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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

ILLUMINA INC.,

Petitioner,

v.

MOLECULAR LOOP BIOSCIENCES, INC.,

Patent Owner.

Case No. IPR2024-01419

U.S. Patent No. 11,840,730

VIDEOTAPED STENOGRAPHIC DEPOSITION OF:
GREGORY J. PORRECA, Ph.D.
Tuesday, September 30, 2025
9:59 a.m. - 2:03 p.m.

Reported stenographically by:
Richard Germosen, FAPR, CA CSR No. 14391
RDR, CRR, CCR, CRCR, CSR-CA, NYACR, NYRCR
NCRA/NJ/NY/CA Certified Realtime Reporter
NCRA Realtime Systems Administrator
Job No. 601783

1 VIDEOTAPED STENOGRAPHIC DEPOSITION of
2 GREGORY J. PORRECA, Ph.D., taken in the above-entitled
3 matter before RICHARD GERMOSEN, Fellow of the Academy of
4 Professional Reporters, Certified Court Reporter,
5 (License No. 30XI00184700), Certified Realtime Court
6 Reporter-NJ, (License No. 30XR00016800), California
7 Certified Shorthand Reporter, (License No. 14391),
8 NCRA/NY/CA Certified Realtime Reporter, NCRA Registered
9 Diplomat Reporter, New York Association Certified
10 Reporter, NCRA Realtime Systems Administrator, taken at
11 DESMARAISS LLP, 230 Park Avenue, 26th Floor, New York,
12 New York 10169, on Tuesday, September 30, 2025,
13 commencing at 9:59 a.m.

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1 A P P E A R A N C E S: (CONT'D.)

2

3 ALSO PRESENT:

4 NYA ESTEP, Videographer

5 MARCUS BURCH, ESQ., Illumina Inc.

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Transcript of Gregory J. Porreca, Ph.D.
Conducted on September 30, 2025

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I N D E X

WITNESS	EXAMINATION
GREGORY J. PORRECA, Ph.D.	
BY ATTORNEY FUKUDA	9

E X H I B I T S

EXHIBIT NO.	DESCRIPTION	PAGE
Exhibit 1001	'730 Patent	46
Exhibit 1053	document ML IPR 1 through 21	60
Exhibit 1012	document previously marked	86
	Exhibit 1012	
Exhibit 1054	document ML IPR 375 through	87
	383	
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	Exhibit 1046	
Exhibit 1057	document ML IPR 479 to 480	111
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E X H I B I T S (CONT'D.)

EXHIBIT NO.	DESCRIPTION	PAGE
Exhibit 1060	ML IPR 550 through 554	121
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Transcript of Gregory J. Porreca, Ph.D.
Conducted on September 30, 2025

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P R O C E E D I N G S

9:59 a.m.

New York, New York

THE VIDEOGRAPHER: Stand by, please.

Here begins Media Number 1 in the

videotaped deposition of Gregory Porreca in

the matter of Illumina Inc. v. Molecular Loop

Biosciences, Inc., PTAB, in the United States

Patent and Trademark Office before the Patent

Trial and Appeal Court, Case Number

IPR2024-01419.

Today's date is September 30, 2025.

The time on the video monitor is 9:59 a.m.

The videographer today is Nya Estep

representing Planet Depos. This video

deposition is taking place at 230 Park Avenue,

New York, New York.

Would counsel please voice identify

themselves and state whom they represent.

ATTORNEY FUKUDA: Ching-Lee Fukuda with

09:58:17

09:53:21

09:59:12

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09:59:55

Transcript of Gregory J. Porreca, Ph.D.
Conducted on September 30, 2025

8

1	Sidley Austin representing the petitioner,	09:59:56
2	Illumina, and with me is Marcus Burch who is	09:59:58
3	with Illumina.	10:00:03
4	ATTORNEY MATTY: Brian Matty from	10:00:05
5	Desmarais LLP on behalf of Molecular Loop and	10:00:07
6	Dr. Porreca.	10:00:10
7	THE VIDEOGRAPHER: The court reporter	10:00:11
8	today is Rich Germosen representing Planet	10:00:12
9	Depos. The witness will now be sworn.	10:00:14
10	CERTIFIED STENOGRAPHER: Good morning.	10:00:18
11	My name is Rich Germosen. I am a Certified	10:00:18
12	Stenographic Reporter. My license is	10:00:18
13	available for inspection.	10:00:18
14	- - -	
15	(Whereupon, the Certified	
16	Stenographic Reporter administered the oath to	
17	the witness.)	
18	- - -	
19	G R E G O R Y J. P O R R E C A, Ph.D.,	
20	(witness produced a State of Massachusetts driver's	
21	license), having been first duly sworn or affirmed,	
22	was examined and testified as follows:	

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Transcript of Gregory J. Porreca, Ph.D.
Conducted on September 30, 2025

9

1	EXAMINATION BY ATTORNEY FUKUDA:	
2	BY ATTORNEY FUKUDA:	10:00:34
3	Q. Good morning, Dr. Porreca.	10:00:35
4	A. Good morning.	10:00:37
5	Q. I see you have a couple of binders	10:00:37
6	in front of you, and those I assume are your	10:00:40
7	declaration and exhibits?	10:00:43
8	A. Yes.	10:00:44
9	Q. Okay. I don't expect that you'll	10:00:45
10	need them today because I'm going to give you	10:00:47
11	the exhibits that we'll be talking about, but	10:00:49
12	if you need to refer to them, I'm just going	10:00:52
13	to ask you to let me take a look before you do	10:00:53
14	that.	10:00:56
15	A. Sure.	10:00:56
16	Q. Great.	10:00:57
17	So, Dr. Porreca, what is your	10:00:57
18	current title and who are you employed by?	10:01:01
19	A. My current title is CEO of a	10:01:04
20	company called Molecular Loop Corporation.	10:01:08
21	I'm also CEO of a company called Molecular	10:01:11
22	Loop Innovations LLC.	10:01:14

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1	Q.	And you're also the founder of	10:01:17
2		Molecular Loop; right?	10:01:19
3	A.	I'm the founder of Molecular Loop	10:01:20
4		Corporation, yes.	10:01:21
5	Q.	When did you become the founder of	10:01:24
6		Molecular Loop Corporation?	10:01:26
7	A.	Molecular Loop Corporation, so that	10:01:28
8		company, its predecessor -- there is sort of a	10:01:30
9		few predecessors, but the first one was a	10:01:34
10		company called Molecular Loop Biosolutions	10:01:37
11		LLC. I founded that company in the beginning	10:01:38
12		of 2018, yeah, the beginning of 2018. Then	10:01:47
13		that became Molecular Loop Biosciences, Inc.	10:01:56
14		in early 2019, and then that became Molecular	10:02:00
15		Corporation earlier this year.	10:02:07
16	Q.	Okay. If you don't mind, I'm going	10:02:09
17		to refer to all of those entities generally as	10:02:10
18		Molecular Loop?	10:02:13
19	A.	Sure.	10:02:14
20	Q.	Okay. Could you tell me what	10:02:14
21		products does Molecular Loop commercialize?	10:02:19
22	A.	Yeah, we make kits that labs use	10:02:21

1	for genetic testing, either human genetic	10:02:25
2	testing or infectious disease surveillance.	10:02:29
3	Q. Okay. And those kits are used for	10:02:36
4	what specific types of genetic testing?	10:02:38
5	A. They could be used for many	10:02:41
6	different types of genetic testing,	10:02:42
7	reproductive testing, cancer testing, gene	10:02:44
8	panels for research. We build sort of custom	10:02:49
9	kits for whatever the user has as their	10:02:54
10	specific content.	10:02:57
11	Q. And when did Molecular Loop start	10:02:59
12	offering those kits for sale?	10:03:01
13	A. We started offering those kits for	10:03:03
14	sale -- I believe our first -- well, we had	10:03:04
15	our first customer conversations in 2019 I	10:03:09
16	think it was, maybe late '18 or early 19,	10:03:14
17	somewhere around there.	10:03:19
18	Q. And when was the first sale made?	10:03:19
19	A. The first sale would have been	10:03:21
20	made, again, either late '18 or early '19.	10:03:22
21	Q. And as of today, how many kits has	10:03:28
22	Molecular Loop sold?	10:03:30

1	A.	I don't have that number.	10:03:33
2	Q.	Do you have an approximate?	10:03:34
3	A.	So we sell a kit. We sell	10:03:36
4		different sizes of kits. Each kit can be used	10:03:40
5		for a different number of reactions. So we	10:03:42
6		sell kits that do 96 reactions, and we sell	10:03:45
7		kits that do 384 reactions.	10:03:49
8		Over the life of the company, we	10:03:55
9		have probably sold thousands, a total of	10:03:58
10		thousands of kits at the 384 reaction pack	10:04:02
11		size or the equivalent thereof. Don't hold me	10:04:05
12		to that exact number. I didn't review the	10:04:09
13		company's sales over the last five years in	10:04:12
14		preparing for this, but roughly speaking,	10:04:15
15		we've sold many for the size of our company.	10:04:16
16	Q.	Okay. You said thousands of kits	10:04:22
17		were sold --	10:04:24
18	A.	Yeah.	10:04:25
19	Q.	-- for the 384 reaction. If you	10:04:25
20		include all the kits ever sold by Molecular	10:04:28
21		Loop, would it still be in the thousands?	10:04:29
22	A.	So that's what I meant.	10:04:31

1	Q.	I see.	10:04:32
2	A.	Thousands for the three -- like,	10:04:33
3		you know, some of those would have probably	10:04:34
4		been 96.	10:04:36
5	Q.	Got it.	10:04:36
6	A.	But --	10:04:37
7	Q.	So thousands of --	10:04:38
8	A.	Hundreds of thousands -- we've	10:04:43
9		sold --	10:04:43
10		- - -	10:04:43
11		(Unintelligible, simultaneous	10:04:43
12		testimony interrupted by the certified	10:04:43
13		stenographer.)	10:04:43
14		- - -	10:04:43
15	CERTIFIED STENOGRAPHER:	One at a time,	10:28:47
16		please.	10:28:47
17	THE WITNESS:	Sure.	10:28:47
18	A.	I think a better way to say it	10:04:43
19		would be hundreds of thousands, maybe to a	10:04:44
20		million or maybe a little above that, total	10:04:46
21		reactions over the life of the company.	10:04:49
22	Q.	Okay. But in terms of numbers of	10:04:52

1	kits, you would say that Molecular Loop has	10:04:54
2	sold thousands of kits during the life of the	10:04:56
3	company; right?	10:04:58
4	A. Again, that's my estimate.	10:04:59
5	Q. All right.	10:05:01
6	A. I did not review that in advance of	10:05:01
7	this deposition.	10:05:03
8	Q. Understood. Okay.	10:05:04
9	So I will put in front of you	10:05:06
10	your -- a copy of Exhibit 2004, which is the	10:05:08
11	declaration that you submitted in this IPR.	10:05:13
12	A. Uh-huh.	10:05:16
13	Q. And could you just confirm for me	10:05:24
14	that that is, in fact, a true and accurate	10:05:27
15	version of your declaration that you	10:05:29
16	submitted?	10:05:32
17	A. It appears to be.	10:05:34
18	Q. Okay. And if you look at Page 9,	10:05:35
19	that's your signature?	10:05:37
20	A. Yes, it is.	10:05:41
21	Q. Okay. Now, before we dive into	10:05:41
22	your declaration, I guess let me just get a	10:05:48

1	little bit about your background.	10:05:50
2	Maybe before we do that, let me ask	10:05:54
3	you this: Have you given deposition testimony	10:05:55
4	before?	10:05:59
5	A. I have one other time.	10:05:59
6	Q. Okay. And when was that?	10:06:00
7	A. That was a few years ago, yeah.	10:06:02
8	Q. Do you remember in what case that	10:06:08
9	was?	10:06:09
10	A. It was Invitae versus Natera at the	10:06:10
11	time.	10:06:17
12	Q. And you were a fact witness?	10:06:18
13	A. I was a fact witness, yes.	10:06:19
14	Q. Were you testifying on behalf of	10:06:21
15	one of those parties?	10:06:23
16	A. No, I was a third-party.	10:06:24
17	Q. And just generally, what was the --	10:06:27
18	why were you giving testimony in that case?	10:06:30
19	A. I was the inventor of the IP that	10:06:33
20	was at issue, and I was also an executive of	10:06:37
21	the company. There were transactions done for	10:06:40
22	that IP and I was the executive.	10:06:43

