15 familiar?</p> <p>16 A. There is multiple conversations that took</p> <p>17 place post the announcement of their acquisition by</p> <p>18 Verinata as it related to our supply agreement. In</p> <p>19 some instances the idea of a license fee did come up.</p> <p>20 Q. And do you recall having heard that Illumina</p> <p>21 and others, including Sequenom, had a patent pool that</p> <p>22 applied to some of the NIPT-related technology?</p> <p>23 MR. NAEGELE: Object to form.</p> <p>24 A. There was -- I do recall a patent pool. That</p> <p>25 terminology being used. I can't recall exactly when</p>
<p style="text-align: right;">Page 127</p> <p>1 necessarily countries but recognized territories or</p> <p>2 regions.</p> <p>3 Q. And do you know what the state of the</p> <p>4 commercial availability is today? Whether it's larger</p> <p>5 or smaller than those hundred countries and</p> <p>6 territories?</p> <p>7 A. I don't know.</p> <p>8 MR. NAEGELE: Object to form.</p> <p>9 Q. (By Mr. Pfeiffer) Didn't Ariosa at least</p> <p>10 publicly state that the switch to microarray both</p> <p>11 lowered cost and sped up turnaround times?</p> <p>12 MR. NAEGELE: Objection. Leading.</p> <p>13 A. I don't, I don't know if we made -- I don't</p> <p>14 know in what form or if we made, and how we made those</p> <p>15 statements. Did it lower costs? I can't -- I can't --</p> <p>16 I don't know if it lowered costs based upon projected</p> <p>17 cost or if we had a slight cost advantage. Because I</p> <p>18 think the array pricing that we got was slightly below</p> <p>19 what we might have been paying on a, on the sequencing</p> <p>20 cost.</p> <p>21 Probably -- as I go back, I'm trying to</p> <p>22 recall. It cost us probably on a per sample basis, I</p> <p>23 think, yeah, even with the array it was a little bit</p> <p>24 less than -- I think it was about like a few dollars or</p> <p>25 something compared to our per sample sequencing cost.</p>	<p style="text-align: right;">Page 129</p> <p>1 that came about because I do know that there was some</p> <p>2 discussions between Illumina, Verinata, and Sequenom.</p> <p>3 I don't know when they sort of combined their, the</p> <p>4 patents or whatever they did to put in that patent</p> <p>5 pool.</p> <p>6 Q. And were you aware that the patent pool</p> <p>7 charged basically all licensees the same fee? It</p> <p>8 didn't differentiate among individual users?</p> <p>9 MR. NAEGELE: Objection. Leading.</p> <p>10 A. I don't -- I don't know the details of how</p> <p>11 they construed the pricing for their other customers,</p> <p>12 but it wasn't relevant to us. And so the way it was is</p> <p>13 that if someone was using Verinata's methods or</p> <p>14 Sequenom's methods, which was a massively parallel</p> <p>15 shotgun sequencing, and needed those patents to</p> <p>16 practice, then, yes, the patent will apply.</p> <p>17 In our case where we used a completely</p> <p>18 different approach, even when we were on sequencing,</p> <p>19 the patent pool was not relevant.</p> <p>20 Q. And so you don't know, then, in answer to my</p> <p>21 question, whether the patent pool was charging</p> <p>22 everybody the same price?</p> <p>23 MR. NAEGELE: Object to form.</p> <p>24 A. That is correct.</p> <p>25 Q. Okay. Do you know approximately how many</p>

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1 companies were -- were competing in the NIPT marketing
 2 space before Illumina acquired Verinata in 2013?
 3 A. In the U.S. I could point to that because we
 4 had a very good understanding and visibility.
 5 Q. Okay. Whom did you understand to be in the
 6 NIPT space in the U.S. before Illumina acquired
 7 Verinata?
 8 A. So the way the market worked in the U.S. was
 9 there was a handful of laboratories that could actually
 10 do the testing, you know, Ariosa, Verinata, Sequenom,
 11 and Natera. And then there were multiple other
 12 laboratories that would forge relationships with one of
 13 those four companies to effectively serve as a
 14 distributor of the test. So entities like Labcorp and
 15 Quest and ARUP and a whole bunch of other smaller
 16 regional labs.
 17 And so depending upon how you looked at it,
 18 you know, you could say there was a lot of laboratories
 19 that were offering the tests. But some of them were
 20 offering it via a distribution arrangement with one of
 21 the four main labs that were performing the test.
 22 Q. Didn't some additional companies enter the
 23 NIPT testing market after Illumina's acquisition of
 24 Verinata in 2013?
 25 MR. NAEGELE: Objection. Leading.

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1 A. I think that what we saw in the NIPT landscape
 2 was it developed very quickly. You had sort of the
 3 first four entrants, and it was relatively complex
 4 technology. And then you started seeing other entrants
 5 coming in, I believe even before Illumina acquired
 6 Verinata. I think particularly overseas.
 7 But then I think you just -- that that just --
 8 that market continued to evolve with more and more
 9 entities starting to offer the test themselves by
 10 performing the test themselves.
 11 Q. So -- so more companies were at that first
 12 level of the market rather than being distributors. Is
 13 that fair to say?
 14 MR. NAEGELE: Object to form.
 15 A. When you say -- what do you mean by "first
 16 level"?
 17 Q. Yeah, that wasn't a great question. Let me
 18 try that again.
 19 You described the original four participants
 20 in the marketplace as companies that were actually
 21 the -- above the distributor level labs. Right?
 22 A. Okay, Yeah.
 23 Q. And there are more -- there were more such
 24 companies after 2013 then there -- and Illumina's
 25 acquisition of Verinata than there were before 2013?

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1 MR. NAEGELE: Object to form.
 2 A. Yeah, a number of companies doing the testing
 3 themselves. Yes. That -- that continued to grow.
 4 Q. And there are still a number of companies in
 5 that space today, in the NIPT space, doing the testing
 6 themselves, aren't there?
 7 MR. NAEGELE: Object to form.
 8 A. (Inaudible.)
 9 (The Reporter requested the answer be
 10 repeated.)
 11 THE WITNESS: I said yes.
 12 MR. PFEIFFER: I am -- I am going to pass
 13 the questioning and reserve my remaining time for
 14 questioning after counsel for the FTC questions you
 15 again.
 16 MR. NAEGELE: Great. I think we've been
 17 going for almost another hour, and I think it's time
 18 for a lunch break, if that's okay with everyone.
 19 MR. LITVACK: How much more -- are we off
 20 the record? Let's go off the record.
 21 THE VIDEOGRAPHER: Okay. Thank you. One
 22 moment, please. We are going off the record at 12:15.)
 23 (Recess taken 12:15 p.m.- 12:52 p.m.)
 24 THE VIDEOGRAPHER: We are back on the
 25 record. The time is 12:52. Please proceed.

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1 MR. LITVACK: Dylan, you're on. I think
 2 we're back on the record. It's your turn to ask
 3 questions.
 4 MR. NAEGELE: Okay. Yeah, I think I had
 5 some technical -- technical issues.
 6 * * *
 7
 8 EXAMINATION
 9 BY MR. NAEGELE:
 10 Q. Dr. Song, have there been any leadership
 11 changes at Omniome recently?
 12 A. Yes.
 13 Q. What leadership changes have happened at
 14 Omniome recently?
 15 A. Could you specify a timeframe, and I can walk
 16 you through the changes that have happened?
 17 Q. In the last year.
 18 A. Okay. So in the last year we've had some
 19 changes at the CEO level. So in the sort of late
 20 summer, early fall time frame, I think this was sort of
 21 around September or so, we had a transition of the
 22 former CEO, Dave Mullarkey. And -- and then there was
 23 a gap in the -- and then, actually, at the same time
 24 that Dave Mullarkey was transitioning from the company,
 25 we brought in Richard Shen as the chief product officer

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1 full-time for the company. And that happened almost
 2 sort of contemporaneously.
 3 And then we actually brought in a new CEO
 4 named Robert Wicke, W-i-c-k-e. I believe he officially
 5 started in November of 2020, but that didn't quite work
 6 out that great for either of us, and so he transitioned
 7 from the company just in the end of April of this year.
 8 So about six or so weeks ago. And with that, we
 9 promoted Richard Shen from chief product officer to
 10 president.
 11 Q. After Mr. Wicke's departure, has Omniome
 12 continued to look for a CEO?
 13 A. We just actually kicked off that process
 14 recently.
 15 Q. When does Omniome anticipate hiring a CEO?
 16 A. That's always difficult to say because we
 17 definitely want to find the right type of individual.
 18 I would say that the phenotype of the individual that
 19 we're looking for is -- is someone that really could be
 20 more externally-facing for fundraising purposes,
 21 primarily. And we hope to be able to bring that
 22 individual into the company, you know, generally it
 23 takes about three to six months.
 24 Q. What benefit -- strike that.
 25 Is there a benefit to Omniome of having a CEO?

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1 A. Yes, I would say there is.
 2 Q. What is the benefit to Omniome of having a
 3 CEO?
 4 A. I think most organizations have a CEO. So I
 5 think just in terms of that, just from sort of what's
 6 standard and conventional, that's -- that's one. And I
 7 think that does have some relevance for the employees.
 8 But I really believe that, for us, a CEO is
 9 someone that could guide the company's overall sort of
 10 strategy, I would say. Particularly as it relates to
 11 capitalization strategy. So, financing and things like
 12 that.
 13 The type of individual we're looking for is
 14 not someone that really has much technical or product
 15 development expertise because Richard, as president,
 16 you know, really has that capability to lead the
 17 organization. So someone who's more financially savvy
 18 and obviously can understand the overall product
 19 development attributes, et cetera. But it's more
 20 someone who's financially savvy and can -- and can
 21 interface with investors, bankers, analysts eventually,
 22 and even potential, you know, strategic partners and
 23 things like that. Someone with a stronger finance
 24 business background.
 25 Q. Have the leadership changes over the last year

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1 impacted Omniome's plans for commercialization?
 2 A. Well, I would say that the -- there's, I mean,
 3 there's been some impact. I would say that different
 4 leaders would have different perspectives on sort of
 5 how to commercialize and what type of product it is
 6 that we'd want to get out into the market.
 7 So there has been some differing views, but I
 8 don't think that they were overall material. There
 9 were other factors at play, from, from my perspective,
 10 that really have sort of influenced and guided the
 11 product development timeline.
 12 Q. In your opinion has not having a CEO impacted
 13 Omniome's timeline for commercialization?
 14 A. Interestingly, in a way having Richard be
 15 president probably has been a big positive and has
 16 probably really helped the company towards getting
 17 towards a -- visibility on both the product and the
 18 timeline. And so oddly, the, the absence of the CEO,
 19 particularly recently, has been, actually been -- been
 20 fine. And -- and actually, if anything, having Richard
 21 be president has been an overall positive as it relates
 22 towards product development, timelines, et cetera.
 23 Q. I want to change gears and ask some more
 24 questions about the instrument that Omniome is
 25 developing. What is the throughput of the instrument

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1 that Omniome is developing?
 2 [REDACTED]
 3 [REDACTED]
 4 [REDACTED]
 5 [REDACTED]
 6 [REDACTED]
 7 [REDACTED]
 8 So depending on which instrument, I can talk
 9 to its anticipated throughput.
 10 Q. So I guess taking a step back, what is
 11 throughput?
 12 A. Throughput really refers in the
 13 next-generation sequencing space around output or
 14 amount of data generation, which is normally measured
 15 in a unit of giga bases. So it's the number of bases
 16 that ultimately you can sequence. And that is derived
 17 from looking at the number of individual sequencing
 18 reads multiplied by the average read for each of those
 19 reads. And so that's how throughput or output is
 20 normally viewed.
 21 Q. Is throughput a metric that you would track?
 22 A. Yes.
 23 Q. Why?
 24 A. Well, for users of next-generation sequencing,
 25 throughput matters because they have a certain amount

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1 of data that they're expecting to generate for their
 2 application, with some applications requiring a lot
 3 more data generation relative to others.

█ [REDACTED]

█ [REDACTED]

█ [REDACTED]

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█ [REDACTED]

█ [REDACTED]

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1 Q. Moving back to product development, is product
 2 development a iterative process?
 3 A. It still is, yeah. Because you're -- you're
 4 still putting everything together, and you're learning.
 5 And you -- you may still be making some adjustments and
 6 modifications along the way. But not to the degree
 7 that you would during the feasibility and planning
 8 stage.
 9 Q. What kind of changes might you make during
 10 product development?
 11 A. You might figure out how much -- I mean,
 12 there's a whole host. And I'm, you know, I could just
 13 cite a couple examples I'm aware of, but I'm probably
 14 not the best person to lay out all the details of what
 15 could be there.

█ [REDACTED]

█ [REDACTED]

█ [REDACTED]

█ [REDACTED]

█ [REDACTED]

█ [REDACTED]

█ [REDACTED]

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█ [REDACTED]

█ [REDACTED]

█ [REDACTED]

█ [REDACTED]

█ [REDACTED]

█ [REDACTED]

8 Q. So what phase comes after the feasibility
 9 stage?
 10 A. We call -- I mean, different organizations
 11 call it something different, but it's product -- we
 12 call it product -- I think it's called, we're calling
 13 it product development stage.
 14 Q. And what does that stage entail?
 15 A. That stage really entails a very detailed
 16 timeline and set of activities to get to the final
 17 commercializable product being shipped out the door.
 18 So it's not as much exploration of different technical
 19 aspects. It's more integrating them and making them
 20 sort of more robust as it comes to repeatability and
 21 reliability, et cetera.
 22 Q. What comes after product development?
 23 A. Commercial launch, which may or may not entail
 24 beta programs and early access programs. That's more
 25 of a company-specific decision.

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1 Q. You testified earlier that there's only one
 2 NGS on the market. Is that correct?
 3 MR. PFEIFFER: Object to the form of the
 4 question.
 5 A. Yeah, there's more than one NGS manufacturer,
 6 you know, depending how loosely you want to define
 7 next-generation sequencing. There's -- I would say
 8 there is -- I think people recognize that there's one
 9 clearly dominant player in the market.
 10 Q. And what company is the dominant player in the
 11 market?
 12 A. Illumina.
 13 Q. How many sequencer models does Illumina offer,
 14 to your knowledge?
 15 MR. PFEIFFER: Object to form. Lacks
 16 foundation.
 17 A. There's the, I think there's the iSeq, the
 18 MiniSeq, the MiSeq, the NextSeq, the HiSeq, which may
 19 or may not be getting phased out, and then the NovaSeq.
 20 So those are different models, and within them they
 21 might have -- even within each one of those there might
 22 be some slight differences. Like there's a MiSeq DX
 23 instrument, which is a diagnostic version of the
 24 instrument. So but at least -- I would say at least
 25 five if not six sort of core models upon which each

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1 core there may be other additional systems.
 2 Q. Are you familiar with the capabilities of
 3 these models?
 4 MR. PFEIFFER: Object to form of the
 5 question.
 6 A. To a certain extent.
 7 Q. Dr. Song, would you mind repeating your
 8 answer?
 9 A. I said to a certain extent.
 10 Q. Are you familiar with the throughput
 11 capabilities for these models?
 12 A. Roughly.

[REDACTED]

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[REDACTED]

Page 143

[REDACTED]

17 Q. Has Omniome had to make any changes to the
 18 design of its instrument since it began development?
 19 A. Yes. Quite a bit.
 20 Q. What changes has Omniome had to make?