1	Q.	Okay. And have you testified in	10:06:45
2		any trials or legal proceedings?	10:06:47
3	A.	I testified in that trial.	10:06:49
4	Q.	Okay. And was that recently?	10:06:51
5	A.	Yes.	10:06:53
6	Q.	Okay. And how long were you on the	10:06:53
7		stand?	10:06:55
8	A.	I don't know exactly. It was	10:07:00
9		probably one to two hours.	10:07:02
10	Q.	Okay.	10:07:06
11	A.	A pretty long cross-examination.	10:07:06
12	Q.	Okay. Other than those two	10:07:10
13		instances, you have not testified in a legal	10:07:12
14		proceeding?	10:07:15
15	A.	No.	10:07:15
16	Q.	Okay.	10:07:16
17	A.	I was -- so back at the beginning	10:07:16
18		of Good Start Genetics, there was some kind of	10:07:23
19		a -- there was some kind of litigation, and I	10:07:31
20		can't remember if I was deposed. I was a	10:07:35
21		third-party again, or if I produced documents	10:07:37
22		or what, and I don't remember -- it wasn't, I	10:07:39

1	don't even think, in my capacity as a Good	10:07:48
2	Start Genetics' founder. I think it might	10:07:50
3	have been from work I was doing at Harvard. I	10:07:52
4	don't remember the details though.	10:07:55
5	Q. Okay.	10:07:57
6	A. But yeah.	10:07:57
7	Q. Okay. That's fine.	10:08:00
8	So just quickly on the logistics of	10:08:01
9	a deposition, so today I'll ask you questions.	10:08:04
10	A. Uh-huh.	10:08:08
11	Q. You do your best to answer those	10:08:08
12	questions as completely and truthfully as you	10:08:10
13	can. If you need a break, let me know.	10:08:12
14	A. Okay.	10:08:16
15	Q. If there is any reason you don't	10:08:19
16	think you can answer a question, I'm still	10:08:20
17	going to ask you to give me your best answer.	10:08:22
18	If you think there might be privileged	10:08:26
19	information, you can consult with your	10:08:28
20	counsel, but your duty is to answer every	10:08:29
21	question unless your counsel instructs you not	10:08:33
22	to answer.	10:08:34

1	A.	Okay.	10:08:35
2	Q.	Okay?	10:08:36
3		Is there anything you can think of	10:08:39
4		that would get in the way of giving truthful	10:08:40
5		and complete answers today?	10:08:43
6	A.	No.	10:08:44
7	Q.	All right.	10:08:45
8		Well, let's talk a little bit about	10:08:46
9		your history.	10:08:48
10		I understand that you received your	10:08:50
11		Ph.D. from Harvard in 2007?	10:08:52
12	A.	Yes.	10:08:55
13	Q.	And while you were a graduate	10:08:56
14		student at Harvard, you worked with Dr. George	10:08:58
15		Church in his lab?	10:09:02
16	A.	Yes, I did.	10:09:04
17	Q.	What years did you work in the	10:09:05
18		Church Lab?	10:09:07
19	A.	From the time I started my Ph.D.,	10:09:11
20		which would have been '02, and I worked in his	10:09:14
21		lab through my Ph.D. and after for a few	10:09:19
22		years. I was there until I went to Good Start	10:09:26

1	Genetics.	10:09:29
2	Q. Okay. So through about 2009?	10:09:31
3	A. Yes, that's correct.	10:09:34
4	Q. So in 2009, did you become the	10:09:39
5	founder of Good Start Genetics?	10:09:42
6	A. Yes, I did.	10:09:45
7	Q. And if you could kind of walk me	10:09:46
8	through that, I see that Good Start Genetics	10:09:49
9	was acquired by Invitae in 2017; right?	10:09:51
10	A. Yes, it was.	10:09:55
11	Q. Was there any change in your roles	10:09:56
12	at Good Start Genetics from 2009 to 2017?	10:09:58
13	A. From the time I joined, I was	10:10:06
14	responsible for R and D and technology	10:10:09
15	broadly. My title changed over time as the	10:10:16
16	company got bigger.	10:10:19
17	I later on was doing more for the	10:10:24
18	sales team actually, but I was still	10:10:27
19	overseeing R and D. I was involved in	10:10:31
20	fundraising from the beginning to the end,	10:10:34
21	M & A conversations as they started, you know,	10:10:39
22	later on in the life of the company.	10:10:41

1	Q.	And while you were at Good Start	10:10:46
2		Genetics, did you create any inventions?	10:10:49
3	A.	Yes.	10:10:56
4	Q.	Did those inventions result in	10:10:59
5		patents?	10:11:00
6	A.	Yes, some did.	10:11:00
7	Q.	And were you a named inventor on	10:11:01
8		some of those patents?	10:11:04
9	A.	Yes.	10:11:05
10	Q.	Okay. About how many patents are	10:11:05
11		you the named inventor of as a result of your	10:11:09
12		work at Good Start Genetics?	10:11:12
13	A.	As of today?	10:11:17
14	Q.	As of today.	10:11:18
15	A.	It would have to be I think in	10:11:46
16		terms of issued patents, pending applications,	10:11:48
17		U.S., foreign, many dozens.	10:11:53
18		I know the total number, but that	10:11:57
19		includes Molecular Loop and it includes	10:11:59
20		Harvard. So I don't have the number off the	10:12:01
21		top of my head for just Good Start.	10:12:04
22	Q.	Okay. Just help me understand, the	10:12:06

1	work that you did at Good Start Genetics for	10:12:08
2	which you filed patent applications --	10:12:11
3	A. Yes.	10:12:13
4	Q. -- but did those patent	10:12:15
5	applications and patents belong to Good Start	10:12:16
6	Genetics?	10:12:17
7	A. At the time they were invented,	10:12:20
8	they did belong to Good Start Genetics.	10:12:22
9	Q. And who do they belong to now?	10:12:25
10	A. Some of them belong to the	10:12:32
11	successors of Invitae and some of them belong	10:12:36
12	to Molecular Loop Corporation. Some of them	10:12:38
13	belong to Molecular Loop Innovations LLC, and	10:12:44
14	I can't think of another party that any belong	10:12:49
15	to. I think it's those three.	10:12:53
16	Q. Okay.	10:13:00
17	A. And the successors of Invitae I	10:13:00
18	don't know. I haven't tracked all of that.	10:13:03
19	So I don't know.	10:13:05
20	Q. So in 2017, when Invitae acquired	10:13:07
21	Good Start Genetics, the patents that were	10:13:10
22	assigned to Good Start Genetics were split;	10:13:14

1	right? Some went to Invitae and some went to	10:13:16
2	Molecular Loop; is that right?	10:13:19
3	ATTORNEY MATTY: I'll just give a	10:13:20
4	caution. I don't know how much of this is	10:13:21
5	confidential or not. We don't have a	10:13:23
6	protective order in this case, and I don't	10:13:26
7	think we need to get into that, but just be	10:13:27
8	careful in case any of this is confidential.	10:13:30
9	I don't think we need to get into those	10:13:32
10	details, but you can answer at a high-level.	10:13:34
11	THE WITNESS: Okay.	10:13:36
12	A. So Invitae acquired Good Start	10:13:41
13	Genetics in a stock deal. Everything was	10:13:43
14	assigned to Invitae, and then subsequent to	10:13:47
15	that, some patents were assigned to -- at the	10:13:52
16	time it would have been Molecular Loop	10:14:01
17	Biosolutions LLC, and then additional	10:14:01
18	transactions or assignments happened after	10:14:08
19	that point.	10:14:10
20	Q. Okay. When Invitae acquired Good	10:14:12
21	Start Genetics in 2017, how much did Invitae	10:14:15
22	pay for that?	10:14:20

1	ATTORNEY MATTY: And I'll caution,	10:14:23
2	again, I don't know if that's confidential or	10:14:23
3	not, but if you know and you know it's public,	10:14:25
4	you can answer. It has nothing to do with the	10:14:27
5	scope of the testimony he's giving here.	10:14:29
6	A. So there was a press release that	10:14:36
7	was issued by Invitae at the time. They were	10:14:37
8	a public company. I don't remember -- I	10:14:40
9	actually don't remember the number, and I	10:14:50
10	don't remember exactly what they put in that	10:14:51
11	press release about the consideration.	10:14:54
12	Q. And later when some of the patents	10:15:00
13	were transferred from Invitae to Molecular	10:15:02
14	Loop, was a payment made by Molecular Loop for	10:15:06
15	those patents?	10:15:09
16	A. When the patents were transferred	10:15:11
17	by Invitae to Molecular Loop, there was	10:15:13
18	consideration paid for those patents.	10:15:21
19	Q. And can you tell me what	10:15:27
20	considerations was paid?	10:15:29
21	ATTORNEY MATTY: I'll give you the same	10:15:30
22	caution on confidentiality.	10:15:32

1	THE WITNESS: Right.	10:15:34
2	A. I mean, the terms of that agreement	10:15:34
3	are confidential. I don't know how much I can	10:15:35
4	disclose about that.	10:15:37
5	Q. Okay. And do those terms include	10:15:39
6	confidential Invitae information?	10:15:42
7	A. The agreement itself is	10:15:45
8	confidential as far as I know by both Invitae	10:15:46
9	and Molecular Loop.	10:15:50
10	Q. How many patents were transferred	10:15:53
11	from Invitae to Molecular Loop?	10:15:56
12	A. I don't know the exact number at	10:16:01
13	that point in time. It would have probably	10:16:03
14	been more than 10 and less than 50. I don't	10:16:06
15	know the exact number. Some were issued.	10:16:14
16	Some were pending. There were U.S. and	10:16:15
17	international. I don't have the exact number.	10:16:18
18	Q. And was U.S. Patent 11840730 one of	10:16:27
19	the patents that was transferred from Invitae	10:16:32
20	to Molecular Loop?	10:16:35
21	A. I believe at the time it was -- it	10:16:36
22	wasn't issued. I believe at the time it was	10:16:40

1	an application or maybe its predecessor was an	10:16:43
2	application. I don't even remember.	10:16:48
3	Q. Okay. But that application --	10:16:49
4	A. Something in that family was	10:16:51
5	transferred at the time, yes.	10:16:53
6	Q. And you're one of the named	10:16:55
7	inventors on the '730 patent; right?	10:16:57
8	A. Yes.	10:17:01
9	Q. For the patents or patent	10:17:05
10	applications for which you're a named	10:17:06
11	inventor, do you typically prepare a first	10:17:08
12	draft of the application?	10:17:11
13	A. It depends on the specific patent.	10:17:17
14	In some cases, yes. In some cases, no.	10:17:21
15	Q. How do you decide when you do	10:17:27
16	prepare the first draft and when you don't?	10:17:29
17	A. There are a number of factors that	10:17:32
18	go into that. If it's something that we can	10:17:33
19	in some cases easily describe to counsel, it	10:17:40
20	is sometimes more efficient to have a	10:17:44
21	discussion with them and then they come up	10:17:46
22	with a draft and we go from there. In other	10:17:48

1	cases, we would come up with a written	10:17:51
2	document that describes the invention and hand	10:17:53
3	that off to them.	10:17:56
4	Q. In the case of the '730 patent, you	10:18:00
5	prepared the first draft of the application;	10:18:02
6	right?	10:18:03
7	A. Yes, I and my co-inventor, Uri,	10:18:05
8	prepared it.	10:18:08
9	Q. And are you generally familiar with	10:18:10
10	the patent prosecution process?	10:18:11
11	A. At some level. I'm not an	10:18:14
12	attorney, but I've been around it for a while	10:18:16
13	as a layperson.	10:18:18
14	Q. You're a named inventor on dozens	10:18:21
15	of patents; right?	10:18:22
16	A. Yes.	10:18:23
17	Q. And during the prosecution of those	10:18:26
18	patents or patent applications, you've seen	10:18:27
19	the back-and-forth between the applicant and	10:18:30
20	the Patent Office?	10:18:33
21	A. I have, yes.	10:18:36
22	Q. You've dealt with office actions?	10:18:37

1	A.	I have been involved in dealing	10:18:39
2		with office actions, yes. I will say that	10:18:40
3		this application, this set of inventions, of	10:18:44
4		which the '73 is one, was the first one that I	10:18:48
5		was involved in as kind of the point person.	10:18:52
6		This was the first thing we did at Good Start	10:18:56
7		Genetics.	10:18:58
8	Q.	Okay.	10:18:59
9	A.	So it was my first time really	10:18:59
10		going through it.	10:19:01
11	Q.	And for the patents on which you're	10:19:03
12		a named inventor, do you typically file for	10:19:05
13		international rights?	10:19:09
14	A.	It depends on the time period.	10:19:10
15		Early on at Good Start, we were doing more of	10:19:14
16		that. As time went on in the company, at some	10:19:17
17		point we decided to stop at least some of it.	10:19:23
18		At this point in time, we focus primarily on	10:19:27
19		the U.S., but it depends on the specifics of	10:19:30
20		the invention, depends on, you know, frankly	10:19:34
21		the cost, the economics, etc., strategically	10:19:38
22		where we think we might at that point in time	10:19:44

1	want coverage, etc.	10:19:46
2	Q. For the '730 patent, when you filed	10:19:50
3	the U.S. provisional application, you knew	10:19:53
4	that you wanted to seek international rights;	10:19:56
5	right?	10:19:58
6	A. I'm trying to remember. I think we	10:20:02
7	probably wanted to keep our options open at	10:20:07
8	that point, but I'm having trouble coming up	10:20:09
9	with specifics. I don't know.	10:20:18
10	Q. And to obtain international rights,	10:20:20
11	you understand that that would be through the	10:20:22
12	filing of a PCT application?	10:20:24
13	A. I think that's correct, yes.	10:20:26
14	Q. Okay. So turning to your	10:20:29
15	declaration just generally, could you tell me	10:20:35
16	what is the purpose of submitting your	10:20:38
17	declaration in this IPR proceeding?	10:20:40
18	A. The purpose of submitting this	10:20:46
19	declaration, my understanding, is that it is	10:20:48
20	to -- well, at least in part substantiate the	10:20:52
21	fact that we came up with this invention	10:20:57
22	before the patent application was filed and to	10:21:03

1	lay out some of the facts related to that.	10:21:09
2	Q. And how did you go about pulling	10:21:13
3	together your declaration?	10:21:16
4	A. So it was something that I worked	10:21:19
5	on with counsel to prepare.	10:21:22
6	Q. Did you review documents in the	10:21:27
7	process of preparing your declaration?	10:21:31
8	A. I did.	10:21:34
9	Q. How did you obtain those documents?	10:21:39
10	A. So most of it was looking	10:21:45
11	at -- well, searching for and finding emails,	10:22:04
12	some of which contained attachments that were	10:22:07
13	kind of part of the conversation leading up to	10:22:13
14	the filing.	10:22:16
15	Q. Did you go to your computer to do	10:22:18
16	searches for documents that would be relevant	10:22:20
17	to your declaration?	10:22:23
18	A. I did.	10:22:24
19	Q. And you found those documents, did	10:22:25
20	you turn them over to counsel?	10:22:29
21	A. Yes.	10:22:30
22	Q. Who did you work with, other than	10:22:31

1	Uri, in preparing a declaration? Oh, I'm	10:22:34
2	sorry. That's -- I -- strike that. I	10:22:38
3	conflated the declaration with your	10:22:42
4	application.	10:22:43
5	Who did you work with to prepare	10:22:44
6	your declaration?	10:22:46
7	A. I worked with counsel.	10:22:49
8	Q. Can you name them?	10:22:50
9	A. I don't know that I can give an	10:22:55
10	exhaustive list, but certainly Brian Matty,	10:22:56
11	Kevin Goon, and I'm sure there were others.	10:23:01
12	Q. And how long did it take you to	10:23:08
13	prepare this declaration?	10:23:09
14	A. It took a period of -- I'm trying	10:23:13
15	to remember exactly when we started the	10:23:17
16	process. It was -- I want to say it was a	10:23:21
17	period of weeks.	10:23:24
18	Q. Your declaration refers to a number	10:23:28
19	of exhibits.	10:23:29
20	Did you review any documents, other	10:23:34
21	than the exhibits in your declaration, during	10:23:35
22	the process of preparation?	10:23:39

1	A.	Of the declaration?	10:23:43
2	Q.	Yes, during those weeks when you	10:23:45
3		were preparing your declaration, did you	10:23:47
4		review documents, other than what's mentioned	10:23:50
5		as exhibits in your declaration?	10:23:53
6	A.	I may have. I don't recall.	10:23:57
7	Q.	In the process of preparing your	10:24:01
8		declaration, did you review any invoices from	10:24:03
9		the Wolf Greenfield law firm?	10:24:08
10	A.	I don't believe I did.	10:24:24
11	Q.	And why not?	10:24:26
12	A.	I don't -- unless I'm forgetting	10:24:32
13		something, I don't think I have access to Wolf	10:24:35
14		Greenfield invoices.	10:24:37
15	Q.	When you were at Good Start	10:24:40
16		Genetics, the company retained Wolf Greenfield	10:24:41
17		to prosecute patents; right?	10:24:46
18	A.	They did.	10:24:48
19	Q.	And did Wolf Greenfield send	10:24:49
20		invoices for their time worked?	10:24:52
21	A.	I would assume they did.	10:24:55
22	Q.	Okay. And Good Start Genetics paid	10:24:56

1	those invoices; right?	10:24:58
2	A. Yes.	10:25:00
3	Q. So your testimony is that you no	10:25:02
4	longer have access to any of those Wolf	10:25:03
5	Greenfield invoices?	10:25:05
6	A. Yes, that is my testimony. I am	10:25:09
7	not aware of having access to those invoices.	10:25:10
8	Q. Do you know who would have those?	10:25:16
9	A. I don't know.	10:25:23
10	Q. Did you work or speak to -- did you	10:25:25
11	speak to anybody at Wolf Greenfield in the	10:25:28
12	process of preparing the declaration?	10:25:30
13	A. I don't believe I did, no.	10:25:35
14	Q. Other than counsel, did you speak	10:25:41
15	with anyone else to prepare your declaration?	10:25:42
16	A. No.	10:25:44
17	Q. And you prepared -- you had a prep	10:25:48
18	session with your counsel for this deposition	10:25:50
19	today?	10:25:53
20	A. I did.	10:25:54
21	Q. And when was that?	10:25:54
22	A. That was over the last few days.	10:25:55

1	Q.	How many days?	10:26:02
2	A.	It was two days.	10:26:02
3	Q.	Okay. And about how much time did	10:26:05
4		you spend in prep?	10:26:10
5	A.	During those two days?	10:26:12
6	Q.	Yes.	10:26:14
7	A.	The better part of both days.	10:26:14
8	Q.	And who did you meet with during	10:26:20
9		the prep sessions?	10:26:22
10	A.	I met with Brian Matty and Kevin	10:26:24
11		Goon.	10:26:27
12	Q.	Did you meet with or speak with	10:26:31
13		anyone else to prepare for the deposition?	10:26:32
14	A.	No.	10:26:34
15	Q.	Okay. So let me ask you a little	10:26:36
16		bit about the work that you did at the Church	10:26:48
17		Lab, and this is I believe summarized in	10:26:52
18		Paragraph 3 of your declaration.	10:26:55
19		So you were with the Church Lab	10:26:58
20		from 2002 to about 2009; right?	10:27:01
21	A.	That is correct.	10:27:05
22	Q.	Were you an employee or a	10:27:09

1	consultant of the Church Lab in any way?	10:27:10
2	A. I was a graduate student. I don't	10:27:16
3	know what you would consider that. I don't	10:27:19
4	know.	10:27:22
5	Q. Okay. Were there --	10:27:24
6	A. After I got my degree, my title	10:27:28
7	became lecturer on genetics, but I don't -- I	10:27:32
8	don't remember the details of when you say	10:27:40
9	"employee/consultant," I don't know what	10:27:43
10	that -- what that is considered.	10:27:45
11	Q. Did you ever sign any employment or	10:27:47
12	consulting agreement with the Church Lab?	10:27:49
13	A. Not that I recall, no.	10:27:57
14	Q. The work that you did at the Church	10:28:00
15	Lab, to the extent you contributed to	10:28:02
16	inventions there, who did that belong to?	10:28:06
17	A. My understanding there -- Harvard	10:28:12
18	had, probably still does, a written policy on	10:28:16
19	ownership of inventions. I forget the exact	10:28:21
20	specifics though of when you say work that I	10:28:27
21	did there, who did it belong to. There is a	10:28:30
22	policy that governs exactly when that work	10:28:35

1	belongs to Harvard and when it doesn't, and I	10:28:38
2	don't know the specifics of what was in place	10:28:41
3	at that time.	10:28:45
4	Q. Is it your understanding that the	10:28:47
5	work that you had done at the Church Lab, to	10:28:48
6	the extent inventions are created, that that	10:28:55
7	belonged to Harvard University?	10:28:57
8	A. I think it would depend on the	10:29:02
9	specifics.	10:29:03
10	Q. Are you --	10:29:05
11	A. I don't know.	10:29:06
12	Q. Are you aware of anything that you	10:29:06
13	worked on at the Church Lab that still belongs	10:29:09
14	to you right now?	10:29:14
15	A. I'm not aware of anything that I've	10:29:21
16	worked on anywhere that still belongs to me.	10:29:30
17	Q. Are you aware of anything you	10:29:34
18	worked on at the Church Lab that did not get	10:29:36
19	assigned to Harvard University?	10:29:41
20	A. I did work while I was at the	10:29:45
21	Church Lab where I had consulting or other	10:29:46
22	agreements with other third parties that	10:29:51

1	included assignment of invention provisions.	10:29:57
2	I don't recall as I sit here today	10:30:03
3	whether any of those turned into a filing at	10:30:06
4	one of those third parties or not. So I'm not	10:30:13
5	sure I can give you a definitive answer to	10:30:17
6	that question.	10:30:19
7	Q. Those consulting or other	10:30:21
8	agreements with third parties, were you a	10:30:22
9	party to those agreements?	10:30:25
10	A. Yes.	10:30:28
11	Q. And in those agreements, did you	10:30:29
12	directly assign your inventions to the third	10:30:32
13	parties?	10:30:34
14	ATTORNEY MATTY: And I'll give you	10:30:36
15	another caution on confidentiality here. I	10:30:36
16	don't know if there are confidentiality issues	10:30:38
17	at play here. We're getting into topics that	10:30:40
18	have nothing to do with your testimony here.	10:30:44
19	So I just want to caution you that we don't	10:30:45
20	have a protective order, so don't get into	10:30:47
21	confidential details.	10:30:49
22	THE WITNESS: All right.	10:30:51

1	A.	You know, I wouldn't want to give	10:30:56
2		you specifics. I -- there were a number of	10:30:57
3		third parties that I did work for. I don't	10:31:02
4		remember in each case how the assignment	10:31:05
5		provisions worked. I didn't review it in	10:31:09
6		advance. So I don't think I can say anything	10:31:12
7		more about it.	10:31:15
8	Q.	Okay. When you stopped working for	10:31:16
9		the Church Lab in 2009, you did not take any	10:31:19
10		of your work or inventions with you somewhere	10:31:23
11		else; right?	10:31:27
12	A.	Well, in terms of inventions, I	10:31:39
13		didn't take any inventions, no. They were all	10:31:41
14		assigned to the party that owned them.	10:31:46
15		What do you mean take my work? Did	10:31:52
16		I take my work somewhere?	10:31:54
17	Q.	Did you start a project at the	10:31:55
18		Church Lab and then you took the project with	10:31:56
19		you to continue working on it somewhere else?	10:31:58
20	A.	No, I wouldn't characterize it that	10:32:02
21		way. I mean, I had been working on things at	10:32:04
22		the Church Lab. I was working in the field of	10:32:06

1	next-generation sequencing. I had done quite	10:32:11
2	a bit and learned quite a bit, and then I went	10:32:14
3	to Good Start Genetics, which was a company	10:32:18
4	that was one of the first to use	10:32:21
5	next-generation sequencing clinically. So I	10:32:23
6	had all that knowledge in my head, but there	10:32:26
7	wasn't like a specific project that I started	10:32:29
8	in the Church Lab and finished somewhere else,	10:32:32
9	if that's what you're asking.	10:32:34
10	Q. Okay. Was there anything that you	10:32:37
11	started at the Church Lab and finished	10:32:39
12	somewhere else?	10:32:40
13	A. Again, I don't know -- I don't know	10:32:45
14	that there is a distinction. I was always	10:32:48
15	thinking.	10:32:51
16	Q. So while you were at the Church	10:32:56
17	Lab, you said you co-developed the Polony	10:32:58
18	Next-Generation DNA Sequencing Platform; is	10:33:01
19	that right?	10:33:07
20	A. Yes, we pronounced it Polony,	10:33:07
21	but --	10:33:10
22	Q. Polony, but --	10:33:10