[REDACTED]

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3 Q. Are you familiar with the term "early access
 4 customer"?
 5 A. Yes.
 6 Q. Does Omniome plan on offering a version of its
 7 instrument to early access customers?

[REDACTED]

16 Q. Do early access customers typically provide
 17 feedback on the product that they're develop -- sorry.
 18 Strike that.
 19 Do early access customers typically provide
 20 feedback on the product that they are provided?
 21 MR. PFEIFFER: Object to the form of the
 22 question. Lacks foundation.
 23 A. That -- that is generally the, yes, that is
 24 generally the arrangement; is they're getting access
 25 earlier than normal with the intent to provide feedback

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1 on a multitude of different factors back to the
 2 company.
 3 Q. In your experience, how is that feedback used?
 4 A. It could be used to help with the ultimate
 5 commercial launch. It could be everything from
 6 installation, service. You know, if it's a relatively
 7 minor -- if the feedback is something that could be
 8 relatively quickly modified into the instrument, then I
 9 believe companies would look to try and make that
 10 change. But obviously if there was something that
 11 was -- required a significant effort, you know, the
 12 company would need to think about whether or not they
 13 want to delay the launch to incorporate those or
 14 whether they'll just move forward and -- and perhaps
 15 incorporate that into a later upgrade or something
 16 else.
 17 MR. NAEGELE: Thank you. Those are all
 18 the questions that I have.
 19 MR. PFEIFFER: I do not believe I have any
 20 further questions.
 21 MR. LITVACK: Nothing from me. So I think
 22 we can go off the record.
 23 MR. NAEGELE: Great. Thank you. Before
 24 we go off the record, I just wanted to thank Dr. Song
 25 for taking the time to talk to us today.


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1 MR. PFEIFFER: Very much so. Thank you,
 2 Doctor.
 3 THE VIDEOGRAPHER: All right. Thank you
 4 everyone. One moment please. This concludes today's
 5 testimony given by Dr. Kenneth Song. The total number
 6 of media units used was four. All media will be
 7 retained by Veritext on a local secured drive and
 8 redundantly stored in the Veritext-managed Amazon S3
 9 cloud services for preservation purposes. We're going
 10 off the record at 1:15. Thank you.
 11 (Deposition concluded at 1:15 p.m.)
 12 (Signature was reserved.)
 13 * * *
 14
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1 CORRECTION & SIGNATURE PAGE
 2
 3 RE: Illumina, Inc. vs. GRAIL, Inc.
 Federal Trade Commission Docket No. 9401
 4 KENNETH SONG, M.D.; TAKEN JUNE 2, 2021
 REPORTED BY: VICKY L. PINSON, RPR-CCR
 5
 6 I, KENNETH SONG, M.D., have read the within
 transcript taken June 2, 2021, and the same is true and
 7 accurate except for any changes and/or corrections, if
 any, as follows:
 8
 9 PAGE/LINE CORRECTION REASON
 10 _____
 11 _____
 12 _____
 13 _____
 14 _____
 15 _____
 16 _____
 17 _____
 18 _____
 19 _____
 20
 21 Signed at _____, Washington,
 22 on this date: _____
 23
 24
 25 _____
 KENNETH SONG, M.D.

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1 REPORTER'S CERTIFICATE
 2
 3 I VICKY L. PINSON, RPR-CCR, the undersigned
 4 Certified Court Reporter, authorized to administer
 5 oaths and affirmations in and for the states of
 6 Washington, Oregon and California, do hereby certify:
 7 That the sworn testimony and/or proceedings, a
 8 transcript of which is attached, was given before me at
 9 the time and place stated therein; that the witness was
 10 duly sworn or affirmed to testify to the truth; that
 11 the testimony and/or proceedings were stenographically
 12 recorded by me and transcribed under my supervision.
 13 That the foregoing transcript contains a full,
 14 true, and accurate record of all the testimony and/or
 15 proceedings occurring at the time and place stated in
 16 the transcript; that a review of which was requested.
 17 That I am in no way related to any party to the
 18 matter, nor to any counsel, nor do I have any financial
 19 interest in the event of the cause.
 20
 21 WITNESS MY HAND this 3rd day of June, 2021.
 22
 23 
 24 _____
 VICKY L. PINSON, RPR-CCR
 25 Washington Certified Court Reporter, No. 2559
 Oregon State Certified Court Reporter, No. 16-0442
 California State Certified Court Reporter, No. 9845

1 Garrett H Anderson, Esquire
2 garrett@ghanderson-iplaw.com
3 June 3, 2021
4 RE: Federal Trade Commission v. Illumina/Grail
5 6/2/2021, Kenneth Song (#4595722)
6 The above-referenced transcript is available for
7 review.
8 Within the applicable timeframe, the witness should
9 read the testimony to verify its accuracy. If there are
10 any changes, the witness should note those with the
11 reason, on the attached Errata Sheet.
12 The witness should sign the Acknowledgment of
13 Deponent and Errata and return to the deposing attorney.
14 Copies should be sent to all counsel, and to Veritext at
15 cs-midatlantic@veritext.com
16
17 Return completed errata within 30 days from
18 receipt of testimony.
19 If the witness fails to do so within the time
20 allotted, the transcript may be used as if signed.
21
22 Yours,
23 Veritext Legal Solutions
24
25

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Federal Rules of Civil Procedure

Rule 30

(e) Review By the Witness; Changes.

(1) Review; Statement of Changes. On request by the deponent or a party before the deposition is completed, the deponent must be allowed 30 days after being notified by the officer that the transcript or recording is available in which:

(A) to review the transcript or recording; and

(B) if there are changes in form or substance, to sign a statement listing the changes and the reasons for making them.

(2) Changes Indicated in the Officer's Certificate. The officer must note in the certificate prescribed by Rule 30(f)(1) whether a review was requested and, if so, must attach any changes the deponent makes during the 30-day period.

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In the Matter of:

Illumina, Inc. and Grail, Inc.

March 24, 2021

Ken Song

Condensed Transcript with Word Index



For The Record, Inc.

(301) 870-8025 - www.ftrinc.net - (800) 921-5555

Song

Illumina, Inc. and Grail, Inc.

3/24/2021

1	<p>FEDERAL TRADE COMMISSION</p> <p>ILLUMINA,) a corporation,) and) Matter No. 2010144 GRAIL,) a corporation) -----)</p> <p>Wednesday, March 24, 2021</p> <p>Remote Investigational Hearing Federal Trade Commission</p> <p>The above-entitled matter came on for remote investigational hearing, pursuant to notice, at 11:00 a.m., Eastern Time.</p>	3
2	<p>APPEARANCES:</p> <p>ON BEHALF OF THE FEDERAL TRADE COMMISSION:</p> <p>DYLAN NAEGELE, ESQ. NICK STEBINGER, ESQ. Federal Trade Commission 400-7th Street, S.W. Washington, D.C. 20024 (202) 326-2433 dnaegele@ftc.gov</p> <p>ON BEHALF OF OMNIOME AND THE WITNESS:</p> <p>DOUG LITVAK, ESQ. Davis Wright Tremain 1301 K Street, Suite 500 East Washington, D.C. 20005 (202) 973-4200 douglitvak@dwt.com and GARRETT ANDERSON, ESQ. Omniome 6965 Lusk Boulevard San Diego, California 92121 (858) 832-2300</p>	4
1	<p style="text-align: center;">I N D E X</p> <p>WITNESS: EXAMINATION: KEN SONG BY MR. NAEGELE 3</p> <p>EXHIBITS DESCRIPTION FOR ID NONE</p> <p>OTHER EXHIBITS REFERENCED PAGE NONE</p>	3
1	<p style="text-align: center;">P R O C E E D I N G S</p> <p style="text-align: center;">- - - - -</p> <p style="text-align: center;">STIPULATION: ALL COUNSEL PRESENT STIPULATE THAT THE WITNESS SHALL BE SWORN REMOTELY BY THE COURT REPORTER * * *</p> <p>Whereupon--</p> <p style="text-align: center;">KEN SONG</p> <p>a witness, called for examination, having been first duly sworn, was examined and testified as follows: EXAMINATION BY MR. NAEGELE: Q. Good morning, Mr. Song. Thank you for appearing here today. My name is Dylan Naegele, and I am an attorney with the Federal Trade Commission. Before we begin, I would like to ask the other persons with us today to introduce themselves for the record.</p> <p>MR. LITVAK: Doug Litvak from Davis Wright Tremain on behalf of the witness and Omniome. MR. ANDERSON: Garrett Anderson, solo practitioner, on behalf of the witness and Omniome. MR. STEBINGER: Nick Stebinger from the Federal Trade Commission.</p>	4

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5	<p>1 MR. NAEGELE: Thank you. 2 BY MR. NAEGELE: 3 Q. Dr. Song, can you please state your name for 4 the record? 5 A. Ken Song. 6 Q. Who is your current employer? 7 A. Well, my full-time employer is a company called 8 RayzeBio, R-A-Y-Z-E-B-I-O, but I also serve as the 9 chairman of the board at Omniome. 10 Q. Are you currently employed by anyone else? 11 A. No. 12 Q. Do you understand that you are appearing here 13 today pursuant to a subpoena? 14 A. Yes. 15 Q. Do you understand that you will be testifying 16 under oath today? 17 A. Yes. 18 Q. How did you prepare for today's hearing? 19 A. So I reviewed the subpoena for different areas 20 that required some looking into -- you know, I went 21 back and looked at some company documents just so that 22 I was prepared for myself in case any specifics or 23 details were going to be required. And then, you know, 24 I also discussed things with counsel. 25 Q. Is there any reason why you would not be able</p>	7	<p>1 IP-related, and so competition, yes, because we both 2 had similar products in the marketplace. 3 Q. Thank you. 4 Before we get into substantive questions, I'd 5 like to explain a little bit about how today's 6 investigational hearing will be conducted. All of my 7 questions and your answers will be recorded by the 8 court reporter. Please understand that you need to 9 speak up and answer my questions orally so that the 10 court reporter can record your answers. She will not 11 be able to record a nod or a shake of your head. 12 To make the questions and answers easier to 13 record, we should both do our best not to speak at the 14 same time. If you do not understand one of my 15 questions or if you cannot hear a question, I'd be 16 happy to clarify it, rephrase it, or do whatever is 17 necessary so that you and I understand each other. 18 This is particularly important because we're conducting 19 this hearing over Zoom. 20 I do want to remind you that you are under 21 oath, so if at any point you realize that you've 22 answered a question incorrectly or if you remember 23 something else that would make your answer more 24 complete, please just let me know, and we can add to 25 your earlier answer right then while it's still on your</p>
6	<p>1 to fully and accurately testify today? 2 A. No. 3 Q. I am going to ask you some questions today 4 about Illumina, Inc. and Illumina, Inc.'s proposed 5 acquisition of Grail, Inc. I will refer to them as 6 "Illumina" and "Grail." If for any reason that's 7 confusing, please let me know, and I can answer or sort 8 of modify the term that I'm using appropriately. 9 So let me start off by asking, have you ever 10 given testimony by deposition before? 11 A. Yes. 12 Q. How many times? 13 A. Deposition, once. 14 Q. And what was that matter? 15 A. That was with -- in regards to a company that I 16 was priorly -- prior involved in, and that was in a 17 litigation case that involved my prior company as well 18 as with Illumina. 19 Q. What was that prior company? 20 A. That prior company was Ariosa, but at the time 21 that the deposition was done, I was doing it on behalf 22 of Roche, because Roche had acquired Ariosa, and so the 23 suit was still ongoing at that time. 24 Q. Did the suit involve competition matters? 25 A. Well, it was -- it was patent-related, it was</p>	8	<p>1 mind. 2 If you need a break at any point, just let me 3 know and we can take one. I only ask that you not 4 request a break while we have a question pending. 5 Do you understand everything that I've told 6 you? 7 A. Yes. 8 Q. Excellent. 9 You are currently accessing Zoom, correct? 10 A. Yes. 11 Q. Is Zoom working for you as far as you can tell 12 at this time? 13 A. Yes. 14 Q. What is the full address of your current 15 location? 16 A. 9880 Campus Point Drive, Suite 360, San Diego, 17 California, 92121. 18 Q. Is there anyone else in the room with you? 19 A. No. 20 Q. What device are you using for this hearing? 21 A. I'm using a Thinkpad laptop. 22 Q. Do you have any form of communication with your 23 attorney at your disposal? 24 A. I don't know what you mean by that. What does 25 that mean? I mean, they're on the Zoom with us here,</p>

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<p style="text-align: right;">9</p> <p>1 obviously, so that's a form of communication, and there</p> <p>2 is -- you know, if needed, we have the option to -- you</p> <p>3 know, during a break or whatever, we do have a separate</p> <p>4 breakout room virtually to be able to discuss things.</p> <p>5 Q. Do you anticipate anyone trying to contact you</p> <p>6 while I'm asking you questions during the hearing?</p> <p>7 A. No. I mean, my cell phone might ring, but that</p> <p>8 is not related to this. I can't help that from</p> <p>9 happening, so I won't pick it up.</p> <p>10 Q. Thank you.</p> <p>11 Will you tell me if anyone tries to communicate</p> <p>12 with you while I'm asking questions?</p> <p>13 A. I will.</p> <p>14 Q. To the extent that you do get some kind of</p> <p>15 contact, if you could let me know, I would be happy to</p> <p>16 take a break if you need to respond to something, but</p> <p>17 it is important that, you know, you not be involved in</p> <p>18 reading or responding to either text messages or emails</p> <p>19 while we're conducting the IH.</p> <p>20 A. Okay, understood.</p> <p>21 Q. If at any point our line of communication</p> <p>22 breaks down, I take it you do have a way to contact</p> <p>23 your attorneys?</p> <p>24 A. Yes.</p> <p>25 Q. Excellent.</p>	<p style="text-align: right;">11</p> <p>1 California, the San Francisco Bay area, and I was vice</p> <p>2 president of Venrock, which invested in early-stage</p> <p>3 healthcare companies, from 2007 to 2010.</p> <p>4 In 2010, I took up the position of chief</p> <p>5 executive officer at a company called Ariosa</p> <p>6 Diagnostics -- actually, at the time of founding, it</p> <p>7 was called Tandem Technologies, but we renamed the</p> <p>8 company eventually. There I served as CEO for</p> <p>9 approximately five years. This was a molecular</p> <p>10 diagnostics company where we ultimately developed a</p> <p>11 sequence of -- where we ultimately developed a</p> <p>12 diagnostic product for maternal-fetal health.</p> <p>13 That company was then acquired by Roche in</p> <p>14 2015, at which point I then joined Roche as part of --</p> <p>15 where I became part of Roche and stayed there for a</p> <p>16 little bit over a year. In 2016 I left Roche and then</p> <p>17 took about six or so months off and moved down to San</p> <p>18 Diego, and in the fall of 2016, I joined Metacrine,</p> <p>19 which is a biotechnology company working on drug</p> <p>20 discovery, as their president and chief executive</p> <p>21 officer. So that was in -- I think in the fall of</p> <p>22 2016.</p> <p>23 And then in the spring of 2017, I took on the</p> <p>24 executive chairman role at Omniome. Then in June of</p> <p>25 2020, I left Metacrine as president and CEO, and then</p>
<p style="text-align: right;">10</p> <p>1 Dr. Song, would you please briefly describe</p> <p>2 your educational background, starting with college.</p> <p>3 A. I was an undergraduate at the Massachusetts</p> <p>4 Institute of Technology, where I studied biology and</p> <p>5 was a premed major. I graduated in 1996. Then I went</p> <p>6 to medical school, the University of California, San</p> <p>7 Francisco, where I received my medical degree, M.D., in</p> <p>8 the year 2000.</p> <p>9 Q. Thank you.</p> <p>10 Would you now please give a brief overview of</p> <p>11 your career after receiving your M.D.?</p> <p>12 A. After receiving my M.D., I went to work for</p> <p>13 McKinsey & Company, a management consulting firm in San</p> <p>14 Francisco, where I was an associate for two years.</p> <p>15 Then I left McKinsey and actually returned back to</p> <p>16 medicine, where I completed a residency in internal</p> <p>17 medicine at the University of California, San</p> <p>18 Francisco.</p> <p>19 And then I completed a fellowship in</p> <p>20 gastroenterology, as well as a research fellowship, up</p> <p>21 at the University of Washington Medical School and also</p> <p>22 was doing my research at the Fred Hutchinson Cancer</p> <p>23 Research Center.</p> <p>24 In 2007, I left medicine again and joined</p> <p>25 Venrock, a venture capital firm, and moved back down to</p>	<p style="text-align: right;">12</p> <p>1 later that month, in June of 2020, I joined RayzeBio as</p> <p>2 president and CEO, where I continue to serve in that</p> <p>3 function, and I also have continued service as the</p> <p>4 chairman of the board at Omniome since 2017.</p> <p>5 Q. Other than your work at Omniome, did any of the</p> <p>6 work that you mentioned involve DNA sequencing?</p> <p>7 A. At Omniome, yes.</p> <p>8 Q. Sorry.</p> <p>9 Would you please read that question back.</p> <p>10 (The record was read as follows:)</p> <p>11 "QUESTION: Other than your work at Omniome,</p> <p>12 did any of the work that you mentioned involve DNA</p> <p>13 sequencing?"</p> <p>14 THE WITNESS: Oh, other than.</p> <p>15 Yes. So at Ariosa we were pretty significant</p> <p>16 users of DNA sequencing technology for our diagnostic</p> <p>17 tests, including the use of the Illumina sequencing</p> <p>18 platforms.</p> <p>19 BY MR. NAEGELE:</p> <p>20 Q. Thank you.</p> <p>21 Would you please describe Omniome at a high</p> <p>22 level?</p> <p>23 A. So Omniome is a life science tools company. So</p> <p>24 that means that the company was founded with a goal of</p> <p>25 making life science instruments that would be useful</p>