1	A.	Fair enough.	10:33:12
2	Q.	It had a little bit of an Italian	10:33:13
3		slang to it.	10:33:15
4		Could you describe what is the	10:33:16
5		Polony Next-Generation DNA Sequencing	10:33:17
6		Platform?	10:33:17
7	A.	Yes, it was one of the first	10:33:21
8		embodiments of the idea of next-generation	10:33:24
9		sequencing. At the time I started the	10:33:26
10		project, the concept didn't even exist, let	10:33:30
11		alone the term. At the time we were calling	10:33:35
12		it second-generation sequencing, but we used	10:33:41
13		it to sequence a bacteria genome. It was one	10:33:44
14		of the first illustrations of how to do	10:33:49
15		massively parallel sequencing. The other big	10:33:52
16		technology at the time was '454, and we and	10:33:55
17		they published our papers within a day or two	10:33:59
18		of each other in 2005.	10:34:02
19	Q.	And who was working on the '454?	10:34:06
20	A.	That was -- that was being done by	10:34:11
21		a company. I don't know the details of who	10:34:12
22		was working on it.	10:34:14

1	Q. You said that the Polony platform	10:34:22
2	was among the first embodiments of the	10:34:23
3	concepts underpinning of modern NGS	10:34:26
4	technology?	10:34:28
5	A. Yes.	10:34:29
6	Q. And what is the concepts that	10:34:30
7	underpin the modern NGS technologies?	10:34:37
8	A. I mean, at the highest level, it is	10:34:40
9	the idea that you are sequencing many, many	10:34:42
10	pieces of DNA in parallel in a multiplex	10:34:47
11	manner. Back then, the other way to do	10:34:52
12	sequencing was what's colloquially known as	10:34:54
13	Sanger sequencing, where you sequence one	10:34:58
14	piece of DNA at a time.	10:35:00
15	Q. And are you aware of anyone else	10:35:04
16	working on these parallel concepts other than	10:35:07
17	Church Lab and '454?	10:35:12
18	A. Oh, there were a number of people	10:35:15
19	working on these concepts at the time. I gave	10:35:16
20	you an example of, as far as I know, two of	10:35:21
21	the first papers where an entire integrated	10:35:24
22	system was reported on. There were a number	10:35:27

1	of companies working on various aspects of	10:35:29
2	that process.	10:35:32
3	Q. Did the Polony platform use a	10:35:35
4	polymerase four sequencing?	10:35:39
5	A. There are multiple versions of --	10:35:47
6	we worked on multiple versions of that	10:35:48
7	technology in the lab. We were attempting to	10:35:50
8	use either polymerase or a ligase. So we did	10:36:00
9	both during the course of the development of	10:36:06
10	that first final platform. The thing that we	10:36:09
11	actually published was a ligase-based	10:36:15
12	sequencing method.	10:36:17
13	Q. Did you ever publish the	10:36:19
14	polymerase-based sequencing method?	10:36:22
15	A. There was a paper earlier than the	10:36:25
16	'05 paper I believe that talked about a	10:36:31
17	polymerase-based method. I don't remember	10:36:34
18	exactly when. I think it came out of the	10:36:37
19	Church Lab, and it was kind of an early	10:36:41
20	illustration of some of those concepts with	10:36:44
21	Polony's.	10:36:48
22	Q. Were you involved in that	10:36:49

1	publication?	10:36:51
2	A. I was -- was I involved in the	10:36:51
3	publication? I don't recall.	10:36:56
4	Q. Were you involved in the work?	10:36:58
5	A. I was doing that kind of work in	10:36:59
6	the lab. I don't recall the details of	10:37:01
7	exactly what I was doing when relative to that	10:37:09
8	publication. I did not review any of that in	10:37:13
9	preparation for this today.	10:37:18
10	Q. Okay. You worked with	10:37:18
11	polymerase-based methods while at the Church	10:37:20
12	Lab?	10:37:22
13	A. Yes.	10:37:23
14	Q. In your declaration, you say that:	10:37:27
15	The Polony platform continued to serve as a	10:37:28
16	vital tool for researchers and remains the	10:37:33
17	gold standard for present-day highly	10:37:35
18	multiplexed parallel sequencing.	10:37:38
19	How so?	10:37:42
20	A. Sorry, could you repeat that	10:37:53
21	question, please?	10:37:54
22	Q. Sure. It's in Paragraph 3 --	10:37:55

1	A. Yes.	10:37:56
2	Q. -- of your declaration. If you	10:37:57
3	look at the bottom of Page 2, going into the	10:38:00
4	top of Page 3, right, you say the -- in	10:38:05
5	reference to the Polony DNA sequencing	10:38:12
6	platform, that this continued to serve as a	10:38:16
7	vital tool for researchers and remains the	10:38:24
8	gold standard for present-day highly	10:38:26
9	multiplexed parallel sequencing, and my	10:38:28
10	question for you is: How does the Polony	10:38:31
11	platform serve as a vital tool and remain the	10:38:36
12	gold standard?	10:38:42
13	A. I don't think that's what this	10:38:43
14	declaration says. What it says is I worked in	10:38:45
15	George's lab -- I'm paraphrasing here. I	10:38:52
16	worked in George's lab where I developed the	10:38:54
17	platform, period. This innovation was among	10:38:56
18	the first embodiment of concepts underpinning	10:38:58
19	modern NGS technologies, which continued to	10:39:02
20	serve as a vital tool for researchers, etc.,	10:39:06
21	etc. So I think when we are talking about	10:39:08
22	continuing to serve as a vital tool for	10:39:12

1	researchers, we're talking about the concepts	10:39:15
2	underpinning modern NGS.	10:39:17
3	Q. Okay.	10:39:20
4	A. Not the Polony platform itself.	10:39:20
5	That's my interpretation of this.	10:39:23
6	Q. So it's the modern NGS technologies	10:39:27
7	that continue to serve as the vital tool and	10:39:29
8	the gold standard?	10:39:34
9	A. Yes, that's correct.	10:39:34
10	Q. You also reference the development	10:39:52
11	of the Polonator. What is that?	10:39:54
12	A. That is another platform. It's	10:39:57
13	another machine that I was involved in	10:40:00
14	developing primarily I think after I got my	10:40:04
15	degree, but was still in George's lab.	10:40:08
16	Q. And what is it? What is the	10:40:14
17	Polonator?	10:40:16
18	A. It is -- yeah, so it's another	10:40:18
19	platform. We learned a lot of lessons with	10:40:24
20	the first system that we built, which was	10:40:28
21	basically a microscope with a bunch of	10:40:31
22	off-the-shelf automation that we put together,	10:40:34

1	wrote software to drive it, but it really	10:40:40
2	was -- if you looked at it, you'd say, That	10:40:43
3	looks like a high-powered microscope.	10:40:45
4	The Polonator was taking that to	10:40:47
5	the next level and engineering basically from	10:40:49
6	the ground up an NGS platform. It still had a	10:40:52
7	microscope objective inside, but the stages,	10:40:58
8	the optics, everything was purpose built for	10:41:03
9	DNA sequencing. We could work on the	10:41:08
10	fluidics. We continued to develop the	10:41:14
11	software behind it. I think that's about all	10:41:18
12	I could say.	10:41:27
13	Q. Could the Polonator be used with a	10:41:34
14	polymerase method of sequencing DNA?	10:41:37
15	A. I don't know. That's a	10:41:41
16	hypothetical that I -- I haven't thought about	10:41:41
17	the details of that system in a long time.	10:41:45
18	Q. During --	10:41:51
19	A. Almost 20 years.	10:41:52
20	Q. During the time you worked the	10:41:53
21	Polonator, you did not use it with a	10:41:55
22	polymerase method of sequencing DNA; right?	10:41:57

1	A. We -- we may have used various --	10:42:00
2	that was a project that multiple people were	10:42:05
3	involved with at one level or another working	10:42:11
4	on various aspects of sequencing. There may	10:42:15
5	have been people working on polymerase-related	10:42:19
6	things. I know there were people working on	10:42:22
7	ligase-related things. I don't know. I -- I	10:42:25
8	did not review any of that in preparation for	10:42:29
9	this, details of that platform and who was	10:42:33
10	working on what in the Church Lab at the time.	10:42:39
11	Q. Sitting here today, you have no	10:42:42
12	personal knowledge of the Polonator being used	10:42:44
13	with a polymerase method of sequencing DNA;	10:42:47
14	right?	10:42:49
15	A. I would not agree with that. I	10:42:51
16	don't remember one way or the other.	10:42:53
17	- - -	10:42:54
18	(Whereupon, '730 Patent, is	10:42:54
19	received and marked as Exhibit 1001 for	10:42:54
20	Identification.)	10:42:54
21	- - -	10:42:54
22		

1	BY ATTORNEY FUKUDA:	10:42:54
2	Q. Let me put the next exhibit in	10:43:03
3	front of you. This is Exhibit 1001, a copy of	10:43:06
4	U.S. Patent 11840730.	10:43:12
5	Dr. Porreca, this is a copy of the	10:43:35
6	'730 patent on which you are one of the named	10:43:36
7	inventors?	10:43:40
8	A. Yes.	10:43:45
9	Q. And the other named inventor was	10:43:45
10	Uri Laserson?	10:43:47
11	A. Yes.	10:43:48
12	Q. Now, in your declaration, you say	10:43:50
13	that -- in Paragraph 5 you say, quote: I	10:43:55
14	conceived of the inventions recited in the	10:43:58
15	claims of the '730 patent at least by March 6,	10:44:01
16	2009.	10:44:04
17	A. Yes.	10:44:10
18	Q. Is that accurate?	10:44:10
19	A. That is accurate.	10:44:12
20	Q. How long did it take you to	10:44:14
21	conceive of those alleged inventions?	10:44:15
22	A. I don't recall specifically. There	10:44:35

1	was work leading up to this March 6 date	10:44:41
2	because this is the date by which we had a	10:44:47
3	written document, but I don't recall	10:44:49
4	specifically before that.	10:44:55
5	Q. About how long did that work take	10:44:59
6	leading up to the March 6 written document?	10:45:01
7	A. I don't recall.	10:45:09
8	Q. Was it days? Weeks? Months? Any	10:45:11
9	sense?	10:45:16
10	A. I wouldn't want to misspeak on it.	10:45:17
11	It certainly wasn't days. I just don't	10:45:19
12	recall. I don't know what the earliest was.	10:45:27
13	Q. What is the alleged invention of	10:45:37
14	the '730 patent?	10:45:38
15	A. It's a method for improving	10:45:43
16	sequencing accuracy. I mean, it's what's	10:45:46
17	claimed at the end of the patent.	10:45:52
18	Q. When you were conceiving of these	10:45:56
19	inventions, in your own words, how would you	10:45:57
20	characterize your invention?	10:46:00
21	A. I would characterize it as -- as a	10:46:04
22	method for improving accuracy. We were -- we	10:46:08

1	were focusing on how to take this really	10:46:10
2	research grade next-gen sequencing and make it	10:46:16
3	clinically -- and adapt it so that it could be	10:46:19
4	used clinically, and this was an idea we came	10:46:23
5	up with for how to improve its accuracy. You	10:46:29
6	know, to get specific about it, I would -- I	10:46:33
7	would go to the claims, like that's the	10:46:36
8	invention.	10:46:38
9	Q. So in your own words, can you tell	10:46:42
10	me more specifically how the '730 alleged	10:46:43
11	invention improved the accuracy sequencing?	10:46:48
12	A. It improved the accuracy by	10:46:55
13	employing the process that's laid out in here.	10:47:01
14	I mean, I can -- I'm sure you don't want me to	10:47:04
15	walk through the claims, but the claims are	10:47:08
16	the invention.	10:47:09
17	Q. Right.	10:47:11
18	So you -- other than reading me the	10:47:12
19	claims of the '730 patent, you're unable to	10:47:13
20	characterize in your own words what the	10:47:16
21	invention is?	10:47:18
22	ATTORNEY MATTY: Objection.	10:47:19