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1 for research as well as, you know, potentially clinical
2 and other uses.
3 The focus for Omniome has been on developing --
4 and ultimately what it hopes to commercialize -- a DNA
5 sequencing system. So that would include a sequencing
6 box or piece of hardware that would physically be sold,
7 and then there would be, you know, reagents and other
8 things like that that would also be sold to a company
9 so that that sequencing box or -- you know, could be
10 used.

11 **Q. When was Omniome founded?**
12 A. So Omniome was founded actually back in 2013.
13 **Q. And where is Omniome located?**
14 A. In San Diego, California.
15 **Q. How many employees does Omniome have?**
16 A. It has about 160 or so. I don't know the -- I
17 don't recollect the exact number, but in that range.

[REDACTED]

1 reaction. That's probably conventionally the way
2 people look at it. So they talk about -- you know,
3 there's a term called gigabases, and sometimes people
4 will just say Gs, so how many gigabases of output can
5 you generate in a sequencing run, which would consume,
6 like, one kit, right, and one sort of finite period

[REDACTED]

14

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[REDACTED]

7 **Q. And what products is Omniome developing?**
8 A. So we're developing a DNA sequencer. So this
9 is a system that would be able to sequence -- you know,
10 not just DNA, but also any type of genetic material,
11 like RNA, et cetera.

12 The focus of our technology is to provide, in
13 industry terms, a reasonably mid to high throughput
14 system, meaning that we would be able to generate a
15 fair amount of data each time a customer would want to
16 actually perform a sequencing run. And by "sequencing
17 run," that means, you know, start to stop to doing an
18 analysis, right, or a running of samples.

19 THE REPORTER: I'm sorry, a running of?
20 THE WITNESS: Samples.
21 THE REPORTER: Thank you.
22 BY MR. NAEGELE:

23 **Q. How is throughput measured?**
24 A. Throughput is usually measured by number of
25 bases that you can provide through your sequencing

[REDACTED]

18 **Q. So in your position as chairman of Omniome's**
19 **board, what are your responsibilities?**

20 A. So there's, you know, standard board member
21 responsibilities in terms of just governance, making
22 sure that the -- that we're having appropriate board
23 meetings, that there's appropriate disclosures and
24 information that's being shared, you know, voting
25 matters as they relate to shareholders and board

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1 consents, et cetera.
 2 I'd say one of the big things is obviously
 3 ensuring that we have the proper management in place,
 4 but, you know, for me, I also -- you know, I'm in close
 5 contact with the CEO as well as some other senior
 6 executives just to sort of get updates in between board
 7 meetings and when they happen. I would say, you know,
 8 I'm in touch pretty much on a weekly basis, you know,
 9 with members inside the company to understand what's
 10 going on and will provide, you know, strategic input.
 11 I don't want to use the word "direction,"
 12 because my job is not to run the company, but I do try
 13 to provide input based upon information that's shared
 14 with me.
 15 **Q. How often does Omniome's board meet?**
 16 A. Quarterly.
 17 **Q. Do you have any other interactions with the**
 18 **board besides the quarterly meeting?**
 19 A. Yeah, there will be communication or contact if
 20 there's something going on, such as, you know, if
 21 there's a material development, like if there's a
 22 financing or if there's perhaps a senior executive
 23 employee issue, which can be good and -- or not, I mean
 24 like promotions and things like that, or if there's
 25 concerns around senior management, then that will also

[REDACTED]

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1 be discussed amongst the board members.
 2 There are committees, compensation committees
 3 and audit committees that will also meet at separate
 4 times outside of the formal quarterly board meetings.
 5 **Q. In your role as chairman, do you have any**
 6 **interaction with Omniome's investors?**
 7 A. Yes. Some of those investors sit on the board
 8 as well.
 9 **Q. How often do you interact with Omniome's**
 10 **investors?**
 11 A. It varies by the investor. Obviously, if an
 12 investor is on the board and also serves on one of the
 13 committees that I'm involved with, that -- I'll have
 14 more frequent involvement. There are some investors
 15 where I have, you know, almost no contact at all.
 16 **Q. Shifting gears, I have some questions now about**
 17 **the sequencer that Omniome's developing. What**
 18 **chemistry is Omniome considering using for its**
 19 **sequencer?**
 20 A. We're using a chemistry that -- we are using
 21 sequencing by binding chemistry, and maybe the simplest
 22 way to think about this is it is a base-by-base
 23 interrogation and extension that occurs that relies
 24 upon imaging to be able to detect the sequences.

[REDACTED]

4 **Q. Is the size of the instrument important?**
 5 A. To whom?
 6 **Q. Sorry. To your knowledge, is the size of a**
 7 **sequencer important to the customer?**
 8 A. I think it matters for some. You know, some
 9 customers have a limited amount of space in their
 10 laboratory, so they don't want a very large footprint,
 11 you know, thing that's taking up a ton of space.
 12 In general, you know, my understanding is
 13 customers do like to have things that could fit on a
 14 standard laboratory bench so that you don't need
 15 specialized, you know, equipment or seismic fitting to
 16 a room to accommodate it.

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[REDACTED]

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[REDACTED]

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[REDACTED]

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[REDACTED]

6 (Pages 21 to 24)

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[REDACTED]

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[REDACTED]

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[REDACTED]

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[REDACTED]

7 (Pages 25 to 28)

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[Redacted text block]

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[Redacted text block]

2
3 **Q. When Omniome commercially releases its**
4 **sequencer, who does it anticipate being its target**
5 **audience -- target customer?**
6 A. I think our target customer is anyone that's
7 interested in currently doing next-generation
sequencing.

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[Redacted text block]

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[Redacted text block]

8 (Pages 29 to 32)

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Q. Would there be a benefit to Omniome in having FDA approval?

A. There's definitely a -- if you have an FDA-approved instrument and FDA-approved reagents and kits, then it makes it easier for diagnostic labs to use that, especially those that, you know, aren't CLIA labs, right, because then they can just use an FDA-approved product. And even for CLIA labs, they would not need to go through their own separate process and internal validation. They could just use an FDA-approved product and start offering the testing.

[REDACTED]

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and see whether or not they can get a test kit or a test approved on an FDA instrument.

Q. What kind of cooperation would that be?

A. I think that can run a pretty broad spectrum of different types of cooperation. It's a question of, I think -- you know, again, I'm not the expert here on this, having -- not having done it, but I think I could contemplate that, you know, a laboratory testing provider might say, I just want to get my test approved just for me, right, or they could say I want to get my test approved as a kit on your instrument that can then become widely available to everyone else.

In that latter situation, I would assume that a laboratory testing provider there might want to, you know, reap some of the economics from the testing kit if they work with a testing kit man -- if they work with an instrument manufacturer to work with them to get that test kit approved. So, again, I think there's different ways of how people want to get FDA approval, if they wanted to get it. So there's not a single way to do it.

Q. You mentioned a kit approach. What would Omniome's involvement be if one of its customers wanted to get an FDA-approved kit?

A. It would -- it would depend, again, on how the

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Q. If customers are using non-RUO instruments, would that process be the same?

A. Well, by "non-RUO," you mean an FDA-approved instrument?

Q. Yes.

A. So the process could be different. So if there's an FDA-approved instrument and there's already an FDA-approved test kit for that instrument, it should be relatively straightforward for a customer just to use that instrument and buy that test kit.

If there is an FDA-approved instrument but the test itself is not approved, then there could be, you know, cooperation that's needed between a laboratory testing provider and the instrument manufacturer to try

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different components of that testing process wanted to be approved and who wanted to control that approval. So, I mean, Omniome could be involved or any instrument manufacturer could be involved in production of perhaps primers that are specific to the test content, and I guess the question is, who would that manufacturing and production lie upon? Would that be upon the manufacturer, like Omniome or Illumina, or would that rely upon the customer or some other third party through which it could be compatible with your sequencing system?

Q. Would Omniome be involved with any of the interactions with the FDA?

A. If it's off of our instrument and we were involved in the manufacturing of some of the reagents, then I would assume yes.

Q. What would -- what kind of involvement would that be?

A. In what -- I guess I'm just trying to -- like, it depends. In what scenario are we -- I just want to make sure we're talking about the right scenario.

Q. Certainly.

In the event that an Omniome customer wanted to get FDA approval for a kit or a test that ran on an Omniome sequencer, would Omniome have to be involved in

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1 **any interactions with the FDA?**
 2 A. I would say if Omniome's manufacturing some of
 3 the components of that kit, then most likely yes.
 4 **Q. By "components in the kit," do you mean**
 5 **reagents or the instrument or something else?**
 6 A. Well, if the instrument's already approved by
 7 the FDA and there is no further modifications that are
 8 needed on any aspect of the instruments or the reagents
 9 that are used on those instruments, if those are all
 10 FDA-approved, then I don't know that there would need
 11 to be much more on the instrument portion.
 12 But if there are -- you know, obviously if
 13 there's any things that need to be even modified or
 14 slightly changed, then I would assume -- again, I'm not
 15 a regulatory expert -- I assume that there would need
 16 to be some direct involvement from the company on those
 17 matters.
 18 MR. NAEGELE: So we've been going for about an
 19 hour now. Let's take a short break. Let's come back
 20 at 9:03 Pacific time. Does that work for you?
 21 THE WITNESS: Yes.
 22 (A brief recess was taken.)
 23 BY MR. NAEGELE:

1 read technology that's out there, and so it's really
 2 been more of a niche application. There is some
 3 potential for overlap if you're trying to sequence,
 4 like, a human genome or something like that, but the
 5 reality is that the shorter read technology
 6 applications, which we fall into and Illumina and
 7 Thermo Fisher, would be more broadly applicable for the
 8 sequencing market.
 9 [REDACTED]
 10 [REDACTED]
 11 [REDACTED]
 12 [REDACTED]
 13 [REDACTED]
 14 **Q. To your knowledge, is BGI currently selling**
 15 **instruments in the United States?**
 16 A. I -- I honestly don't know whether or not they
 17 are right now.
 18 **Q. I'd like to shift gears and ask some questions**
 19 **now about intellectual property and next-generation**
 20 **sequencing. Earlier in our conversation you mentioned**
 21 **that your position involves engaging with some of**
 22 **Omniome's investors. Have any of Omniome's investors**
 23 **required due diligence related to Omniome's**
 24 **intellectual property before investing in the company?**
 25 A. Yes.

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40

1 [REDACTED]
 2 [REDACTED]
 3 [REDACTED]
 4 [REDACTED]
 5 [REDACTED]
 6 [REDACTED]
 7 [REDACTED]
 8 [REDACTED]
 9 [REDACTED]
 10 [REDACTED]
 11 [REDACTED]
 12 [REDACTED]
 13 [REDACTED]
 14 [REDACTED]
 15 [REDACTED]
 16 [REDACTED]
 17 [REDACTED]
 18 [REDACTED]
 19 **Q. And what is the difference between long-read**
 20 **technology and the technology that Omniome is using?**
 21 A. So people typically talk about short-read verse
 22 long-read technology, and that usually is distinguished
 23 by whether or not you're sequencing hundreds of bases
 24 or if you're sequencing many, many thousands of bases.
 25 And there's fewer applications for the longer

1 **Q. And why do you think that investors have**
 2 **required due diligence into Omniome's intellectual**
 3 **property before investing in it?**
 4 A. Intellectual property -- well, first,
 5 intellectual property diligence is fairly standard for
 6 any type of investment that's made, but I think that in
 7 this particular instance, there's probably more
 8 attention on it given Illumina's fairly aggressive
 9 litigious sort of aspect of how they've just behaved in
 10 the marketplace.
 11 **Q. Would you mind explaining a little more what**
 12 **you mean by Illumina's litigiousness?**
 13 A. So Illumina has been -- I think it's -- it's
 14 perceived by the marketplace that Illumina is very
 15 aggressive in how they go after different companies and
 16 even customers in regards to intellectual property.
 17 You know, they've -- they've amassed a fairly large IP
 18 estate, but, you know, I think they -- they will use
 19 that, you know, sometimes -- and I've experienced this
 20 directly as Ariosa, that they will use it almost as a
 21 weapon, actually, to try and ensure that they maintain
 22 their dominance in the sequencing space.
 23 And it's actually a bit intimidating, you know,
 24 because I think the expectation is that even if you
 25 have complete freedom to operate around Illumina, which

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1 we believe we do, that it's almost an expectation that
2 Illumina is going to come after you and sue you,
3 regardless of whether or not there's any merit to the
4 intellectual property case, if it threatens their, you
5 know, business or revenue, and I think that's pretty
6 widely known, so -- and they have done it, right? They
7 have filed a lot of lawsuits. They're out there quite
8 a bit.

9 **Q. What actions has Omniome undertaken to ensure**
10 **that it has freedom to operate with its intellectual**
11 **property?**

[Redacted]

43

[Redacted]

10 **Q. To your personal knowledge, how does Illumina**
11 **do that?**

12 A. So I'll speak based on my prior experience at
13 Ariosa Diagnostics, where we were in situations where
14 we were trying to sell our system, which ended up being
15 a nonsequencing-based option, where Illumina would go
16 to our customers or our prospective customers and tell
17 them, well, you know -- you know, that's -- that either
18 doesn't have adequate patent protection or if you do
19 that, you know, not only is the company infringing, but
20 you're potentially liable for infringing as well.

21 So, you know, they're not saying that they're
22 going to sue their customer, but they're definitely
23 insinuating that that's a possibility, and I think they
24 also use that to perhaps threaten the customer -- the
25 customer might still need to use Illumina's sequencing

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[Redacted]

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1 products for other applications, right, not just
2 specific to -- in my case of Ariosa, on behalf of
3 Ariosa, in the case of NIPT, that was just one
4 application.

5 But if a customer needs Illumina for, like, 80
6 percent of their other tests, you know, I think
7 Illumina indirectly sort of said, well, you know, if
8 you need to be reliant upon us for that other stuff,
9 you should really use us for everything.

10 So, look, I mean, they have been around.
11 They're super smart. They're super successful. I
12 think they have an army of lawyers there. So they know
13 kind of -- I would anticipate they kind of know what
14 they might be able to get away with, but it's -- but I
15 would -- I would say it's sort of a -- you know,
16 they're kind of the big bully, and I remember I thought
17 of this back in my Ariosa days, that they literally
18 do -- I believe they literally use their IP as a weapon
19 to try and control the marketplace, and people are
20 scared of them because of that, because they're really
21 the only solution that's out there in a pretty large
22 and expanding NGS market.

[Redacted]

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1 Q. Does this threat of IP litigation -- has this
2 threat of IP litigation reduced the number of investors
3 that would be willing to invest in Omniome?

4 A. I would say that -- yes, but I think it does
5 give some investors pause and concern. One investor or
6 some investors are likely to say I don't know how
7 you're going to be able to go up against the giant,
8 because everyone knows they're very aggressive.

[Redacted text block]

[Redacted text block]

9 Q. What is the process for changing the adaptors
10 in an assay?

11 A. You would need to redesign your primer. So you
12 would need to remove those P-5/P-7 adaptors, and then
13 you would need to put in new adaptors into that. It's
14 not that trivial because sometimes customers may have
15 already made a big investment in securing sufficient
16 supply of those primers or have supply agreements with
17 third-party manufacturers, et cetera.

18 And also, for companies that provide those
19 primer kits, it's a level of investment for them on
20 their manufacturing line, obviously their oligo
21 synthesis, to change the primer -- there's a level of
22 investment in production that would need to be made in
23 order to make that happen, and how many of those
24 suppliers would be willing to do that in advance before
25 another sequencing technology was out there and well

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[Redacted text block]

1 adopted is TBD.

2 It's sort of like the chicken and the egg,
3 right? I mean, we would need, you know, like Agilent
4 or Roche or others to invest in building these adaptors
5 that could be compatible for us to be able to get our
6 sequencer out, but they might be, like, well, why are
7 we going to invest in changing these processes in the
8 adaptor design if you yet don't have a footprint in the
9 marketplace for your sequencer? So it is like a
10 chicken and egg problem.

11 Q. Are there any other challenges in changing
12 adaptors?

13 A. Ah, there's -- depending upon the adaptor
14 sequences, that could or could not interfere with the
15 other aspects of the primer in terms of causing
16 aggregation or primer dimers or things like that, but,
17 again, that's why you need to invest in studying that,
18 to make sure that you don't run into those problems.

[Redacted text block]

Q. Is there anything else that a laboratory would need to do in order to run an existing assay on an Omniome sequencer?

A. Well, you mean -- aside from having to change out their entire primer design, I mean, I'll say that up front, but, you know, we would be able to -- I think we would be able to -- you know, again, maybe there's some other smaller things, but that's sort of the big one I would say.

Q. Does Omniome --

A. Oh, there is another thing where -- I'm just trying to -- I'm just thinking through. Depending on how they're doing their sequencing -- again, when you're sequencing, there's this concept of sequencing the DNA that you want, and then sometimes you'll sequence a second read, and sometimes people have adapted their work flow and even their primers and their flow to do this sort of second read. That could be a sample tag or that could be reading the DNA the opposite way again.

So they might need to change that because there is some -- there is some intellectual property out there that would require them -- that requires them to

bunch of samples together, and so you need to be able to sort of bin those. So that would be a common use of a second read, is in order to read that sample tag rather than having to read through the entirety of the DNA insert sequence.

Sometimes they might do a second read because you might want to read both a top and the bottom strand of a DNA template, because you want to maybe ensure that there's fidelity in your sequencing, because sequencing is subject to some errors. So those would be probably two of the more common uses of a second read.

Q. And you mentioned that there was intellectual property related to second reads. Who owns that intellectual property?

A. Illumina owns some of the second-read IP. I don't know if others own others, but -- but I do know that Illumina owns a second-read IP technology that is being widely practiced by customers today.

Q. Other than the adaptor issue and the second-read issue, does Omniome anticipate any other challenges for a company that wants to move an existing assay onto Omniome's instrument?

A. Like, technically, those are probably two of the big ones. I mean, if you put -- if you put those

do -- that they're doing where they could -- they could utilize an alternative method, but they would need to change their work flow a bit to accommodate for that as well.

All of these things are easily solvable, right, and a lot more I think easier to implement if you didn't have the adaptor issue or the second-read issue. Then it would be very simple for the customers to adopt another sequencing technology, at least operationally, but those two are posing some -- those two elements do pose barriers to adoption.

Q. What is the reason for a second read process?

A. What is the --

Q. Let me rephrase that.

Why would a company do a second read?

A. There's several reasons. One is you might -- the way you've constructed your sample, you might want to -- some people have this thing called a sample tag or another tag on the DNA in their primer, and they might not want to sequence the entirety of the DNA. They might want to just sequence part of it, and then they might just want to see a tag that they've put on the other end of the primer to sort of associate and understand what that sample -- where that sample belongs to, because sometimes you will mix a whole

aside, it probably really streamlines the ability to switch, you know, from an Illumina sequencer to like an Omniome or to anyone else's sequencer, right, for that matter. Anyone that's developing a sequencing instrument is going to face this same problem, you know, this stranglehold on these P-5/P-7 adaptors where the entire marketplace has sort of designed their primers to incorporate those, and then the second-read aspect, which becomes used by a lot of users out there.

But you take those two things away and you probably really open up the options that become available for customers in terms of what they can use.

[REDACTED]

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[Redacted text block]

21 **Q. For clinical customers, will they need to**
22 **design their own tests to run on Omniome's sequencer?**
23 A. For a clinical customer that's using an
24 Illumina sequencer today, they can't just immediately
25 switch over and start running our system without some

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[Redacted text block]

8 **Q. Is having multiple kits available for your**
9 **instrument important for launching?**
10 A. It definitely helps with ease because some
11 customers don't have the sophistication or the
12 wherewithal to design their own primers, and so, you
13 know, they're literally just a consumer of -- and
14 purchaser of multiple different components to do a
15 sequencing run.

[Redacted text block]

54

1 investment in modifying their up-front work flow, if --
2 because of the P-5/P-7 adaptor issue. If that -- if
3 the P-5/P-7 adaptor issue wasn't there, for instance,
4 if we could just -- if we could actually use P-5/P-7
5 adaptors in our clustering process or something like
6 that, then there would be -- then the customer would
7 not need to worry about that, and so they would have
8 more flexibility, right, without requiring that level
9 of investment to be able to utilize, you know, our
10 sequencer or someone else's sequencer if it were to
11 come to market.

12 I mean, I guess theoretically it's possible
13 that an instrument manufacturer could just ignore the
14 P-5/P-5 ID, but they're obviously subjecting themselves
15 to potential intellectual property issues.

16 **Q. To your knowledge, if a laboratory buys an**
17 **Illumina sequencer today, does it need to develop any**
18 **tests that -- all tests that it runs on it or are there**
19 **commercially available tests that it can purchase to**
20 **run on it?**

21 A. Yeah, my understanding is there's commercially
[Redacted text block]

56

[Redacted text block]

21 **Q. Are there any other challenges that Omniome**
22 **anticipates facing in obtaining broad acceptance of its**
23 **instrument?**

24 A. So there's several. I mean, we have already
25 touched upon some of the issues practically with some

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57	<p>1 of the adaptors and the secondary just challenges. 2 There's the -- I would say overall just concerns that, 3 you know, that's out there just for litigation in 4 general. You know, regardless of the adaptor or 5 regardless of the second read or whatever, I mean, 6 those are clear things that Illumina -- like, right 7 now, people use the Illumina P-5/P -- like the 8 customers use the P-5/P-7 adaptor without really 9 having -- I'm not sure if they have a license or what 10 to use it, but Illumina could obviously use that to go 11 after their customers, right? 12 Essentially, they don't care right now and they 13 don't care with the -- with the suppliers of this. 14 Like, I don't think this -- I don't know that the 15 sequencing library kit providers will necessarily have 16 a license from Illumina, right, to be able to make 17 these, because it works for Illumina. They're like, 18 oh, of course, you're developing this. They sell these 19 kits, and it helps obviously Illumina's sequencing 20 products to be utilized. 21 You know, if there's -- if there's a landscape 22 where the -- the -- like a sequencing library supplier 23 all of a sudden starts making kits that are compatible 24 with our instrument or someone else's, you know, 25 Illumina could go to them and be, like, oh, wait, you</p>	59	<p>1 but perhaps -- again, very discretely -- you know, 2 modify their supply agreement terms or perhaps their 3 service response time is a little bit slower. 4 Again, these things are very difficult to sort 5 of say they are being deliberate about it, but I think 6 that gets -- that gets customers nervous, is they're 7 relying upon the Illumina system still for other 8 things, or if they're running a clinical test, it's not 9 like they can just snap their fingers and switch the 10 instrument over, because they need to validate that. 11 But there are -- there are things that -- 12 tactics and other things that can be done by Illumina 13 that can -- I think customers are nervous about this, 14 right, because they've seen it. So that's a concern 15 for us as a barrier to adoption. 16 Q. Have customers mentioned any of these concerns 17 to Omniome? 18 A. Again, I don't know that they have. I can't 19 speak to that just because I haven't been involved in 20 those direct conversations, but, again, speaking on 21 behalf of a big -- of a laboratory that ran an Illumina 22 sequencing product and then it was selling products 23 against Illumina in my first company, I can tell you 24 that it was definitely a concern. 25 Q. A little while ago you mentioned that companies</p>
58	<p>1 need a license now for our P-5/P-7, and put those 2 sequencing suppliers at a disadvantage to others who 3 aren't working with us. You know what I mean? It's 4 like they haven't yet exerted that power, but that's 5 definitely something that's theoretically possible that 6 could be done. So that's on the sequencing library 7 providers. 8 But just in general, Illumina doesn't really 9 need -- you know, they can just sue you if they wanted 10 to or file an infringement against somebody, 11 regardless -- they can just point towards a patent that 12 may not be directly related or they could use -- you 13 know, I have a concern that, you know, Illumina, which 14 is providing their sequencing solution to a lot of 15 customers, I don't know if they have exclusive -- there 16 might be some -- again, I don't know, you could check 17 with others -- but there might be supply agreements 18 that kind of require customers to predominantly use 19 Illumina's reagents or whatever for specific 20 applications. So customers might be locked in on a 21 supply agreement or -- so that's a concern. 22 Yeah, it's just like the supply agreements or 23 even the -- if a customer started using our instrument 24 as well, would that -- would that -- would Illumina use 25 that knowledge to perhaps still supply that customer</p>	60	<p>1 running clinical tests would need to revalidate. What 2 does that mean? 3 A. So if you tweek any part of your testing 4 process, you need to do some type of validation to 5 ensure that ultimate end results are not materially 6 different. So using like a bridging type study, and 7 the size and the extent of those bridging studies can 8 vary depending upon the testing that you're doing and 9 the degree of the change that's being done and worked 10 through. 11 Q. To your personal knowledge, how long would that 12 process take? 13 A. So speaking personally, having had to do this 14 at Ariosa, where we had to switch off of the Illumina 15 platform to a different detection platform, we had to 16 first do research and development on that aspect, and 17 then we had to do the validation. It was all hands on 18 deck for our company for about a year to be able to -- 19 so we basically halted all other development efforts. 20 Now, ours was much more of a dramatic shift 21 because we were going from sequencing to an Affymetrix 22 array-based readout. You know, had there been -- had 23 there been another sequencing technology available that 24 could meet our throughput, that switchover would have 25 been probably much quicker and much more efficient.</p>