1	Mischaracterizes testimony.	10:47:20
2	A. I am able to characterize it, but I	10:47:25
3	would use the patent to characterize it	10:47:27
4	because that's the invention.	10:47:29
5	Q. Okay. What about back when you	10:47:31
6	were preparing the March 6 draft application,	10:47:34
7	you did that first draft; right?	10:47:39
8	A. The March 6 draft application was	10:47:42
9	prepared by Uri and me.	10:47:46
10	Q. Okay. Okay. And at that time on	10:47:48
11	March 6, 2009, what was your understanding of	10:47:53
12	the invention you were putting into the	10:47:57
13	application?	10:48:00
14	A. At that time, our understanding of	10:48:02
15	the invention was what we put in that	10:48:03
16	document.	10:48:06
17	Q. Okay.	10:48:08
18	So if you can, in your own words,	10:48:15
19	could you describe how the '730 alleged	10:48:19
20	invention was different from what was already	10:48:23
21	known in the prior art in March of 2009?	10:48:25
22	ATTORNEY MATTY: Objection to scope.	10:48:30

1	A.	That's a big question. How was it	10:48:40
2		different than what was in the prior art?	10:48:43
3		That -- that is a bit -- I -- I'm not -- I	10:48:45
4		don't think I'm prepared to do that.	10:48:46
5	Q.	How did you come up with the idea	10:48:53
6		that's in the '730 alleged invention?	10:48:56
7	A.	We were thinking about ways to	10:49:01
8		improve next-generation sequencing. We had a	10:49:06
9		good understanding of, at the time, what its	10:49:09
10		limitations were, and we were brainstorming	10:49:13
11		ways to improve on those limitations.	10:49:17
12	Q.	What were those limitations?	10:49:21
13	A.	They were limitations in accuracy,	10:49:24
14		limitations in the types of things that -- the	10:49:28
15		types of lesions that could be detected or	10:49:30
16		measured with the technology. The tool at the	10:49:34
17		time was really used for research, and the	10:49:38
18		level of accuracy that's required for clinical	10:49:43
19		applications is different. We knew that at	10:49:46
20		the time.	10:49:48
21	Q.	Back in 2009, what did you view --	10:49:52
22		back in March of 2009, what did you understand	10:50:01

1	were the limitations in accuracy?	10:50:05
2	A. What did we understand were the	10:50:10
3	limitations in accuracy? Well, this is an	10:50:13
4	example. The problem that this solves is one	10:50:25
5	example of a limitation that we identified at	10:50:32
6	the time.	10:50:34
7	Q. By "this" you mean the '730 patent	10:50:37
8	inventions?	10:50:39
9	A. That is correct, the inventions in	10:50:41
10	the '730.	10:50:43
11	Q. Okay. And what was that limitation	10:50:45
12	or the problem that the '730 invention	10:50:48
13	involved?	10:50:50
14	A. It was a limitation in the accuracy	10:50:50
15	of the sequencing.	10:50:52
16	Q. And what was causing that	10:50:55
17	limitation?	10:50:57
18	A. I mean, there is a lot of detail in	10:50:59
19	this patent, and so again, I don't think I'm	10:51:01
20	prepared to go through the entire thing.	10:51:10
21	Q. Can you give me, you know, some	10:51:14
22	detail about how the '730 invention solved a	10:51:19

1	limitation in the accuracy of sequencing?	10:51:23
2	A. I really wouldn't want to give you	10:51:28
3	detail and risk mischaracterizing what is in	10:51:30
4	here and the full scope of this invention.	10:51:34
5	Q. So you joined Good Start Genetics	10:52:06
6	as a consultant in January of 2009; right?	10:52:07
7	A. I believe that's the date. Is that	10:52:16
8	what's in this declaration?	10:52:19
9	Q. You can refer to Paragraph 7 of	10:52:20
10	your declaration.	10:52:22
11	A. Yes, that's correct.	10:52:24
12	Q. And you became a full-time employee	10:52:42
13	at Good Start Genetics on April 1, 2009?	10:52:46
14	A. That's correct.	10:52:49
15	Q. So you conceived of the '730 claims	10:52:53
16	before you became an employee of Good Start	10:52:58
17	Genetics?	10:53:00
18	A. I conceived of the -- well, the	10:53:06
19	March 6 date is before April 1. So by	10:53:08
20	March 6, we had conceived of the invention,	10:53:14
21	which was prior to April 1.	10:53:17
22	Q. Okay. And when did you start	10:53:20

1	working on the inventions that led to that	10:53:24
2	conception?	10:53:27
3	A. I think that's the same question as	10:53:34
4	before. I don't remember exactly when we	10:53:36
5	started thinking about the invention.	10:53:40
6	Q. Was it before 2009?	10:53:44
7	A. No, I don't think it was, but I	10:53:51
8	didn't -- I didn't look carefully at that in	10:53:57
9	preparation for this because we were dealing	10:54:01
10	with the March 6 date here.	10:54:07
11	Q. Okay. So you can't tell me whether	10:54:11
12	you started the conception before 2009 or	10:54:13
13	after?	10:54:16
14	A. I believe it was in 2009, but	10:54:23
15	again, I did review everything carefully in	10:54:25
16	advance of this in that time frame.	10:54:27
17	Q. At the time March 6 of 2009, you	10:54:35
18	were working for Good Start Genetics less than	10:54:41
19	three months?	10:54:43
20	A. That is correct.	10:54:49
21	Q. Now, you conceived of the alleged	10:55:03
22	inventions of the '730 patent in 2009, but	10:55:06

1	the '730 patent did not issue until 2023; is	10:55:13
2	that right?	10:55:17
3	A. Well, we just had a discussion	10:55:21
4	about, yes, the invention was conceived of by	10:55:23
5	me on March 6 of 2009. So that's the first	10:55:30
6	part of the question, and then the second part	10:55:36
7	was what? When did the claims issue?	10:55:39
8	Q. And the '730 patent did not issue	10:55:44
9	until December 12, 2023; is that right?	10:55:47
10	A. That's correct.	10:55:49
11	Q. Why did it take so long?	10:55:51
12	A. There was a fairly lengthy	10:55:54
13	prosecution from what I remember. I did not	10:56:00
14	review the prosecution history in preparation	10:56:09
15	for this. So I can't speak to the details,	10:56:12
16	but I do recall there was a lengthy	10:56:15
17	prosecution.	10:56:21
18	Q. Now, going back to Paragraph 5 of	10:56:25
19	your declaration, you said that you conceived	10:56:35
20	of the inventions recited in the claims of	10:56:37
21	the '730 patent at least by March 6, 2009	10:56:40
22	while working for Good Start Genetics; right?	10:56:45

1	A.	Yes.	10:56:47
2	Q.	But you conceived only some of the	10:56:51
3		claims of the '730 patent by that time; isn't	10:56:53
4		that right?	10:56:58
5	A.	I don't know. I don't know how to	10:57:13
6		answer that.	10:57:18
7	Q.	Is it your testimony today that you	10:57:20
8		conceived all of the claims of the '730 patent	10:57:21
9		by March 6, 2009?	10:57:26
10	A.	My testimony is that I -- that I --	10:57:37
11		that we documented the invention on March 6	10:57:40
12		and that invention became the '730 patent.	10:57:44
13	Q.	You --	10:57:51
14	A.	I don't -- I don't know -- I don't	10:57:52
15		know that I can do the exercise of mapping	10:57:56
16		claims from this to the March 6 document. I	10:58:03
17		know there are experts who are doing that, but	10:58:09
18		that's not something that I'm prepared to do	10:58:11
19		today.	10:58:14
20	Q.	When you prepared your declaration,	10:58:15
21		you did not do the mapping of your conception	10:58:18
22		document to the claims of the '730 patent?	10:58:20

1	A.	My understanding is that the	10:58:34
2		March 6 document describes the invention that	10:58:37
3		is in the '730 patent.	10:58:42
4	Q.	Well, your statement said that you	10:58:50
5		conceived of the inventions recited in the	10:58:52
6		claims of the '730 patent at least by March 6,	10:58:54
7		2009; right?	10:58:58
8	A.	That is correct.	10:59:00
9	Q.	Did you do a mapping of your	10:59:03
10		conception document to the claims of the '730	10:59:04
11		patent in preparing your declaration?	10:59:07
12	A.	I don't recall exactly what I did	10:59:19
13		at the time, but this patent and the claims	10:59:21
14		that are in this patent is the invention	10:59:25
15		that's described in the March 6 document.	10:59:30
16	Q.	And would that -- did you conceive	10:59:31
17		of the inventions of all the claims of the	10:59:33
18		'730 patent by March 6, 2009?	10:59:38
19	A.	I don't think that's what this	10:59:42
20		says.	10:59:43
21	Q.	That's what I'm trying to get to.	10:59:46
22		When you say the claims --	10:59:49

1	A.	I stand by what I said here, which	10:59:50
2		is I conceived of the inventions recited in	10:59:51
3		the claims of the '730 patent.	10:59:53
4	Q.	Okay.	10:59:55
5	A.	I think you're asking a different	10:59:55
6		question and I stand by what I said here.	10:59:57
7	Q.	Okay. And I'm trying to get at	10:59:59
8		what you're actually saying.	11:00:01
9		So when you say the claims of the	11:00:02
10		'730 patent in Paragraph 5, are you referring	11:00:04
11		to all the claims of the '730 patent or just	11:00:07
12		some of the claims of the '730 patent?	11:00:10
13	A.	I'm referring to the claims of the	11:00:15
14		'730 patent.	11:00:17
15	Q.	Which claims?	11:00:18
16	A.	That's what I'm referring to. The	11:00:18
17		claims.	11:00:20
18	Q.	You can't tell me which claims of	11:00:21
19		the '730 patent?	11:00:22
20	A.	I am not prepared to map claims to	11:00:23
21		the document.	11:00:26
22	Q.	Okay. So you don't know whether	11:00:29

1	you conceived of the inventions recited in	11:00:30
2	every claim of the '730 patent?	11:00:36
3	A. No, I'm not prepared to do that	11:00:39
4	mapping today.	11:00:40
5	Q. Okay. And you don't know exactly	11:00:42
6	which claim of the '730 patent you had	11:00:46
7	conceived of at least by March 6, 2009?	11:00:52
8	A. I'm not prepared to do that mapping	11:00:56
9	today.	11:00:57
10	Q. Okay.	11:01:22
11	ATTORNEY FUKUDA: Do you want to take a	11:01:23
12	break?	11:01:24
13	ATTORNEY MATTY: Sure.	11:01:25
14	ATTORNEY FUKUDA: Short break.	11:01:26
15	THE WITNESS: All right.	11:01:28
16	THE VIDEOGRAPHER: Going off the record	11:01:29
17	at 11:01 a.m.	11:01:29
18	- - -	11:01:31
19	(Whereupon, a short recess was	11:01:31
20	taken.)	11:01:31
21	- - -	11:01:31
22	THE VIDEOGRAPHER: Stand by, please.	11:09:25

1	We are back on the record at 11:09 a.m.	11:05:51
2	- - -	11:09:53
3	(Whereupon, document ML IPR 1	11:09:53
4	through 21, is received and marked as Exhibit	11:09:53
5	1053 for Identification.)	11:09:53
6	- - -	11:09:53
7	BY ATTORNEY FUKUDA:	11:09:56
8	Q. Dr. Porreca, I'm putting in front	11:09:57
9	of you what's been marked as Exhibit 1053, a	11:09:59
10	copy of a document bearing numbers MLIPR1	11:10:03
11	through 21.	11:10:09
12	ATTORNEY MATTY: Thank you.	11:10:17
13	Q. After you've had a chance to flip	11:10:28
14	through that, I'm going to ask you whether	11:10:30
15	this document looks familiar to you.	11:10:32
16	A. Yes, it does.	11:10:36
17	Q. Was this one of the documents that	11:10:39
18	you found on your computer and sent to	11:10:40
19	counsel?	11:10:43
20	A. Yes, I found this document on my --	11:10:50
21	it was in my email, but I found this document	11:10:54
22	or the same version of it. This might have	11:10:59

1	been produced by Wolf Greenfield. I don't	11:11:01
2	know, but this document was among my	11:11:04
3	documents.	11:11:07
4	Q. Okay. And you see at the bottom of	11:11:09
5	that first page, Page 1, there is an email	11:11:12
6	from you, Gregory Porreca, that was sent	11:11:17
7	March 6, 2009; right?	11:11:21
8	A. Yes.	11:11:24
9	Q. And that is an email that you sent?	11:11:25
10	A. This looks like -- the email above	11:11:37
11	was sent by Eric to Patrick, and I think	11:11:43
12	what's shown below would have been an email --	11:11:50
13	I didn't send the email below directly to	11:11:54
14	Patrick, if that's what you're asking. I sent	11:11:56
15	the email, but Eric is referencing this email	11:11:59
16	in his -- in his above message.	11:12:07
17	Q. Okay. Okay.	11:12:10
18	Yeah, my question is just that the	11:12:11
19	bottom half of that first page is an email	11:12:14
20	that you sent on March 6, 2009; right?	11:12:17
21	A. Yes.	11:12:20
22	Q. Okay. Who did you send that email	11:12:21