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61	<p>1 It would have still required us at Ariosa to</p> <p>2 have done a redesign of our adaptors, because we would</p> <p>3 have needed to come off the P-5/P-7, but, again, if we</p> <p>4 didn't have to do the P-5/P-7 change, that would have</p> <p>5 been even simpler and even faster there.</p> <p>6 So, again, you can see there's different</p> <p>7 elements of how much are you changing, right? We</p> <p>8 changed our detection platform, so that was a pretty</p> <p>9 substantive investment. If we -- if we could have gone</p> <p>10 to -- if Omniome had existed then, we would have then</p> <p>11 needed to redesign our primers and our libraries and</p> <p>12 validated that -- which could have been done, it would</p> <p>13 have still taken some level of investment -- or we</p> <p>14 could just use our exact same P-5/P-7 -- because we had</p> <p>15 P-5/P-7 primers. If we could just use those exact same</p> <p>16 primers, then actually the switching could have been</p> <p>17 done pretty quickly, because we would have just, side</p> <p>18 by side, run the same samples and the exact same</p> <p>19 sequencing library.</p> <p>20 We wouldn't need -- the only thing that's</p> <p>21 different is the readout, and we could have actually</p> <p>22 done that pretty fast, and as long as the results were</p> <p>23 comparable, we could have then switched over to a</p> <p>24 different sequencing platform.</p> <p>25 Q. So I have a somewhat foundational question to</p>	63	<p>1 A. Well, a tag could be -- again, a lot of times</p> <p>2 people will mix samples. So they might take ten</p> <p>3 patient samples and put them into a single sequencing</p> <p>4 run. You have to have a way to deconvolute, to know</p> <p>5 whose data belongs to which one of those ten original</p> <p>6 samples. So as part of that initial design on those</p> <p>7 primers, you may sometimes put a tag on it, like --</p> <p>8 that's called a sample tag, because that could be</p> <p>9 sequenced and then identified, which of that sequence</p> <p>10 belongs to which individual or which sample, and that</p> <p>11 comes into the whole second-read concept, is, you know,</p> <p>12 you might just need to read the first 30 bases of a</p> <p>13 sequence to know where it belongs. That's all the</p> <p>14 information that you want. You don't need to read the</p> <p>15 rest of the couple hundred. Then you can sort of stop</p> <p>16 and then say, okay, then we'll just now read that</p> <p>17 sample tag, which becomes like your second read in the</p> <p>18 sequencing reaction.</p> <p>19 Q. Let's change gears somewhat. You mentioned you</p> <p>20 previously were CEO of Ariosa. What was Ariosa?</p> <p>21 A. Ariosa was a company that we started in I</p> <p>22 believe late 2009, 2010, with the focus on developing a</p> <p>23 noninvasive prenatal test for pregnant women, and</p> <p>24 basically the general concept was to develop a -- first</p> <p>25 a CLIA-based test offering where we would receive blood</p>
62	<p>1 ask. What is -- you mentioned the term "library."</p> <p>2 What is a library in this context?</p> <p>3 A. A library means when you take any sample,</p> <p>4 right, so it could be a tissue sample, a blood sample</p> <p>5 or whatever, ultimately you're taking the -- you're</p> <p>6 purifying the -- let's, for instance, talk DNA. You</p> <p>7 purify the DNA fragments out of there. You can't just</p> <p>8 throw those DNA fragments into the sequencer and say go</p> <p>9 sequence, right? You have to make a sequencing</p> <p>10 library, because you have to put, like, tags or things</p> <p>11 on the ends of those DNA little fragments so that they</p> <p>12 can then be amplified, because, again, with Illumina's</p> <p>13 technology and ours, you can't just do single-molecule</p> <p>14 sequencing. You need to create more copies of it.</p> <p>15 And so the only way that you can create more</p> <p>16 copies of it and then put those copies on a slide that</p> <p>17 ultimately you can do a sequencing reaction on, you</p> <p>18 need to put these primers, right, that have these</p> <p>19 adaptors or these other sequencers on that, and so that</p> <p>20 process of -- you know, from taking the purified DNA to</p> <p>21 then creating in solution a mixture of DNA that has</p> <p>22 these now tags and primers on the end of it, that's</p> <p>23 what a sequencing library is.</p> <p>24 Q. And you mentioned a term "tag" as well. What</p> <p>25 is a tag in this context?</p>	64	<p>1 samples from pregnant women that were taken after their</p> <p>2 doctor ordered it, and then we could actually look at</p> <p>3 the fetal DNA, so actually the DNA from the fetus, that</p> <p>4 was circulating in the mother's blood. So through a</p> <p>5 maternal blood sample we could actually analyze the</p> <p>6 fetal DNA and report out on different genetic</p> <p>7 conditions, such as trisomy 21 or Down's syndrome, and</p> <p>8 also provide information on the -- you know, whether or</p> <p>9 not the fetus was a male or female.</p> <p>10 Q. Who founded Ariosa?</p> <p>11 A. So technically the founders was this husband</p> <p>12 and wife called the Mitchells, so Mike Mitchell and Aoy</p> <p>13 Tomita Mitchell, along with their sister, Haley</p> <p>14 Mitchell, and then I got to meet them when they were</p> <p>15 still very early stage, when I was at Venrock as an</p> <p>16 investor, and then I got involved because we provided a</p> <p>17 little bit of seed financing, and then I became the</p> <p>18 CEO.</p> <p>19 Q. When Ariosa first began -- I guess, when did</p> <p>20 Ariosa first begin providing NIPT?</p> <p>21 A. I think we commercially launched the test in</p> <p>22 2012.</p> <p>23 Q. And in 2012, when Ariosa first began providing</p> <p>24 NIPT, what was its relationship with Illumina?</p> <p>25 A. It was great. Illumina was an investor in</p>

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65	<p>1 Ariosa. I believe we were the first customer -- one of</p> <p>2 the first, if not the first customer to take the HiSeq,</p> <p>3 getting installed in our laboratory. So we bought two</p> <p>4 instruments from Illumina.</p> <p>5 We had multiple meetings with their CEO and</p> <p>6 senior management to update them on our plans, and Jay</p> <p>7 Flatley, who was CEO at the time, actually was a</p> <p>8 personal investor himself in Ariosa as well, and so we</p> <p>9 had very close ties on multiple levels with them as an</p> <p>10 investor, you know, with them as a partner, with us as</p> <p>11 a customer, us giving feedback to them on HiSeq, and</p> <p>12 there were a lot of people that were at our company</p> <p>13 that were at Illumina previously.</p> <p>14 Q. What kind of information did Ariosa provide</p> <p>15 about its business to Illumina?</p> <p>16 A. Because they were an investor and they were an</p> <p>17 important strategic supplier to us, we provided a fair</p> <p>18 amount of detail. We shared with them our overall</p> <p>19 vision of what we wanted to do with the product. We</p> <p>20 shared with them pretty a detailed cost structure of</p> <p>21 what we had done to innovate, with the goal of us being</p> <p>22 able to provide our test to as many women as possible,</p> <p>23 because we really thought that this was a universal</p> <p>24 test for all pregnant women.</p> <p>25 Q. So shifting back a little bit, I have some more</p>	67	<p>1 test. The standard of care at the time had been to do</p> <p>2 a combination of both ultrasound as well as serum</p> <p>3 protein-based testing, but the issue with those tests</p> <p>4 were that they only picked up about -- they were only</p> <p>5 accurate 70 percent of the time in detecting those</p> <p>6 conditions of the fetus, but more importantly, they had</p> <p>7 a 5 percent false-positive rate.</p> <p>8 That meant that one in 20 women that would</p> <p>9 undergo this test would be incorrectly told that they</p> <p>10 were at high risk of having a fetus with genetic</p> <p>11 conditions when, in fact, they were not, and the</p> <p>12 consequence of having that false-positive was that</p> <p>13 these women would then be recommended to undergo an</p> <p>14 amniocentesis or another invasive procedure called CVS</p> <p>15 that would then pose a normal fetus at risk of</p> <p>16 inadvertent loss secondary to the invasive procedure.</p> <p>17 Q. What is amniocentesis?</p> <p>18 A. Amniocentesis is a sampling of the amniotic</p> <p>19 fluid. It involves the insertion of a fairly large</p> <p>20 needle, you know, externally into the pregnant belly of</p> <p>21 the mom. It's a -- it's pretty disconcerting. I mean</p> <p>22 it's a needle like this long (indicating). It gets</p> <p>23 poked through the skin into the -- into the womb,</p> <p>24 right, where the fetus is, and then they sample fluid</p> <p>25 out of that, and then they can take that fluid, send it</p>
66	<p>1 foundational questions about NIPT.</p> <p>2 When was NIPT first commercialized?</p> <p>3 A. I think the first test became available in</p> <p>4 2011.</p> <p>5 Q. At that time, in 2011, were there other</p> <p>6 diagnostic approaches that could detect the same fetal</p> <p>7 abnormalities?</p> <p>8 A. Most people working with cell-free DNA. So the</p> <p>9 first commercialized test that predated us, there was a</p> <p>10 company called Sequenom, and then I think -- it might</p> <p>11 have been in early 2012, a company called Verinata that</p> <p>12 Illumina ended up acquiring also had developed a test</p> <p>13 looking at the cell-free circulating fetal DNA, but</p> <p>14 their approaches were very different than ours.</p> <p>15 They used something called a shotgun approach</p> <p>16 or what we called random sequencing, which was much</p> <p>17 less efficient. They required about ten times more</p> <p>18 sequencing than we did and, as a result, obviously</p> <p>19 consumed a lot more of the sequencing reagents from</p> <p>20 Illumina. We were all using Illumina, by the way.</p> <p>21 Q. Were there any ways of detecting fetal</p> <p>22 abnormalities without using NIPT?</p> <p>23 A. People had tried to isolate fetal cells, but</p> <p>24 that technically became just very difficult. I still</p> <p>25 think to this day that's not the commercially available</p>	68	<p>1 to a specialty laboratory, and there they can directly</p> <p>2 analyze the genetics of the fetus that way.</p> <p>3 But because it's invasive, it carries with it a</p> <p>4 risk of up to 1 percent of fetal loss secondary to that</p> <p>5 invasive procedure. So we were trying to avoid -- we</p> <p>6 were trying to provide a solution that prevented</p> <p>7 unnecessary invasive procedures due to the high</p> <p>8 false-positive rate that was currently the standard of</p> <p>9 care.</p> <p>10 Q. At the time that Ariosa first launched this</p> <p>11 test in 2012, what kind of patients received NIPT?</p> <p>12 A. So it was predominantly women that were older</p> <p>13 age, those who would be considered higher risk women,</p> <p>14 or women who had received a positive screening result</p> <p>15 from, you know, one of the serum protein or</p> <p>16 ultrasound-based tests, but we also had women who</p> <p>17 didn't fit that category also be interested in our test</p> <p>18 because we initially marketed our test as a test for</p> <p>19 all pregnant women, not just a subset of them, and we</p> <p>20 used -- we wanted to ensure that pricing was</p> <p>21 established such that it could be affordable to the</p> <p>22 broad population.</p> <p>23 Q. Why did Ariosa target a wider patient set?</p> <p>24 A. Because clinically it was the right thing to</p> <p>25 do, right, and it was a test that was -- that had value</p>

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69	<p>1 to every single pregnant woman, not just a subset of</p> <p>2 them.</p> <p>3 Q. How would Ariosa have been able to offer the</p> <p>4 test to all women?</p> <p>5 A. Well, I mean, just through marketing, right,</p> <p>6 and through talking with physicians.</p> <p>7 Q. Was price important for offering the --</p> <p>8 offering NIPT to a wider patient set?</p> <p>9 A. Absolutely.</p> <p>10 Q. Why is that?</p> <p>11 A. Well, it was just the realities of our</p> <p>12 healthcare system and also affordability. So what we</p> <p>13 launched and that came onto market, the two predecessor</p> <p>14 tests from us, the ones that were using the shotgun or</p> <p>15 the random approach from Sequenome and Verinata, they</p> <p>16 were pricing their tests at about \$2,700 to my</p> <p>17 recollection, and we came to market, I believe, at</p> <p>18 \$795, you know, which was considerably less, obviously</p> <p>19 by about \$2,000, which actually shocked them as well.</p> <p>20 But we were able to do that because we had</p> <p>21 developed a targeted approach where our consumption of</p> <p>22 Illumina sequencing reagents, again, was tenfold lower.</p> <p>23 So we had purposefully designed and developed our test</p> <p>24 to be one that would have a lower cost structure and,</p> <p>25 in turn, that gave us the flexibility to offer a lower</p>	71	<p>1 things were progressing because, you know, they were an</p> <p>2 investor in ours, and we continued to have strategic</p> <p>3 discussions with them.</p> <p>4 Q. At that meeting that you mentioned where you</p> <p>5 showed the slide to Jay Flatley, when was that meeting?</p> <p>6 A. That was pretty early on, I think when we were</p> <p>7 still doing our development. So probably, if I had to</p> <p>8 guess, it would have either been later 2010 or in 2011.</p> <p>9 Q. What was the purpose of that meeting?</p> <p>10 A. They had reached out and said, you know, we</p> <p>11 would love to sort of understand how people are, you</p> <p>12 know, going to use sequencing. NIPT looks like a great</p> <p>13 application for it. You know, we were buying</p> <p>14 instruments from them, and we wanted to sort of share</p> <p>15 with them our -- you know, they asked, and we also were</p> <p>16 willing to share with them sort of our long-term vision</p> <p>17 for what we wanted to do with the products in the</p> <p>18 prenatal space.</p> <p>19 Q. Who was present at that meeting?</p> <p>20 A. So we had -- we had several meetings with them,</p> <p>21 like not just one. You know, Jay Flatley I believe was</p> <p>22 at -- was he at every single one? He was definitely at</p> <p>23 the majority, if not all of them. I remember Christian</p> <p>24 Henry being in the room, who I think might have been</p> <p>25 CFO at the time. I remember Crane Harris, he was a</p>
70	<p>1 price to the marketplace.</p> <p>2 Now, I will tell you that that was not well</p> <p>3 received by Illumina, the fact that we could use less</p> <p>4 sequencing and provide the same amount of information.</p> <p>5 Q. How did Illumina react when it found out that</p> <p>6 Ariosa planned on doing this?</p> <p>7 A. Well, I don't think that they did anything</p> <p>8 immediately. I mean, you know, we had a supply</p> <p>9 agreement in place with them. I remember when we first</p> <p>10 shared this with them, to Jay Flatley, the CEO, and</p> <p>11 other senior executives, I think like their head of</p> <p>12 diagnostics, their CFO, et cetera, I do remember we</p> <p>13 showed them the slide on how much sequencing we needed,</p> <p>14 and, like, their eyes popped up and were, like, wait,</p> <p>15 you don't need a football field of sequencers?</p> <p>16 And we were, like, no. Like, what other people</p> <p>17 need, like, a hundred sequencers for, we could get it</p> <p>18 done with, like, five or eight, and we were very proud</p> <p>19 of that actually, but they -- I know their eyes popped,</p> <p>20 and especially I remember Jay just be like, "Ah, that's</p> <p>21 interesting."</p> <p>22 But, yeah, when we first launched -- this was</p> <p>23 when all of us were independent companies -- we had</p> <p>24 great adoption of our product. You know, we continued</p> <p>25 to provide Illumina updates, business updates on how</p>	72	<p>1 business development person, in the room. I remember</p> <p>2 Greg Heath, he was a diagnostics person. And in some</p> <p>3 of those meetings also -- not all, because I remember</p> <p>4 he wasn't in all -- but Nick Naclerio was in those</p> <p>5 meetings. He was a business development or corporate</p> <p>6 development person.</p> <p>7 And then I think at one of these other</p> <p>8 meetings, I think like their chief medical officer at</p> <p>9 the time was also in one of them. I remember Jay was</p> <p>10 in that room because we were meeting in the conference</p> <p>11 room right next to his cubicle at Illumina.</p> <p>12 Q. And what was discussed at these meetings?</p> <p>13 A. It was like our corporate update, confidential.</p> <p>14 It was always done under confidentiality, under CDA.</p> <p>15 So we gave them a confidential update on our progress,</p> <p>16 what we thought about putting in the tests, the cost</p> <p>17 structure, launch plans, future product development</p> <p>18 plans.</p> <p>19 Q. Did -- did Illumina make any representations to</p> <p>20 Ariosa about firewall -- information firewalls between</p> <p>21 the information obtained from Ariosa and the rest of</p> <p>22 Illumina?</p> <p>23 A. Not -- not to my knowledge. I mean, the people</p> <p>24 we were negotiating the supply agreement with were in</p> <p>25 those meetings, so there wasn't a firewall there, so...</p>

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73	<p>1 Q. Earlier in our conversation about NIPT, you 2 mentioned Illumina's acquisition of Verinata. Did 3 Illumina's acquisition of Verinata change Illumina's 4 relationship with Ariosa? 5 A. Absolutely. It was night and day different. 6 Q. What changed? 7 A. So I got a call from Jay Flatley on the -- 8 on -- just prior to the release of the press -- of the 9 announcement that Illumina was acquiring Verinata, and 10 I remember it distinctly because I was in the guest 11 bedroom of my house in Sunnyvale on a Sunday when I got 12 the call. 13 And he said, "Ken, I just want to let you know 14 that an announcement will be coming out later today 15 that we acquired Verinata." I said, "Whoa, that's 16 interesting." He said, "but I want to assure you we're 17 committed to, you know, supplying Ariosa. We want to 18 still see you guys be successful. We don't see this 19 being a conflict of interest," blah-blah-blah- 20 blah-blah. 21 So I believe right after that I made -- this 22 was right before JP Morgan, so it was January. I had 23 then sent an email to him saying, look, it would be 24 great if we could sort of sit down and meet to discuss 25 what the implications of this are. And so Jay agreed</p>	75	<p>1 care of that. I said great, we're happy to hear that, 2 although I was nervous until we actually could ink it 3 on paper, because I just -- you know, follow up with us 4 and we will give you that assurance. 5 Coming out of that JP Morgan meeting, I sent a 6 followup email immediately to Nick Naclerio and CC'd 7 Jay Flatley on it and said, great, as per our 8 discussion, this is what we would like, and then things 9 turned the other way. They were like, well, we need to 10 re-assess, we need to re-evaluate. Jay Flatley started 11 excusing himself from the discussions. We started 12 becoming very concerned because the simple ask that we 13 had all of a sudden didn't look like it was going to 14 happen so easily. 15 I actually reached out to Bill Rastetter, who 16 was chairman of Illumina at the time and also a venture 17 partner at Venrock, to try and intervene, to make sure 18 that we were just being treated as a -- that our 19 requests were being honored that Jay had verbally said 20 would not be an issue, but then this led towards many, 21 many months of back-and-forth with Illumina then coming 22 back to us and basically increasing the cost by a 23 factor of ten in our supply agreement, which obviously 24 was not going to work for us, because they wanted us to 25 have the same cost structure as Verinata and these</p>
74	<p>1 to that. So we had a breakfast meeting -- I still 2 remember it well -- in the Westin during JP Morgan with 3 Nick -- with Jay Flatley, Nick Naclerio, and John 4 Sponaugle, who was my chairman, and myself. 5 And, again, Jay and Nick had given us 6 assurances -- it was really Jay doing the talking, 7 though, saying, like, look, we are committed. 8 Obviously we are investors in you, blah-blah-blah. We 9 want to work with you. We believe we can make this 10 work. 11 So we then discussed our interest that 12 obviously he has to understand we have some concerns, 13 because now our supplier is our competitor, so what we 14 wanted to do was to ensure that we would have longer 15 term supply, assurance from them, because we were now 16 commercial in offering this testing to patients, and we 17 wanted to have a continuation of the pricing that we 18 had negotiated with them before they acquired Verinata, 19 that they had agreed to. 20 And we also asked that they provide us with the 21 same field, you know, because we had been inside of a 22 very narrow field, trisomy and all, so we said give us 23 the same field as everyone else and honor the pricing 24 that you have given to us for several more years. And 25 I remember Jay Flatley said, not a problem, we'll take</p>	76	<p>1 others who had this random sequencing method. 2 Q. If Ariosa had the same cost structure as 3 Verinata, would it be able to offer its test to 4 average-risk women? 5 A. No. We would have had to have increased -- our 6 price point would not -- that would not have been 7 sustainable for us. 8 Q. Earlier you mentioned Ariosa's field. What 9 does "field" mean in this context? 10 A. Well, just like, you know, for prenatal 11 testing. We had visions of expanding beyond just 12 trisomy to also include the ability to detect 13 infectious disease and all these other things, where 14 literally in a single blood tube a pregnant woman and 15 their doctor could receive a richness of information. 16 And, again, because we were targeted, we would be able 17 to offer a lot of this information still at very low 18 cost. 19 Q. Is "field" something that would be included in 20 a supply agreement? 21 A. Yes. 22 Q. Does -- what purpose does "field" serve in a 23 supply agreement? 24 A. It tells you that if you're acquiring products 25 from somebody, what you can actually use those reagents</p>

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77	<p>1 or those products for for commercialization. So, like,</p> <p>2 we couldn't buy -- we would have been restricted in our</p> <p>3 supply agreement to purchase Illumina's sequencing</p> <p>4 reagents and then use that for, you know, transplant</p> <p>5 rejection testing, right? We would need to go back and</p> <p>6 negotiate a separate field extension to do that.</p> <p>7 Q. To your knowledge, why did Illumina include</p> <p>8 that field provision in its supply agreement?</p> <p>9 A. Well, my assumption is that they would perhaps</p> <p>10 want to think about different pricing depending upon</p> <p>11 what the field is. They might sell you the exact same</p> <p>12 stuff at a different price, right? So, you know, I</p> <p>13 could imagine if you're going to do cancer testing</p> <p>14 where it's many thousands of dollars, they might say,</p> <p>15 well, okay, in that instance, your supply agreement</p> <p>16 terms might be a little bit different, even though</p> <p>17 you're purchasing the exact same thing. It's about</p> <p>18 maximizing, I think, you know, revenue for them.</p> <p>19 Q. At the time that Illumina acquired Verinata,</p> <p>20 what was Ariosa's field?</p> <p>21 A. I can't recall exactly what it was, but I know</p> <p>22 that we had the ability to at least test for trisomy --</p> <p>23 trisomy 21, 18, and 13, which were some of the three</p> <p>24 more common genetic conditions in the fetus. I believe</p> <p>25 that's -- yeah, I think that was -- I think it was</p>	79	<p>1 the ability to call fetal sex?</p> <p>2 A. They said that they would modify our field so</p> <p>3 long as we agreed to the price adjustment that they</p> <p>4 wanted to put into the agreement.</p> <p>5 Q. What price adjustments did Illumina want to put</p> <p>6 into the agreement?</p> <p>7 A. So just to give you a sense, what we were doing</p> <p>8 at the time was we were just buying reagents from them,</p> <p>9 and, you know, what that translated into was about a</p> <p>10 \$10 per sample cost to us. Like, Illumina didn't</p> <p>11 know -- well, they knew it because we shared it with</p> <p>12 them on the slides, you know, but we only -- it only</p> <p>13 cost us about \$10 in sequencing reagents to be able to</p> <p>14 perform the testing, 10 or 15, somewhere around there.</p> <p>15 I believe in the early iterations -- and I</p> <p>16 can't remember which ones actually made it into the</p> <p>17 supply agreement, different drafts -- but I know that</p> <p>18 \$150 test fee was sort of thrown out there from</p> <p>19 Illumina, which obviously was going to increase our</p> <p>20 costs by more than an order of magnitude.</p> <p>21 I do believe we received at least a couple of</p> <p>22 different -- a couple of different drafts that had like</p> <p>23 a per-test fee of like a hundred dollars. You know,</p> <p>24 there was a lot of different models that were sent back</p> <p>25 and forth. It was always about a hundred dollars.</p>
78	<p>1 trisomies or copy number variants, something along</p> <p>2 those lines.</p> <p>3 Q. Are there other things that NIPT can test for?</p> <p>4 A. Yeah. It can test for a single gene. It could</p> <p>5 test for potentially single gene mutations. So this</p> <p>6 would not be a copy number variant, per se. I think</p> <p>7 that's what we had, like if the copy numbers were</p> <p>8 different, but, you know, there's mutations. It could</p> <p>9 detect fetal sex as to whether or not there's a boy or</p> <p>10 a girl in it. Those would probably be the primary</p> <p>11 ones.</p> <p>12 Q. Were any other companies offering fetal sex</p> <p>13 detection at the time?</p> <p>14 A. They were.</p> <p>15 Q. Which companies were those?</p> <p>16 A. Sequenome was reporting on it, and I believe</p> <p>17 Verinata was or did shortly thereafter.</p> <p>18 Q. Was Ariosa able to report fetal sex?</p> <p>19 A. No, not initial -- well, initially we didn't,</p> <p>20 and we did eventually report out on X and Y chromosome</p> <p>21 numbers.</p> <p>22 Q. Did Ariosa ask Illumina for the ability to call</p> <p>23 fetal sex?</p> <p>24 A. We did.</p> <p>25 Q. What happened when Ariosa asked Illumina for</p>	80	<p>1 They wanted a per test fee, so they wanted to know how</p> <p>2 many tests we were running and then charge us a per</p> <p>3 test fee on top of our sequencing reagents that we were</p> <p>4 purchasing, which didn't make any sense to us.</p> <p>5 Q. What was the -- did Illumina explain why it was</p> <p>6 charging the -- why it wanted to charge the per test</p> <p>7 fee?</p> <p>8 A. Well, they first said we just want to make it a</p> <p>9 level playing field for everybody. So, I was, like,</p> <p>10 what does that mean? We're not using your reagents,</p> <p>11 because -- because they said, well, others that are</p> <p>12 doing NIPT, you know, this is how much we're getting</p> <p>13 from them, so we just want to level the playing field.</p> <p>14 Like, to me, that was the -- like, I remember that</p> <p>15 phrase specifically, because I said, how does that</p> <p>16 level the playing field?</p> <p>17 I mean, it levels the playing field for you in</p> <p>18 terms of the revenue you're getting, but we're -- we're</p> <p>19 paying more for the reagents and you're punishing us</p> <p>20 for innovation. They shifted gears and said, well, we</p> <p>21 have a lot of patents, so let's talk about it as a</p> <p>22 license fee to our patent. And we said we don't think</p> <p>23 any of your patents are relevant to this, you know, so</p> <p>24 why would we pay you this arbitrary per test fee when</p> <p>25 those patents aren't applicable?</p>

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<p>1 But they never budged, and we were never able 2 to consummate a supply agreement amendment, despite an 3 enormous amount of back-and-forth, and that forced us 4 to have to switch to a different platform.</p> <p>5 Q. Did Illumina explain what it meant by "leveling 6 the playing field"?</p> <p>7 A. I just -- I remember Nick saying, well, we 8 think everyone should just, you know, compete along 9 sort of similar cost structures or it should be the 10 same for everybody. I remember this because it didn't 11 make sense to me, like how are you -- why does Illumina 12 have the right to dictate what the cost structure 13 should be for the industry? And they clearly were 14 trying to use their supplier power to do that, which 15 was incredibly disconcerting and concerning to us.</p> <p>16 Q. At this time, was Ariosa still offering its 17 tests at a lower cost than the other companies?</p> <p>18 A. Yes.</p> <p>19 Q. Was it your impression that Illumina was 20 attempting to raise Ariosa's costs to be in line with 21 the other companies?</p> <p>22 A. Yeah. They probably didn't care what we sold 23 our test for, but they definitely wanted to get -- they 24 definitely felt like -- I think Jay said this once, 25 like they didn't feel like they were getting their fair</p>	<p>1 this test fee, it sort of provides an equal playing -- 2 an equal level playing field, right? It sort of puts 3 everyone, you know, in the same boat.</p> <p>4 Q. And do you recall who it was that said that?</p> <p>5 A. I'm pretty sure it was Nick, but, I mean, he 6 was the one who I was dealing with the most in the -- 7 immediately post that JP Morgan meeting.</p> <p>8 Q. Did Ariosa ever pay Illumina the fees that it 9 requested?</p> <p>10 A. We paid them according to the supply agreement 11 that we had already executed, but we did not -- again, 12 there was no supply agreement amendment that was made 13 that had this concept of a test fee.</p> <p>14 Q. At the time that Illumina acquired Verinata, 15 who were Ariosa's largest customers?</p> <p>16 A. Well, we had a partnership with LabCorp, so, 17 you know, technically you could consider them maybe a 18 customer, but we also had -- you know, and so in the 19 U.S., most of our business was in collaboration with 20 LabCorp and leveraging their channel, but outside the 21 U.S., we had a lot of different customers.</p> <p>22 LabCo in Spain was a big customer. TDL 23 Genetics in the UK was a big customer. And Illumina 24 started going after all of them directly, and actually 25 Illumina ultimately was able to take LabCorp and form a</p>
<p>1 share. They felt like sequencing was such an integral 2 component to the test, they kind of felt like them 3 getting 10 or 15 bucks wasn't representative of the 4 value of what they were bringing. But then we said, 5 but we've innovated, and I remember asking them, why 6 are you punishing us for innovating?</p> <p>7 Q. Who made the statement that Illumina wanted a 8 level playing field?</p> <p>9 A. I think it was Nick Naclerio, because Jay's -- 10 it was amazing. Jay quickly tried to disappear into 11 the background after that JP Morgan breakfast that we 12 had, because he said, "Oh, Nick will take care of it." 13 And then we started getting passed around to other 14 people also, Charles Moehle, Crane Harris -- Crane 15 Harris first and then Charles Moehle ultimately.</p> <p>16 Q. And who was it who said that Illumina wanted 17 its fair share?</p> <p>18 A. I don't remember. I can't remember exactly 19 who -- who said that.</p> <p>20 Q. And do you recall who said that Illumina wanted 21 the NIPT companies to have the same cost structure?</p> <p>22 A. I think -- they didn't say it that way. I 23 think they just said we believe that, you know, this 24 test fee sort of -- you know, I don't know what the 25 exact words were, but it was sort of like by providing</p>	<p>1 separate agreement with them, which really, you know, 2 became an issue for us because we lost our main 3 distribution channel in the U.S.</p> <p>4 Q. Did Ariosa attempt to keep its business with 5 Labcorp?</p> <p>6 A. We tried. I flew out to North Carolina and met 7 with senior management, said, what can we do? How can 8 we figure this out? But ultimately LabCorp -- Illumina 9 did some type of deal with Labcorp. I don't know what 10 the specifics of that was, but it was definitely -- 11 they wanted to help LabCorp bring up their own NIPT 12 solution on a sequencer, I think with the -- you know, 13 I think with -- with one of the goals for Illumina 14 being to try to hurt us as much as possible.</p> <p>15 Again, this is hearsay, but I have heard that 16 inside the board room at Illumina, Ariosa, a small 17 little private company, became their number one target, 18 and their goal was to actually try to drive us out of 19 business, which was kind of scary and flattering at the 20 same time, but I was, like, why is a \$10 billion 21 company just trying to pick on us, right?</p> <p>22 But I think they saw us as being a threat, but 23 in a single test area, which didn't make sense to me, 24 and it was almost like, why are you picking on me, 25 right?</p>