1	to?	11:12:22
2	A. It doesn't say here who I sent it	11:12:40
3	to.	11:12:41
4	Q. Do you --	11:12:43
5	A. It would have been Eric.	11:12:43
6	Q. Do you remember who you sent the	11:12:44
7	email to?	11:12:45
8	A. Yeah. At the time, Eric was	11:12:51
9	primarily dealing -- was primarily interfacing	11:12:53
10	with Patrick, because at this point, I was	11:12:56
11	consulting for Good Start Genetics. So this	11:13:01
12	was an email that I had drafted for Eric that	11:13:07
13	included all the information that needed to be	11:13:12
14	passed on.	11:13:15
15	Q. Okay. So you'll see attached to	11:13:17
16	this email are a series of figures, as well as	11:13:21
17	a document with texts, multiple documents with	11:13:30
18	texts; right?	11:13:36
19	A. Yes, that's correct.	11:13:40
20	Q. Were these documents that you had	11:13:46
21	attached in your email to Eric?	11:13:47
22	A. These were documents that I was	11:14:20

1	responsible for, at a minimum, collating and	11:14:22
2	in many cases drafting parts of, etc., and	11:14:27
3	that -- and that I sent to Eric for him to	11:14:35
4	send on to Patrick with his cover letter.	11:14:42
5	Q. Okay. Okay.	11:14:46
6	So if you could turn to Page 3 and	11:14:47
7	4, those are the figures that you passed along	11:14:53
8	to Eric -- is it Boutin?	11:14:59
9	A. Eric Boutin, yeah.	11:15:02
10	Q. Boutin. And who was Eric Boutin at	11:15:05
11	the time?	11:15:07
12	A. Eric was one of the founders of	11:15:08
13	Good Start Genetics --	11:15:12
14	Q. Okay.	11:15:15
15	A. -- on the business side.	11:15:15
16	Q. So the figures on Pages 3 and 4,	11:15:18
17	are those associated with the draft	11:15:20
18	application for the '730 patent?	11:15:24
19	A. Yes.	11:15:28
20	Q. And starting on Page 5, you see a	11:15:32
21	document that is titled: Methods for Reducing	11:15:34
22	Bias in Preparations of Nucleic Acids, and	11:15:36

1	that document ends on Page 10?	11:15:39
2	A. Yes.	11:15:46
3	Q. Is that the document that you had	11:15:47
4	prepared as a first draft of the application	11:15:49
5	for the '730 patent?	11:15:52
6	A. Yes.	11:16:00
7	Q. And I see that there are a couple	11:16:04
8	of additional documents attached starting on	11:16:05
9	Page 11 onward. Are those for different	11:16:07
10	applications that you were working on at the	11:16:10
11	time?	11:16:13
12	A. Yes, these are other inventions	11:16:25
13	that we were working on at the time.	11:16:29
14	Q. In your declaration on Page 5,	11:16:36
15	Paragraph 8, you said that based on your	11:16:41
16	review: I sent the March 6 application and	11:16:45
17	its accompanying figures to Patrick Waller at	11:16:50
18	Wolf Greenfield on March 6, 2009.	11:16:53
19	You did not directly send them to	11:16:58
20	Patrick Waller; right?	11:17:00
21	A. Could you point me to that	11:17:09
22	statement? I'm sorry.	11:17:11

1	Q.	Sure. It's on Page 5 of your	11:17:11
2		declaration.	11:17:13
3	A.	Yep.	11:17:13
4	Q.	Right in the middle, it's part of	11:17:15
5		Paragraph 8.	11:17:17
6	A.	I mean, I think it depends on	11:18:07
7		exactly how you're looking at this, because	11:18:12
8		this email -- this email that I wrote went to	11:18:15
9		Patrick Waller on Friday, March 6, and it	11:18:21
10		contained the attachments we just discussed.	11:18:25
11	Q.	My question is just that you did	11:18:28
12		not directly send this email with the attached	11:18:29
13		application to Patrick Waller; right?	11:18:33
14	A.	I mean, there is an email here from	11:18:41
15		me that's going to Patrick Waller on March 6.	11:18:44
16	Q.	The email from you doesn't have a	11:18:50
17		to line; isn't that right?	11:18:52
18	A.	That is correct.	11:18:57
19	Q.	And it was Eric Boutin that	11:18:58
20		forwarded the information to Patrick Waller;	11:19:00
21		right?	11:19:04
22	A.	I mean, there is an email here from	11:19:13

1	Eric Boutin to Patrick Waller that includes	11:19:15
2	the email that I'd written with all the	11:19:22
3	information. That's what I see here.	11:19:24
4	Q. Okay. So it was Mr. Boutin who	11:19:27
5	sent your application to Patrick Waller;	11:19:30
6	right.	11:19:32
7	A. This document shows an email that I	11:20:01
8	had written that is going to Patrick Waller on	11:20:02
9	March 6.	11:20:12
10	Q. So, Dr. Porreca, the person that	11:20:23
11	sent the email to Patrick Waller is Mr. Boutin	11:20:25
12	and not you; right?	11:20:29
13	A. This email from Eric Boutin --	11:20:33
14	there is an email here from Eric Boutin to	11:20:36
15	Patrick Waller.	11:20:38
16	Q. Right. And there is no email here	11:20:40
17	that was sent by you to Patrick Waller; right?	11:20:42
18	A. This is showing an email that I	11:20:51
19	drafted that went to Patrick Waller, and it's	11:20:53
20	showing an email that Eric sent to Patrick	11:20:56
21	Waller.	11:20:59
22	Q. The attached application is -- you	11:21:05

1	said that you drafted this application along	11:21:08
2	with Mr. Laserson; right?	11:21:10
3	A. Yes.	11:21:18
4	Q. Do you remember which portions you	11:21:19
5	had prepared versus which portions he had	11:21:21
6	prepared?	11:21:25
7	A. Not specifically, no.	11:21:30
8	Q. Do you recall what Mr. Laserson had	11:21:34
9	contributed to this application?	11:21:37
10	A. Not specifically, no.	11:21:41
11	Q. Okay. Generally any idea?	11:21:43
12	A. No. We both -- we both discussed	11:21:46
13	the problems that we were trying to solve and	11:21:48
14	we came up with the invention here.	11:21:51
15	Q. Okay. You worked together on all	11:21:53
16	of the concepts in the application?	11:21:56
17	A. We worked together on the	11:21:58
18	invention. I don't remember who exactly did	11:21:59
19	which parts of the specific document that	11:22:06
20	we're talking about here.	11:22:10
21	Q. And the application I'm referring	11:22:12
22	to is the one from Page 3 through Page 10.	11:22:14

1	A.	That is correct.	11:22:24
2	Q.	Okay. Other than you and	11:22:24
3		Mr. Laserson, did anyone else help prepare	11:22:25
4		this application?	11:22:27
5	A.	Well, counsel at Wolf Greenfield.	11:22:33
6	Q.	Anyone else?	11:22:38
7	A.	No.	11:22:38
8	Q.	Did you review this application	11:22:43
9		carefully before it was sent to Wolf	11:22:44
10		Greenfield?	11:22:46
11	A.	The March 6 application?	11:22:52
12	Q.	Yes. The one that you're looking	11:22:53
13		at here from Pages 5 through 10.	11:22:55
14	A.	Yes.	11:22:58
15	Q.	And does this application	11:23:05
16		accurately reflect your invention at the time?	11:23:08
17	A.	Yes, I think it does.	11:23:26
18	Q.	If you could turn to Page 6 of that	11:23:40
19		exhibit. There is a subsection called:	11:23:43
20		Summary of the Invention Detail Description.	11:23:56
21		Do you see that?	11:24:00
22	A.	Yes.	11:24:00

1	Q.	And the first sentence says: The	11:24:02
2		invention is the composition and use of a	11:24:04
3		large library of unique molecular barcodes in	11:24:07
4		preparative steps for reducing the effects of	11:24:12
5		the bias described above.	11:24:13
6		Is that an accurate statement?	11:24:17
7	A.	I mean, that's what's written on	11:24:24
8		the page, yes.	11:24:25
9	Q.	Right, is it an accurate statement?	11:24:27
10	A.	An accurate statement about what?	11:24:30
11	Q.	About what the invention is?	11:24:32
12	A.	Well, it's a statement about the	11:24:37
13		invention. I'm not sure that I would -- I	11:24:38
14		don't know exactly what the question is --	11:24:41
15		is -- is meant to elicit. I don't know that	11:24:44
16		this is an all-encompassing statement of the	11:24:47
17		invention, if that's what you're getting at,	11:24:50
18		but it is a statement about the invention.	11:24:52
19	Q.	Dr. Porreca, I'm just asking you is	11:24:55
20		that statement accurate?	11:24:56
21	ATTORNEY MATTY:	Objection. Asked and	11:25:00
22		answered.	11:25:01

1	A.	This is an accurate statement about	11:25:02
2		the invention. It is not meant to be an	11:25:04
3		all-encompassing description of the invention.	11:25:10
4	Q.	In that statement, you refer to	11:25:16
5		reducing the effects of the bias described	11:25:17
6		above.	11:25:20
7		Do you see that?	11:25:23
8	A.	I do.	11:25:24
9	Q.	And the title of this application	11:25:25
10		is: Methods for Reducing Bias in Preparation	11:25:28
11		of Nucleic Acids.	11:25:32
12		What did you mean by "bias"?	11:25:36
13	A.	I mean, this document as a whole	11:25:49
14		describes what we meant -- what the invention	11:25:53
15		is. I wouldn't want to just try to quickly	11:25:56
16		characterize for you what we meant by that	11:26:00
17		right now. The document as a whole is what	11:26:04
18		describes the whole invention.	11:26:06
19	Q.	I'm just asking about that one word	11:26:09
20		right now "bias"?	11:26:10
21	A.	Yeah.	11:26:13
22	Q.	And you use that word in preparing	11:26:13

1	your application? Yes?	11:26:15
2	A. Yes, we did.	11:26:17
3	Q. What did "bias" mean to you when	11:26:20
4	you were preparing this application?	11:26:21
5	A. We described in the application the	11:26:26
6	way "bias" is used in the application is what	11:26:31
7	it meant to us at the time.	11:26:33
8	Q. So what is it?	11:26:40
9	A. I am not prepared to sit here and	11:26:40
10	provide a definition to specific words that	11:26:42
11	are in this application because the entire	11:26:46
12	thing needs to be read in context.	11:26:49
13	Q. So you don't know what "bias" means	11:26:53
14	as used in your application.	11:26:55
15	A. I know what the application says,	11:26:59
16	and as used in the application, it's --	11:27:00
17	it's -- it's very clearly defined, but you	11:27:05
18	have to look at the entire application as a	11:27:09
19	whole. I can't just sit here and define that	11:27:12
20	or other words in this without referring to	11:27:19
21	the entire thing.	11:27:21
22	Q. Can you show me where in the	11:27:23

1	application "bias" is defined?	11:27:25
2	A. "Bias" is throughout this	11:27:27
3	application, and again, I'm not prepared to go	11:27:30
4	through and do that kind of an analysis here.	11:27:34
5	Q. And do you personally have any	11:27:37
6	understanding of what "bias" means in the	11:27:39
7	context of this application?	11:27:41
8	A. My understanding of what "bias"	11:27:46
9	means in the context of this application is	11:27:47
10	driven by what's in this application.	11:27:49
11	Q. Right. Can you tell me what it is?	11:27:53
12	A. Again --	11:27:54
13	Q. Are you able to articulate it?	11:27:55
14	A. I am not prepared to -- I'm not	11:27:57
15	prepared to give a definition beyond what is	11:28:02
16	in this application.	11:28:05
17	Q. Okay. So you can't even tell me	11:28:06
18	what "bias" means sitting here today?	11:28:07
19	A. I cannot give you that kind of an	11:28:12
20	analysis beyond what is in this application.	11:28:13
21	Q. Could you look at -- take you back	11:28:21
22	to Page 6. So we looked at the first sentence	11:28:25