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85	<p>1 Q. How would Ariosa be a threat to Illumina?</p> <p>2 A. Well, we were obviously promoting and</p> <p>3 commercializing our NIPT test at a lower cost, and the</p> <p>4 bigger market share that we had compared to Sequenome</p> <p>5 or Verinata or who else would -- you know, at the time,</p> <p>6 NIPT was regarded as probably the most exciting and</p> <p>7 maybe the most successful diagnostic test that could be</p> <p>8 launched, and when you think about the fact that</p> <p>9 there's 4 million pregnant women in the U.S. or 4</p> <p>10 million births in the U.S. every year and then</p> <p>11 multiples of that outside the U.S., there's actually</p> <p>12 pretty sizeable revenue that could be realized from</p> <p>13 that.</p> <p>14 And I think Illumina realized that as well, but</p> <p>15 the more and more we were successful, you know,</p> <p>16 Illumina was just getting, you know, \$10 effectively</p> <p>17 per test that was run back to them, versus the more</p> <p>18 that Verinata or -- well, Verinata, they had a</p> <p>19 different incentive, because now they could get -- they</p> <p>20 could realize more of the economics because they're</p> <p>21 getting the test -- the overall test fee, but they</p> <p>22 liked Sequenom or Natera because they would get a 100</p> <p>23 or 150 bucks from them each time.</p> <p>24 Q. Did Illumina's changed treatment of Ariosa</p> <p>25 affect Ariosa's plans to offer NIPT to average-risk</p>	87	<p>1 technology, you know, that had an Illumina supply</p> <p>2 agreement. This was actually really fascinating. They</p> <p>3 had an Illumina supply agreement, and then they wanted</p> <p>4 to license our technology, which we were open to, but</p> <p>5 then Illumina would not honor their ability to actually</p> <p>6 continue with the supply agreement if they used our</p> <p>7 test, to be able to offer it at a lower cost for</p> <p>8 average-risk women.</p> <p>9 So I do think the net effect of this was that,</p> <p>10 you know, NIPT, while it continued to be a great</p> <p>11 success, ultimately, the broader adoption of it was</p> <p>12 probably stifled, you know, with a lot of that likely</p> <p>13 due to Illumina's actions and what they did post the</p> <p>14 Verinata acquisition.</p> <p>15 So as a result of that, fewer women actually</p> <p>16 ended up getting tested, which ultimately translated</p> <p>17 into more unnecessary amniocenteses needing to be done,</p> <p>18 which ultimately led toward more fetal loss --</p> <p>19 completely unnecessary -- of normal babies, and that to</p> <p>20 us was really upsetting, because that was the goal from</p> <p>21 our very start of Ariosa, was to make this test</p> <p>22 available to everybody so we could avoid the</p> <p>23 unnecessary amniocenteses and invasive procedures and</p> <p>24 not subject completely normal pregnancies to the risk</p> <p>25 of fetal loss. I think that is the price that society</p>
86	<p>1 women?</p> <p>2 A. Well, I mean, we still were committed to that,</p> <p>3 you know, so I don't think it changed our overall</p> <p>4 strategy. I think Illumina's imposition of this test</p> <p>5 fee, et cetera, I think as people started innovating --</p> <p>6 and sequencing actually started getting cheaper as time</p> <p>7 went on, because we knew -- you know, as things scaled</p> <p>8 up, but I think these supply agreements that Illumina</p> <p>9 was able to essentially come into, I think Sequenom</p> <p>10 ended up having to have a supply agreement and maybe</p> <p>11 Natera, and I don't know what the economics were, but I</p> <p>12 understood they got kind of locked in.</p> <p>13 I think what ended up happening is it prevented</p> <p>14 those other players from being able to lower their</p> <p>15 cost. So, if anything, it kind of -- I think for us we</p> <p>16 always maintained our cost, because we switched over to</p> <p>17 a different platform so that we could make the cost</p> <p>18 structure work, but I think Illumina's practices may</p> <p>19 have helped to keep the test price for our competitors</p> <p>20 still the same without seeing that cost reduction</p> <p>21 happen over -- that price reduction happen over time,</p> <p>22 which is really unfortunate because, you know, there</p> <p>23 were several of us, four players offering NIPT, and</p> <p>24 there were others that wanted to come into the space.</p> <p>25 There's others that wanted to license our</p>	88	<p>1 had to pay as a result of sort of all these shenanigans</p> <p>2 that happened post the acquisition of Verinata by</p> <p>3 Illumina.</p> <p>4 Q. You mentioned that Ariosa had a conversation</p> <p>5 with a company that wanted to license Ariosa's test.</p> <p>6 What company was that?</p> <p>7 A. There were several. I know Progenity, we had</p> <p>8 talked to Progenity, you know, we were talking with</p> <p>9 Quest, you know, we were talking with LabCorp. We</p> <p>10 talked with ARUP, and then we talked with partners</p> <p>11 outside the U.S., LabCo, TDL, and it became very clear</p> <p>12 that Illumina, once they got wind -- especially in the</p> <p>13 international markets that we were speaking to. Our</p> <p>14 partners told us that Illumina was making it very</p> <p>15 difficult for them to actually work with Ariosa, and</p> <p>16 they -- and that Illumina would send in their sales</p> <p>17 team, specifically on NIPT, to try and strike some type</p> <p>18 of different deal and to try to extract those customers</p> <p>19 away from us.</p> <p>20 And what would have been sensible was to allow</p> <p>21 those customers to just acquire the Illumina reagents</p> <p>22 as they had already and then license our technology and</p> <p>23 run the Ariosa test, but Illumina did threaten, you</p> <p>24 know, litigation against their own customers, saying,</p> <p>25 well, you know, that might be in violation of some</p>

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89	<p>1 patents, et cetera, and -- because those customers told</p> <p>2 me that that was Illumina's -- I'm not sure that</p> <p>3 Illumina ever sued them -- they might have sued TDL --</p> <p>4 but that became a legitimate fear, and then that spread</p> <p>5 through the community, right?</p> <p>6 And this was another example of them using --</p> <p>7 you know, again, the IP -- you know, it was like using</p> <p>8 IP against -- I think -- because we warned the FTC</p> <p>9 about this when they acquired Verinata. We wrote and</p> <p>10 said that this is not good for the industry, and</p> <p>11 unfortunately, it still went forward, and I think</p> <p>12 everything that we warned about ended up happening.</p> <p>13 You know, it was different back then. Maybe</p> <p>14 Illumina wasn't as litigious or people didn't think</p> <p>15 this was going to be that big of a deal, but there were</p> <p>16 remedies that could have easily been put in to avoid</p> <p>17 the depth of the fallout from this.</p> <p>18 But, yeah, Illumina used -- this is what I</p> <p>19 still think about. They literally used their position</p> <p>20 in the marketplace and their acquisition of Verinata</p> <p>21 and then their posturing of IP as a weapon. It</p> <p>22 literally was a weapon that they were using to try to</p> <p>23 annihilate us, Ariosa, as a company, and to try and</p> <p>24 scare their customers to be working only with them.</p> <p>25 Q. After Illumina acquired Verinata, did Ariosa</p>	91	<p>1 A. It required us to halt every single other</p> <p>2 development project that we had to be able to shift</p> <p>3 resources to try and make this work, and there was high</p> <p>4 risk. We weren't sure that it could be done. I think</p> <p>5 people were doubtful because no one had ever done this</p> <p>6 before. But, you know, we had phenomenal scientists</p> <p>7 and developers, and so, you know, it took us about a</p> <p>8 year.</p> <p>9 We started -- I remember -- after that JP</p> <p>10 Morgan meeting and then I think within the first month,</p> <p>11 when I could not get a supply agreement -- because,</p> <p>12 literally, this happened within, like, a week or two --</p> <p>13 I remember discussing it internally with my team, and</p> <p>14 I'm, like, I think we have to fire up this project,</p> <p>15 because I have got a really bad feeling about this.</p> <p>16 And so we pivoted while we were still in the</p> <p>17 negotiations with Illumina, and it's a good thing that</p> <p>18 we did, because had we not done that because -- you</p> <p>19 know, I think we would have been in a really bad</p> <p>20 situation at that point.</p> <p>21 Q. When did Ariosa begin the process of switching</p> <p>22 to Affymetrix?</p> <p>23 A. You mean in our laboratory?</p> <p>24 Q. I mean the research and development process.</p> <p>25 A. Oh, that was, like, within, you know, a couple</p>
90	<p>1 consider switching to another NGS provider?</p> <p>2 A. Absolutely. We even bought a SOLiD sequencer</p> <p>3 from Life Technologies, we had several Ion Torrents,</p> <p>4 but at that time those technologies were just not</p> <p>5 suitable for clinical laboratory testing and the</p> <p>6 throughput that we needed.</p> <p>7 Q. Why were they not suitable?</p> <p>8 A. They just didn't have the throughput or they</p> <p>9 were much slower, and so our turnaround times would be</p> <p>10 much longer. The SOLiD instrument was not reliable in</p> <p>11 terms of its performance. So that's why we needed to</p> <p>12 move to a completely different modality.</p> <p>13 Q. And what modality was that?</p> <p>14 A. We moved over to a gene array from Affymetrix,</p> <p>15 called a GeneTitan.</p> <p>16 Q. And what is a gene array?</p> <p>17 A. It's a -- think of it like -- like on a glass</p> <p>18 surface, there's a lot of different probes or binder</p> <p>19 sequences that are there, and then when you -- when you</p> <p>20 bind DNA fragments to it, those DNA fragments you can</p> <p>21 ultimately attack with a fluorescent-type signal. So</p> <p>22 you end up reading sort of a fluorescent signal from</p> <p>23 your DNA sample on the array.</p> <p>24 Q. What was the process for switching Ariosa's</p> <p>25 test to the Affymetrix array?</p>	92	<p>1 of months after Illumina acquired Verinata.</p> <p>2 Q. And when did Ariosa begin providing its tests</p> <p>3 on Affymetrix?</p> <p>4 A. I think it was about a little bit more than a</p> <p>5 year later maybe.</p> <p>6 Q. You mentioned that Ariosa paused its other</p> <p>7 research and development projects in order to make the</p> <p>8 switch. What were those projects that it paused?</p> <p>9 A. We were working on a test to be able to detect</p> <p>10 something called DiGeorge syndrome. DiGeorge syndrome</p> <p>11 refers to a deletion of a specific portion of the</p> <p>12 chromosome that leads to pretty significant cardiac and</p> <p>13 other defects within a fetus and then ultimately the</p> <p>14 newborn.</p> <p>15 We were -- we had a program there to try to</p> <p>16 develop a noninvasive way to detect that. Ultimately,</p> <p>17 it did get launched -- but, like, years later -- but we</p> <p>18 stopped that project, and there's benefits there,</p> <p>19 right? It can be detected earlier if there were things</p> <p>20 in the pregnancy, or you would have the child delivered</p> <p>21 in a specialized center so that they can be taken care</p> <p>22 of immediately.</p> <p>23 We had projects looking, again, at trying to</p> <p>24 combine infectious disease screening of the pregnant</p> <p>25 women, infectious disease that could impact the</p>

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93	<p>1 pregnancy, so that was put on hold, and ultimately we 2 just had to stop. We couldn't even develop the product 3 once we moved off the sequencer to an array. It just 4 wasn't possible to do. Yes, but those kind of 5 projects.</p> <p>6 Q. Why would it not be possible to do the 7 infectious disease screening on an array?</p> <p>8 A. We needed some better level of sensitivity to 9 detect that, and so the array, you know -- it's like 10 when you're counting chromosomes, you have many, many 11 different DNA fragments across the entirety of the 12 chromosome that you can look at, and so you have the 13 power of numbers.</p> <p>14 With infectious disease, you know, the genomes 15 are much smaller, and so we weren't sure that the 16 signals would be sufficient, but then also on the array 17 you're kind of limited by the number of different sort 18 of sequence-specific probes that you can analyze. 19 Like, you know, there's scalability that you could do 20 with sequencing, and that's just not possible when you 21 go to an array-based form.</p> <p>22 Q. You also mentioned that there was concern about 23 the risk of switching to an array-based test. What 24 would that risk be?</p> <p>25 A. Technically we just could not make it work,</p>	95	<p>1 have any impact on Ariosa's market share?</p> <p>2 A. Ah, it impacted ultimately, yes, our plans for 3 being able to transfer our technology. So what we did 4 is we moved from a CLIA-based offering to being able to 5 actually provide other laboratories the ability to run 6 our test, and I think it definitely impacted our 7 ability in that second phase of our business because 8 people just didn't like using microarrays. It required 9 them to buy a separate instrument, and they weren't as 10 familiar with -- you know, the sequencing was sort of 11 all the rage, so why would you go backwards and use an 12 array instead?</p> <p>13 So I think it definitely impacted there, and 14 our competitors that were offering testing tried to 15 talk about the fact that the array-based methodology 16 was not as robust, when in reality we published and we 17 shared data that the methods were comparable, but they 18 used that, you know, to sort of say, oh, sequencing is 19 the newer technology, and so, of course, it's going to 20 be better. So that was being counter-detailed against 21 us out in the field.</p> <p>22 Q. You mentioned that labs didn't want to buy a 23 second instrument. Why is that?</p> <p>24 A. Well, there's a capital cost, right, of a few 25 hundred thousand dollars to buy an instrument.</p>
94	<p>1 because we're going from a sequencing digital readout 2 to a fluorescent, more analog-based readout.</p> <p>3 Q. After Ariosa switched to microarrays, what 4 happened with its relationship with Illumina?</p> <p>5 A. Well, it was already pretty bad at that point, 6 so I think we kind of stopped -- we really stopped 7 talking after -- like, we stopped trying to figure 8 things out right after it seemed pretty clear that 9 there wasn't going to be a viable path forward. There 10 was still some back-and-forth trying to make 11 something -- like, because we had not yet switched over 12 to the array, we were still trying to figure out how we 13 could make something work.</p> <p>14 We ultimately succumbed to the idea of just 15 paying this arbitrary test fee to them, and I can't 16 remember if we sort of settled on, like, okay, fine, 17 we'll give you another 25 or 30 bucks per test, which 18 basically tripled our cost structure, and we would have 19 gone forward with that, but they did not accept that.</p> <p>20 Q. Did Illumina provide an explanation for why 21 they would not accept that?</p> <p>22 A. Well, they just felt like it wasn't -- that 23 wasn't the right price, right? They wanted a hundred 24 or whatever.</p> <p>25 Q. Did Ariosa's switch to a microarray technology</p>	96	<p>1 Sometimes there's the space, and then just needing 2 to -- you know, it would have been -- for the array, it 3 would have only been used for NIPT, right, our NIPT 4 test. They wouldn't be able to use it for anything 5 else, whereas with the sequencer, you could use it for 6 NIPT as well as a whole host of other things that they 7 might have been doing.</p> <p>8 Q. What ultimately happened to Ariosa?</p> <p>9 A. So ultimately we ended up getting acquired by 10 Roche, which was good, but -- we actually had plans to 11 go public before we got acquired, but that was 12 completely derailed.</p> <p>13 Q. How did that get derailed?</p> <p>14 A. So, you know, we were obviously going back and 15 forth with Illumina. We were still using their 16 sequencer because we had not yet made the complete 17 shift over to an array-based system. So, you know, we 18 were still dependent on them for supply, right, for -- 19 according to our supply agreement. You know, they had 20 made -- they had made allegations that we may have been 21 in breach of the agreement. We don't -- we never saw 22 it that way.</p> <p>23 But we had filed to go public. We were ready. 24 I was in New York, and it was the day before we were 25 getting ready to launch our IPO road show. We had just</p>

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97	<p>1 released -- NASDAQ had released a press release on the</p> <p>2 pricing range at 4:00 Eastern, and then five hours</p> <p>3 later I got a letter from Charlie Moehle at Illumina,</p> <p>4 business development, a formal letter saying that they</p> <p>5 were accusing us of breach of our supply agreement and</p> <p>6 that they had the right to terminate and cut off our</p> <p>7 supply to our laboratory, which -- and we were testing</p> <p>8 like a thousand samples a day at that point. So that's</p> <p>9 a material event.</p> <p>10 So we had to put things on pause, and then the</p> <p>11 next day Illumina filed a patent infringement lawsuit</p> <p>12 against us on an assay patent, and then there was a</p> <p>13 press release about that. So that obviously just</p> <p>14 killed the IPO.</p> <p>15 And I remember -- I did have a meeting with Jay</p> <p>16 Flatley -- I had seen him a few months later -- and I</p> <p>17 said, "Wow, Jay, that was -- that was pretty sneaky and</p> <p>18 pretty -- you know, targeted, what you did." He was,</p> <p>19 like, "What are you talking about? We had no idea you</p> <p>20 guys were going public. It was just a coincidence."</p> <p>21 That's, I'm sure, the stance they are going to</p> <p>22 take, but that's a really, really interesting</p> <p>23 coincidence, six hours after the public press release</p> <p>24 of our pricing, the day before our road show, they file</p> <p>25 a material breach and then file a patent infringement</p>	99	<p>1 so this is kind of all the rage now of what Guardant</p> <p>2 Health and Freenome and others are doing, but we were</p> <p>3 early on looking and thinking about this and</p> <p>4 contemplating, you know, how we would do this, but then</p> <p>5 again, once the -- once we couldn't do sequencing,</p> <p>6 those things got killed, because the level of detection</p> <p>7 and sensitivity required sequencing, and it would not</p> <p>8 be detectable on an array. So we -- that project got</p> <p>9 killed.</p> <p>10 Q. Why wouldn't that be detectable on an array?</p> <p>11 A. Just the array doesn't have the level of</p> <p>12 sensitivity to be able to detect such -- these are such</p> <p>13 rare events, even more difficult than looking at fetal</p> <p>14 trisomies, so it was going beyond the technical</p> <p>15 possibilities of an array system.</p> <p>16 Q. Could you have used polymerase chain reaction,</p> <p>17 or PCR?</p> <p>18 A. No.</p> <p>19 Q. Why not?</p> <p>20 A. PCR, you need to look at the -- we're not just</p> <p>21 trying to understand the -- we're looking for a single</p> <p>22 point mutation normally in cancer. So PCR is not going</p> <p>23 to -- you can try to do allele-specific PCR, but that,</p> <p>24 again, is not going to give you the same level of</p> <p>25 sensitivity or detection.</p>
98	<p>1 lawsuit against us. Maybe it's coincidence. It didn't</p> <p>2 look like it to me.</p> <p>3 Q. Did that have any impact on Ariosa's planned</p> <p>4 IPO?</p> <p>5 A. Yeah. We couldn't do it. We stopped. The</p> <p>6 bankers and us, we agreed that there was no way we</p> <p>7 would have been able to pull it off. And the narrative</p> <p>8 is, well, you got acquired by Roche at the end of the</p> <p>9 day. Yeah, we did get acquired. We got acquired for a</p> <p>10 multiple over what our investors had given us, but had</p> <p>11 we been able to do the IPO, had we been able to sort of</p> <p>12 stay on the sequencing platform -- you know, we got</p> <p>13 acquired, right, for up to \$600 million, you know, six</p> <p>14 months later, but we really were in the pole position.</p> <p>15 We were the leading provider of NIPT, and just</p> <p>16 sort of look at -- and we had plans to go into</p> <p>17 oncology, et cetera, and look at where Natera and other</p> <p>18 companies are now, right? Those are \$10 billion-plus</p> <p>19 companies, and I think we easily could have been the</p> <p>20 leader, right, leading the entire diagnostics field.</p> <p>21 So, yes, our investors made out fine, but it definitely</p> <p>22 thwarted our vision of what we thought we could have</p> <p>23 done.</p> <p>24 Q. What oncology plans did Ariosa have?</p> <p>25 A. We were looking at self-circulating tumor DNA,</p>	100	<p>1 Q. Could you have used digital PCR?</p> <p>2 A. No, because, again, with sequencing, sometimes</p> <p>3 these mutations are occurring at different parts in the</p> <p>4 genome, and that's what you ultimately want to detect.</p> <p>5 You know, with digital PCR and with PCR, you have to be</p> <p>6 specifically setting yourselves up and then you're</p> <p>7 reading a very short area, where the sequencing could</p> <p>8 be across a couple hundred bases or you could design</p> <p>9 your primers in a way to short of march up and down a</p> <p>10 gene of interest, and so both technically and also</p> <p>11 costwise, to try to replicate that in PCR, et cetera,</p> <p>12 would have been -- I think it would have been</p> <p>13 prohibitively expensive even if you could do it.</p> <p>14 Q. When did Ariosa first consider looking at</p> <p>15 circulating tumor DNA?</p> <p>16 A. I don't remember exactly when that was.</p> <p>17 Q. Do you remember what applications Ariosa was</p> <p>18 considering for circulating tumor DNA?</p> <p>19 A. Yeah, and it was for mutation detection, for</p> <p>20 early detection, or for treatment, and I know it was --</p> <p>21 I know that we were -- I know that that's what we were</p> <p>22 looking at, because after Roche acquired us, Roche had</p> <p>23 an interest in it, and I remember we were, like, we had</p> <p>24 already thought about this, right? So we were able to</p> <p>25 contribute to some of that thinking.</p>

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1 **Q. What kind of earlier detection -- what kind of**
2 **cancers was Ariosa considering detecting?**

3 A. Well, I mean, it was going to be like a
4 pan-cancer, we could look at multiple different types
5 of cancers.

6 MR. NAEGELE: Let's take a short break and go
7 off the record.

8 (A brief recess was taken.)

9 BY MR. NAEGELE:

[REDACTED]

22 **Q. Did you have any discussions with Grail at any**
23 **point?**

24 A. Yeah, we did, but that was a little bit ago.

25 **Q. What was the extent of Omniome's discussions**

[REDACTED]

102

104

1 **with Grail?**

2 A. We had different discussions -- interestingly,
3 with Alex Aravanis, who is now the CEO of Illumina --
4 and also had a discussion with their prior CEO -- I
5 forget her name, she was a woman -- and then actually
6 had met with Hans Bishop -- I think it was at JP Morgan
7 last year, you know, prior to Illumina's acquisition --
8 and it actually was -- we had talked to them about them
9 actually looking to bring in a solution such as ours
10 into Grail.

11 It was interesting because we thought they were
12 using Illumina, but I think they were -- think they
13 actually had a legitimate interest in working with us
14 to improve their cost structure.

15 **Q. How far did those discussions progress?**

16 A. It was mainly discussions. You know, I think
17 there was some understanding technically. We were kind
18 of early at some point -- our technology was still
19 quite early, but there was enough where at least the
20 construct or the idea was entertained of -- and I
21 thought it was interesting that they were open to
22 actually looking at alternative solutions besides
23 Illumina.

[REDACTED]

[REDACTED]

26 (Pages 101 to 104)

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<p style="text-align: right;">105</p> <p>[REDACTED]</p> <p>14 Q. Great.</p> <p>15 We're off the record.</p> <p>16 MR. LITVAK: Could I just put on the record at</p> <p>17 the end, that the transcript is, like, highly</p> <p>18 confidential?</p> <p>19 MR. NAEGELE: Yes.</p> <p>20 THE WITNESS: Back on the record?</p> <p>21 MR. NAEGELE: We are back on the record, yes.</p> <p>22 THE WITNESS: So maybe just in conclusion, just</p> <p>23 to share with you some thoughts having been through the</p> <p>24 deposition, and also -- and being sympathetic</p> <p>25 towards -- you know, you are probably talking to a lot</p>	<p style="text-align: right;">107</p> <p>1 alternative technologies that could come to the market</p> <p>2 and could service the needs of these other customers of</p> <p>3 Illumina today and actually provide a reasonable</p> <p>4 alternative, but there are still barriers, right,</p> <p>5 towards that adoption.</p> <p>6 Some of them are related to the P-5/P-7</p> <p>7 adaptors, because it's not just the customers. There's</p> <p>8 a whole ecosystem around that, but freeing that up</p> <p>9 could obviously really open up potential switching and</p> <p>10 make it less painful for customers.</p> <p>11 There's obviously the second read or the</p> <p>12 Paradigm read type technology that's also a big</p> <p>13 barrier, particularly for oncology sequencers, and so</p> <p>14 somehow opening that or not having that become an issue</p> <p>15 would be -- would be helpful.</p> <p>16 But maybe the biggest one is just also how do</p> <p>17 customers just get protected in a way that they feel</p> <p>18 like Illumina is not going to come after them, right,</p> <p>19 with some frivolous lawsuit? It doesn't even have to</p> <p>20 be, you know, potential infringement. And I think</p> <p>21 that's where the concern is.</p> <p>22 And so I think there's a world where Illumina</p> <p>23 could acquire Grail and you could still see good</p> <p>24 competition in the marketplace, but it's going to be</p> <p>25 with some concessions for Illumina to make, because if</p>
<p style="text-align: right;">106</p> <p>1 of people.</p> <p>2 A couple of observations, having -- me having</p> <p>3 operated a clinical laboratory and been a user of</p> <p>4 sequencing and now developing a sequencing technology</p> <p>5 that's meant to compete against Illumina, it's always</p> <p>6 interesting to go down memory lane.</p> <p>7 I think it's incredibly unfortunate what ended</p> <p>8 up happening at Ariosa and the relationship with</p> <p>9 Illumina, and ultimately, through really some Herculean</p> <p>10 efforts, we were able to get off the Illumina platform,</p> <p>11 but we were so nervous on whether or not that was going</p> <p>12 to be possible that really, right up until the end, we</p> <p>13 were still trying to make something work where we were</p> <p>14 willing to increase our cost structure by a factor of</p> <p>15 three or four because the technical risk of switching</p> <p>16 was so high, and I think most people believed it was</p> <p>17 virtually impossible, and yet we were able to get that</p> <p>18 done.</p> <p>19 And, you know, now that I sort of see Illumina</p> <p>20 trying to acquire Grail, I mean, that's definitely</p> <p>21 going to create some challenges, you know, a</p> <p>22 customer/competitor/supplier is also a very tricky</p> <p>23 relationship, but I think the marketplace is a little</p> <p>24 bit different today than it was five or six years ago,</p> <p>25 because I think there are credible sequencing</p>	<p style="text-align: right;">108</p> <p>1 Illumina just acquires Grail and nothing else changes</p> <p>2 and that acquisition happens, I think we're going to</p> <p>3 see exactly what happened in the NIPT space, but</p> <p>4 probably amplified even more, and ultimately I think</p> <p>5 that will be a disservice to, you know, the field of</p> <p>6 medicine, public health, and to patients.</p> <p>7 So, I mean, I just wanted to put that on the</p> <p>8 record. That's my own view, having been in a unique</p> <p>9 position of having experienced it firsthand and having</p> <p>10 lived through that, but then also having a pretty front</p> <p>11 row seat at sequencing technology development and where</p> <p>12 I think, you know, solutions and competition can still</p> <p>13 exist.</p> <p>14 MR. NAEGELE: Counsel -- actually, Dr. Song, is</p> <p>15 there anything that you want to clarify while we're</p> <p>16 still on the record?</p> <p>17 THE WITNESS: Ah, I think -- not that I can</p> <p>18 think of. I guess we'll see a transcript eventually to</p> <p>19 make sure that things are correct?</p> <p>20 MR. LITVAK: Yeah. I can drop in at this</p> <p>21 point. So we will reserve the right to read and review</p> <p>22 the transcript and also want to designate the</p> <p>23 transcript highly confidential because it includes</p> <p>24 sensitive business information and also Omniome's trade</p> <p>25 secrets. With that, Dylan, thank you very much. We</p>

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<p style="text-align: right;">109</p> <p>1 can go off the record. 2 MR. NAEGELE: We're off the record. 3 (Discussion off the record.) 4 (Whereupon, at, 2:02 p.m. Eastern Time, the 5 hearing was concluded.) 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25</p>	<p style="text-align: right;">111</p> <p>1 CERTIFICATE OF WITNESS 2 3 4 I hereby certify that I have read and examined the foregoing transcript, and the same is a true and accurate record of the testimony given by me. 5 6 7 Any additions or corrections that I feel are necessary, I will attach on a separate sheet of paper to the original transcript. 8 9 10 I hereby certify, under penalty of perjury, that I have affixed my signature hereto on the date so indicated. 11 12 13 DATED: 14 15 16 17 18 _____ KEN SONG 19 20 21 22 23 24 25</p>
<p style="text-align: right;">110</p> <p>1 DISTRICT OF COLUMBIA, to wit: 2 3 I, Susanne Bergling, the officer before whom the foregoing remote deposition was taken, do hereby certify that the within-named witness personally 4 appeared before me at the time and place herein set out, and after having been duly sworn by me, according to law, was examined by counsel. 5 6 I further certify that the examination was recorded stenographically by me and this transcript is a true record of the proceedings. 7 8 I further certify that I am not of counsel to any of the parties, nor an employee of counsel, nor 9 related to any of the parties, nor in any way interested in the outcome of this action. 10 11 As witness my hand and notarial seal on March 31, 2021. 12 13 14 15 _____s/Susanne Bergling Susanne Bergling Notary Public 16 17 18 MY COMMISSION EXPIRES: 19 3/31/2023 20 21 22 23 24 25</p>	<p style="text-align: right;">112</p> <p>1 WITNESS: KEN SONG 2 DATE: MARCH 24, 2021 3 CASE: ILLUMINA/GRAIL 4 Please note any errors and the corrections thereof on this errata sheet. The rules require a reason for any 5 change or correction. It may be general, such as "To correct stenographic error," or "To clarify the 6 record," or "To conform with the facts." 7 PAGE LINE CORRECTION REASON FOR CHANGE 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25</p>

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(301) 870-8025 - www.ftrinc.net - (800) 921-5555

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ERRATA TO DEPOSITION OF DR. KENNETH SONG (June 2, 2021)

CASE NAME: Illumina, Inc., and Grail, Inc., In the Matter of, FTC Dkt. No. 9401

CORRECTIONS

Page	Line	Now Reads	Should Read	Explanation
3	4	FOR OMNIOME	FOR OMNIOME and SONG	Mr. Litvack represented the witness
8	22-24	Do you understand that you're appearing today in response to subpoenas, a tested condom issued by the Federal Trade Commission, and the Respondents...	Do you understand that you're appearing today in response to subpoenas issued by the Federal Trade Commission and the Respondents...	Mistranscription
14	18-19	...how much to do of the engineering internally...	how much of the engineering to do internally...	Mistranscription
19	3-7	...it became understood that the necessary steps to actually get to an instrument that would be available for commercial launch was, required, you know, more integration, more work to get it to that point.	...it became understood that the necessary steps to actually get to an instrument that would be available for commercial launch required more work to get to that point.	Clarification
26	9	...I'm not really under...	...I'm not really aware...	Mistranscription
42	6	...a incorporation...	...an incorporation...	Clarification
53-54	53:24-54:5	The details of that I'm not aware of in terms of how advanced those discussions have -- have taken place. But I am aware that there have been discussions with some entity around their interest to potentially be a prototype or, you know, an alpha/beta tester in the future.	I'm not aware of the details in terms of how advanced those discussions have been. But I am aware that there have been discussions with some entities around their interest to potentially use a prototype or be an alpha/beta tester in the future.	Clarification
59	6-7	...I would have seen likely the content of this.	...I would likely have seen the content of this.	Mistranscription

Page	Line	Now Reads	Should Read	Explanation
68	15	...the challenges of sequencing.	...the challenges of that sequencing.	Clarification
70	14	...that it could be useful...	...then it could be useful...	Mistranscription
79	21-22	...compatible with the Omniome beta or the Omniome sequencing system.	...compatible with the Omniome sequencing system.	Clarification
86	5	...the costing is still TBD...	...the cost is still TBD...	Mistranscription
88	16-18	...we've had a lot of changes at their leader -- at the, you know, in terms of leadership.	...we've had lots of changes in terms of leadership.	Clarification
90	8-9	...we're talking about now our -- our 2020 -- our early 2023 system?	...we're talking about our early 2023 system?	Clarification
127	17-20	... what we might have been paying on a, on the sequencing cost.	...what we might have been paying on a per sample basis compared to the sequencing cost.	Clarification
128	16	There is multiple conversations...	There were multiple conversations...	Mistranscription
141	5	Yeah, there's more than one NGS manufacturer...	No, there's more than one NGS manufacturer...	Clarification