1	under summary of the invention; right?	11:28:34
2	The next sentence says: During the	11:28:37
3	library preparation process, each molecule is	11:28:39
4	tagged with a unique in such a configuration	11:28:42
5	such that the barcode is sequenced along with	11:28:47
6	the information of interest for which the	11:28:49
7	library is being prepared.	11:28:52
8	Do you see that sentence?	11:28:54
9	A. I do.	11:28:56
10	Q. It looks like it's missing some	11:28:57
11	words. It says "tagged with a unique."	11:28:58
12	Do you know what that's	11:29:02
13	referencing?	11:29:04
14	A. No. I would need to study this	11:29:14
15	whole thing. I don't want to just give you a	11:29:16
16	flip answer.	11:29:19
17	Q. Would that "unique" be referencing	11:29:20
18	the unique molecular barcodes referenced in	11:29:22
19	the previous sentence?	11:29:24
20	A. Again, I don't want to provide you	11:29:27
21	with specific words, because I would need	11:29:29
22	to -- I'd need to study the whole thing in	11:29:31

1	context. I agree with you it looks like	11:29:36
2	something was left out there, but I am not	11:29:37
3	going to trying to try to speculate right now	11:29:39
4	and fill in what that is.	11:29:41
5	Q. You don't know what it is at this	11:29:43
6	point?	11:29:44
7	A. I'm not going to try to speculate	11:29:46
8	on what that is at this point.	11:29:47
9	Q. Could you turn to Page 7 of the	11:30:01
10	application.	11:30:03
11	A. Yes.	11:30:07
12	Q. If you look at the second	11:30:15
13	paragraph, it's that large paragraph in the	11:30:16
14	middle, and you go to that last sentence, it	11:30:18
15	starts with "however."	11:30:23
16	Do you see it?	11:30:24
17	A. I do.	11:30:25
18	Q. Okay. And in your application, it	11:30:25
19	says: However, the library is designed to be	11:30:29
20	significantly larger than the pool of	11:30:34
21	molecules of interest. This ensures that the	11:30:35
22	incorporation of the barcodes is significantly	11:30:38

1	undersampling the population of unique	11:30:41
2	barcodes, ensuring that distribution of the	11:30:43
3	unique barcodes that was actually incorporated	11:30:47
4	is effectively uniform; right?	11:30:50
5	Is that one of the things you	11:30:53
6	described about your invention?	11:30:54
7	A. That is the statement that's in	11:30:57
8	this document, yes.	11:30:59
9	Q. Right. And it's a description of a	11:31:02
10	portion of your invention; right?	11:31:04
11	A. It's part of what's -- it's part of	11:31:08
12	what's in this document that, as a whole,	11:31:11
13	describes the invention.	11:31:12
14	Q. If you look at the very last	11:31:14
15	sentence on Page 7 it says: Therefore, the	11:31:15
16	probability of the same barcode getting	11:31:18
17	incorporated multiple times is incredibly	11:31:21
18	small.	11:31:24
19	Do you see that?	11:31:27
20	A. I do.	11:31:27
21	Q. And why is that important?	11:31:27
22	A. I don't know if that's important or	11:31:42

1	not. I would have to study this whole thing.	11:31:43
2	I mean, that's a statement we made in the	11:31:45
3	context of this specific part of the	11:31:47
4	disclosure.	11:31:51
5	Q. Sitting here today --	11:31:56
6	A. I don't know that I would	11:31:56
7	characterize it as important or as	11:31:57
8	nonimportant. I'm not prepared to get into	11:32:00
9	that.	11:32:02
10	Q. Sitting here today, you're unable	11:32:07
11	to tell me whether the incorporation of unique	11:32:08
12	barcodes in your invention is important or not	11:32:11
13	important?	11:32:14
14	ATTORNEY MATTY: Objection.	11:32:15
15	Mischaracterizes testimony.	11:32:16
16	A. Can you repeat the question,	11:32:21
17	please?	11:32:21
18	Q. Sitting here today, you're unable	11:32:23
19	to tell me whether the incorporation of unique	11:32:24
20	barcodes in your invention is important or not	11:32:27
21	important?	11:32:30
22	A. I'm not prepared to discuss	11:32:33

1	something specific like that.	11:32:39
2	Q. And you can't even answer that	11:32:41
3	question?	11:32:42
4	A. I can't answer the question because	11:32:45
5	I'm not prepared to discuss it.	11:32:46
6	Q. You were concerned about a prior	11:32:54
7	art reference called McCloskey back in March	11:32:56
8	of 2009; right?	11:32:59
9	A. Well, McCloskey is a -- is	11:33:08
10	something that we flagged in 2009. I don't	11:33:14
11	know that this email that you've put in front	11:33:20
12	of me here says that we were concerned about	11:33:23
13	it.	11:33:25
14	Q. So turning back to Page 1 of	11:33:28
15	Exhibit 1053, the bottom half is a document	11:33:34
16	you had prepared; right?	11:33:39
17	A. Yes.	11:33:40
18	Q. Okay. And you say -- and this	11:33:41
19	looks like it was sent to or at least it was	11:33:45
20	addressed to Patrick. It says: Hello,	11:33:48
21	Patrick. Please find drafts of our three	11:33:51
22	provisional patent applications attached;	11:33:54

1	right?	11:33:56
2	And then if you look at the big	11:34:00
3	paragraph at the bottom, there are three	11:34:01
4	items, 1, 2, and 3.	11:34:02
5	Item 2 you say: How much overlap	11:34:05
6	do you see in the bias detecting barcodes	11:34:09
7	application with the patent reference called	11:34:13
8	out in Note 1 on Page 1, McCloskey, et al.	11:34:14
9	Do you see that?	11:34:19
10	A. I do.	11:34:19
11	Q. Okay. The bias detecting barcodes	11:34:20
12	application is the application we've been	11:34:22
13	talking about that led to the '730 patent;	11:34:23
14	right?	11:34:26
15	A. Yes.	11:34:29
16	Q. And McCloskey here is -- you see	11:34:30
17	how right under Item Number 3, you have a more	11:34:34
18	specific spell out of what McCloskey is. It	11:34:37
19	says: McCloskey, et al., U.S. Patent	11:34:40
20	Application Number U.S. 2007/0020640A1?	11:34:44
21	A. Yes, I do.	11:34:51
22	Q. Okay. That is the McCloskey	11:34:52

1	reference you were talking about in Item 2;	11:34:54
2	right?	11:34:59
3	A. Yes, it is.	11:35:00
4	Q. Okay. And you had a question about	11:35:00
5	how much overlap there is between your	11:35:06
6	application and the McCloskey reference;	11:35:08
7	right?	11:35:10
8	A. Do you know what? Actually, sorry,	11:35:17
9	I want to go back a minute.	11:35:19
10	So Number 2, the question of how	11:35:22
11	much overlap. We're saying "McCloskey, et	11:35:24
12	al.," there are two things McCloskey, et al.	11:35:31
13	on this list under 3. So I think that's how I	11:35:34
14	would answer that previous question. There	11:35:56
15	are two things here that say "McCloskey."	11:35:57
16	There is a biochemical genetics paper and	11:36:01
17	there's a patent application to answer your	11:36:01
18	specific previous question.	11:36:04
19	Q. Under Item 2, when you say -- it	11:36:27
20	says: Item 2 talks about the patent reference	11:36:30
21	called out in Note 1 on Page 1.	11:36:33
22	Do you see that?	11:36:37

1	A.	I do, yes.	11:36:38
2	Q.	Could you turn to Page 6, okay?	11:36:39
3		And that's your application that led to the	11:36:43
4		'730 patent; right?	11:36:46
5	A.	Yes.	11:36:48
6	Q.	Okay. If you look at the -- I	11:36:49
7		guess the second paragraph from the top, there	11:36:51
8		is a Note 1?	11:36:53
9	A.	Yes.	11:36:55
10	Q.	Okay. And is that the Note 1 that	11:36:56
11		was mentioned in Item 2?	11:37:00
12	A.	Yes.	11:37:05
13	Q.	Okay.	11:37:06
14	A.	You're correct.	11:37:06
15	Q.	All right.	11:37:08
16	A.	That's right.	11:37:09
17	Q.	So Note 1 says: There is some	11:37:09
18		prior art associated with random barcodes, but	11:37:11
19		I'm not sure if it anticipates the	11:37:14
20		applications we're interested in. See mainly	11:37:16
21		USPTO Publication Number U.S. 2007/0020640A1	11:37:20
22		McCloskey, et al.	11:37:29

1	Do you see that?	11:37:31
2	A. I do.	11:37:32
3	Q. Okay. So McCloskey is a prior art	11:37:32
4	reference that you were aware of and	11:37:37
5	discussing here in this document; right?	11:37:40
6	A. This doesn't exactly say that	11:37:45
7	McCloskey is -- this says there is some prior	11:37:48
8	art associated with random barcodes, and then	11:37:55
9	it says: See mainly, etc., McCloskey.	11:38:00
10	McCloskey is something that we were	11:38:08
11	aware of at the time and disclosed to our	11:38:10
12	prosecution counsel.	11:38:15
13	Q. And McCloskey is prior art to your	11:38:16
14	inventions here in this application?	11:38:18
15	A. I mean, I'm not sure that that's	11:38:28
16	what this is saying exactly. It is a	11:38:29
17	reference that we had found and had flagged	11:38:32
18	for our attorneys.	11:38:35
19	Q. Dr. Porreca, you say here: There	11:38:41
20	is some prior art associated with random	11:38:43
21	barcodes, but I'm not sure if it anticipates	11:38:46
22	the applications we're interested in. See	11:38:49

1	mainly, and then there is a reference to	11:38:52
2	McCloskey.	11:38:53
3	A. Yes.	11:38:54
4	Q. You're telling me that you're not	11:38:54
5	characterizing McCloskey as prior art in this	11:38:57
6	sentence?	11:38:59
7	A. What I'm telling you is that this	11:39:01
8	sentence says what it says. That's all I can	11:39:04
9	say about it.	11:39:09
10	Q. Is McCloskey one of the prior art	11:39:10
11	references associated with random barcodes?	11:39:12
12	A. I don't know. This was a question	11:39:19
13	to our patent attorneys about something that	11:39:21
14	we had seen, but I don't read this as a	11:39:25
15	definitive statement of us saying that	11:39:29
16	McCloskey, etc., etc. I see this as a	11:39:35
17	question to our attorneys.	11:39:39
18	Q. Did you review this McCloskey	11:39:44
19	reference when you were preparing your	11:39:45
20	application?	11:39:47
21	A. I don't recall. Preparing the	11:39:50
22	application, someone knew about this	11:39:55

1	reference. It might have been me. It might	11:39:58
2	have been Uri. I don't know. So I don't know	11:40:00
3	if I reviewed it or if it was something that	11:40:03
4	Uri had seen and reviewed it.	11:40:06
5	Q. Okay.	11:40:09
6	A. I don't recall.	11:40:09
7	Q. You had a concern that this	11:40:11
8	McCloskey reference may anticipate your	11:40:13
9	application; isn't that right?	11:40:15
10	A. I wouldn't characterize it that	11:40:22
11	way. Either Uri or I had a question about	11:40:23
12	whether this McCloskey reference was related.	11:40:28
13	The word "anticipate" there I now	11:40:34
14	know has a very specific legal meaning, but I	11:40:38
15	certainly in 2009 didn't know anything about	11:40:40
16	that. So whether these words were chosen by	11:40:44
17	me or by Uri, I don't know, but I can tell you	11:40:49
18	that if they were chosen by me, they were not	11:40:52
19	chosen with a mind towards what "anticipation"	11:40:56
20	means in the world of patent law.	11:40:59
21	Q. What did you think "anticipate"	11:41:02
22	here means?	11:41:05

1	A.	As I said, I don't recall. I don't	11:41:06
2		know if I wrote this or if he did, and I can't	11:41:09
3		go back in time. I don't remember if I wrote	11:41:15
4		it, what exactly I was meaning to say there.	11:41:17
5	Q.	So reading this sentence: But I'm	11:41:24
6		not sure if it anticipates the applications	11:41:25
7		were interested in, you're unable to tell me	11:41:26
8		what that means?	11:41:31
9	A.	I'm unable to tell you what that	11:41:32
10		means, but I am able to tell you that if that	11:41:34
11		came from me, I did not intend for it to mean	11:41:36
12		what "anticipation" means in the world of	11:41:38
13		patent law.	11:41:40
14	Q.	Then what did you intend for it to	11:41:41
15		mean?	11:41:42
16	A.	I don't know. I think it was	11:41:47
17		probably, Is it related? How related is it,	11:41:49
18		etc.?	11:41:56
19	Q.	Going back to Page 1, you had a	11:41:58
20		question: How much overlap do you see in the	11:42:00
21		bias detecting barcodes application with	11:42:04
22		McCloskey; right?	11:42:09

1	A.	Yes, correct.	11:42:14
2	Q.	So you certainly had enough of a	11:42:17
3		concern about McCloskey to flag this as an	11:42:18
4		issue; right?	11:42:22
5	A.	I wouldn't characterize it that	11:42:24
6		way.	11:42:25
7	Q.	How would you characterize it?	11:42:27
8	A.	One of us was aware of this	11:42:29
9		reference and we were asking prosecution	11:42:31
10		counsel to take a look at it to let us know	11:42:36
11		what they thought. We didn't use the word	11:42:41
12		"concern." I don't see the word "concern"	11:42:43
13		here, and a question is not the same thing as	11:42:45
14		a concern.	11:42:49
15	Q.	Right, you used the words "overlap"	11:42:51
16		and "anticipate"; right?	11:42:53
17	A.	Yes, and as we discussed before, I	11:42:59
18		can tell you that at the time, I did not	11:43:02
19		understand the legal meaning of the word	11:43:05
20		"anticipate."	11:43:06
21	Q.	But you had reviewed that McCloskey	11:43:09
22		reference; right?	11:43:11

1	A. I may have reviewed it at the time.	11:43:17
2	Again, I don't recall if I was aware of this	11:43:19
3	reference or if Uri was.	11:43:22
4	ATTORNEY FUKUDA: Let's mark as	11:43:39
5	Exhibit 1054 a copy of McCloskey Publication,	11:43:40
6	U.S. 2007/00 -- oh, I'm sorry. Let's not do	11:43:47
7	that. Strike that. It's already marked.	11:43:52
8	- - -	11:43:56
9	(Whereupon, document previously	11:43:56
10	marked Exhibit 1012, is received and marked as	11:43:56
11	Exhibit 1012 for Identification.)	11:43:56
12	- - -	11:43:56
13	BY ATTORNEY FUKUDA:	11:43:56
14	Q. I'm going to hand you Exhibit 1012.	11:43:56
15	ATTORNEY FUKUDA: It's a copy of the	11:44:02
16	McCloskey reference we were talking about.	11:44:03
17	Q. So, Dr. Porreca, have you reviewed	11:44:26
18	this document before?	11:44:28
19	A. At the time we were drafting this,	11:44:34
20	as I said, I may have been aware of this and	11:44:35
21	seen it or I may not have. It might come from	11:44:38
22	Uri. I looked at this briefly recently, but	11:44:41

1	that's the extent of it.	11:44:45
2	Q. Do you know the content described	11:44:52
3	in the McCloskey reference?	11:44:55
4	A. No. Not in any level of detail,	11:44:58
5	no.	11:45:01
6	Q. Okay. You can just put that aside	11:45:03
7	for now.	11:45:05
8	A. Okay.	11:45:06
9	Q. Okay.	11:45:20
10	ATTORNEY FUKUDA: Now, let's mark as	11:45:21
11	Exhibit 1054 a copy of ML IPR 375 through 383.	11:45:22
12	ATTORNEY MATTY: Thank you.	11:45:34
13	- - -	11:45:34
14	(Whereupon, document ML IPR 375	11:45:34
15	through 383, is received and marked as Exhibit	11:45:34
16	1054 for Identification.)	11:45:34
17	- - -	11:45:34
18	CERTIFIED STENOGRAPHER: Exhibit	11:45:41
19	Number 1054.	11:45:41
20	A. Okay. There is a lot here, but --	11:46:25
21	BY ATTORNEY FUKUDA:	11:46:27
22	Q. Okay. So, Dr. Porreca, is this a	11:46:27

1 chain of emails between you and Patrick Waller
2 at Wolf Greenfield?

11:46:32

11:46:38

3 A. It also includes Dan Young, and
4 just from scanning this quickly, I'm not sure
5 if I sent all of these. I mean, there is Dan
6 Young. There is Patrick Waller. There is, it
7 looks like, Eric Boutin on some of these. So
8 it's a chain of emails that I appear to have
9 been included on, at least some of, if not all
10 of. I mean, it will take me a while to look
11 at the whole thing.

11:46:51

11:46:58

11:47:00

11:47:02

11:47:05

11:47:08

11:47:09

11:47:12

11:47:15

12 Q. Okay. Well, let's just look at the
13 first email at the top of Page 1.

11:47:16

11:47:18

14 A. Okay.

11:47:20

15 Q. Is that an email that Patrick
16 Waller sent to you and to some others on
17 April 23, 2009?

11:47:20

11:47:22

11:47:28

18 A. Yes.

11:47:32

19 Q. Okay. And you remember seeing this
20 email from Mr. Waller?

11:47:32

11:47:36

21 A. I mean, I've seen this email. I
22 don't know that I specifically remember --

11:47:56

11:47:57

1	you're asking do you remember in 2009 seeing	11:48:03
2	this email?	11:48:04
3	Q. Right.	11:48:06
4	A. Or do I remember -- yeah. I don't	11:48:06
5	know that I can say that definitively, but I'm	11:48:10
6	sure I saw it because it was addressed to me	11:48:15
7	and this is something we were focused on at	11:48:19
8	the time.	11:48:21
9	Q. When you were preparing your	11:48:21
10	declaration, did you review this email?	11:48:22
11	A. I don't recall whether I reviewed	11:48:33
12	this email specifically.	11:48:34
13	Q. In this email on April 23, 2009,	11:48:38
14	Mr. Waller says to you: Hi, Greg. I think	11:48:42
15	that you have sent us all of the important	11:48:46
16	information that we need. Dan and I will send	11:48:48
17	you updated drafts today for your comment and	11:48:52
18	feedback. They will include a few questions	11:48:54
19	on issues that we want to clarify, but they	11:48:57
20	should not need significant technical input at	11:49:00
21	this stage.	11:49:05
22	Do you see that?	11:49:06

1	A.	I do.	11:49:06
2	Q.	Okay. So as of April 23, 2009,	11:49:07
3		Mr. Waller is telling you that you have sent	11:49:12
4		them all of the important information that	11:49:14
5		they need, including for your application at	11:49:16
6		issue here, the '730 application; right?	11:49:24
7	A.	I'm assuming this thread includes	11:49:34
8		discussion of the application at issue here.	11:49:36
9		If we put that aside, he says: I think that	11:49:39
10		you've sent me all the important information	11:49:43
11		that we need, and then he goes on to say that	11:49:46
12		either Dan or he will send updated drafts for	11:49:48
13		our comment and feedback and it will include	11:49:52
14		questions on issues that we want to clarify.	11:49:56
15	Q.	But they --	11:50:03
16	A.	So it's a little bit more nuanced.	11:50:04
17	Q.	I believe I read the whole thing	11:50:06
18		earlier.	11:50:07
19	A.	Yeah, it's a little more nuanced	11:50:07
20		than Patrick thinking he has everything he	11:50:09
21		needs.	11:50:14
22	Q.	Well, first, if you look at the	11:50:17

1	email right below that, it's an email that you	11:50:18
2	sent to Mr. Waller and others on April 22,	11:50:21
3	2009; correct?	11:50:25
4	A. Yes.	11:50:29
5	Q. Okay. And in your email you said:	11:50:29
6	Just checking in on the status of our three	11:50:33
7	applications.	11:50:35
8	Do you see that?	11:50:35
9	A. Yes, I do.	11:50:36
10	Q. And those three applications	11:50:37
11	includes the '730 application; right?	11:50:39
12	A. Yes.	11:50:42
13	Q. Okay. So when Mr. Waller responds	11:50:42
14	on April 23, 2009, he says: I think that	11:50:46
15	you've sent us all the important information	11:50:49
16	that we need, and he also adds that: They	11:50:51
17	should not need significant technical input at	11:50:55
18	this stage.	11:50:58
19	He told you that; right?	11:50:59
20	A. Yes, he said at this stage he	11:51:08
21	thinks he has all the information. They will	11:51:09
22	include questions on issues that they need	11:51:12

1	clarification on, and they should not need	11:51:15
2	input at this stage, yes.	11:51:20
3	Q. Okay.	11:51:26
4	ATTORNEY FUKUDA: Let's mark as	11:51:31
5	Exhibit 1055 a copy of ML IPR 415 through 417.	11:51:32
6	ATTORNEY MATTY: Thank you.	11:51:44
7	- - -	11:51:44
8	(Whereupon, document ML IPR 415	11:51:44
9	through 417, is received and marked as Exhibit	11:51:44
10	1055 for Identification.)	11:51:44
11	- - -	11:51:44
12	CERTIFIED STENOGRAPHER: Exhibit	11:51:50
13	Number 1055.	11:51:50
14	ATTORNEY FUKUDA: Okay.	11:51:51
15	BY ATTORNEY FUKUDA:	11:51:53
16	Q. Dr. Porreca, this is a couple of	11:52:26
17	emails between you and Dan Young, who is an	11:52:30
18	attorney at Wolf Greenfield; is that right?	11:52:37
19	A. Dan Young is a patent agent of Wolf	11:52:44
20	Greenfield at the time.	11:52:45
21	Q. Okay. And at the top of that	11:52:46
22	exhibit is an email from you to Dan Young on	11:52:59

1	April 27, 2009; right?	11:53:03
2	A. April 24, 2009. Wait, are we	11:53:09
3	talking about this?	11:53:14
4	Q. Oh, give me one second here.	11:53:15
5	A. Okay.	11:53:19
6	Q. Okay. Yes. You are correct. Yes,	11:53:34
7	at the top is an email from Dan Young to you	11:53:36
8	on April 24, 2009?	11:53:39
9	A. Correct.	11:53:42
10	Q. Okay. And Dan says: Please see	11:53:43
11	the attached claims for -- how do you say it,	11:53:45
12	Uri?	11:53:50
13	A. Uri.	11:53:51
14	Q. Uri, for Uri's application, and	11:53:51
15	that's the same as the '730 application we've	11:53:54
16	been talking about; right?	11:53:56
17	A. Yes, correct.	11:53:58
18	Q. Okay. And attached to that email	11:53:58
19	is a set of seven claims?	11:54:02
20	A. Yes.	11:54:10
21	Q. Okay. And if you'd turn to	11:54:10
22	Page 416, you'll see that the first claim in	11:54:16

1	element small Roman Numeral I refers to a	11:54:20
2	barcode sequence; right?	11:54:25
3	A. I see that.	11:54:29
4	Q. Okay. And in small Roman Numeral	11:54:30
5	III, at the end of that element it refers to	11:54:33
6	detecting bias in the amplification of the	11:54:37
7	nucleic acid having the specific barcode	11:54:40
8	sequence.	11:54:45
9	See that recitation?	11:54:46
10	A. I do.	11:54:47
11	ATTORNEY FUKUDA: Okay. And in	11:54:49
12	response to that, let me mark as Exhibit 1055,	11:54:53
13	a copy of ML IPR 422 to 423.	11:54:56
14	ATTORNEY MATTY: I think you're on	11:55:02
15	1056.	11:55:04
16	ATTORNEY FUKUDA: Oh, 1056. Thank you.	11:55:05
17	Let's mark as Exhibit 1056 that	11:55:08
18	document.	11:55:09
19	- - -	11:55:10
20	(Whereupon, ML IPR 422 to 423, is	11:55:10
21	received and marked as Exhibit 1056 for	11:55:10
22	Identification.)	11:55:10

1	- - -	11:55:10
2	ATTORNEY MATTY: Thank you.	11:55:20
3	CERTIFIED STENOGRAPHER: Exhibit 1056.	11:55:21
4	A. Okay.	11:55:35
5	BY ATTORNEY FUKUDA:	11:55:35
6	Q. Okay. So Exhibit 1056 is your	11:55:36
7	response to Dan's email earlier; right?	11:55:43
8	A. I'm comparing these two. This	11:55:56
9	looks like the next -- well, this looks like	11:55:58
10	another email in the chain.	11:56:00
11	Q. Right.	11:56:03
12	So Dan sent you a set of claims	11:56:03
13	that we looked at and then you responded to	11:56:05
14	that email; right?	11:56:07
15	A. I think that's what this is	11:56:17
16	indicating, yes. I don't -- I don't see the	11:56:18
17	claims on this second exhibit, but I don't	11:56:19
18	know whether there were other emails in	11:56:23
19	between, but none are shown here.	11:56:26
20	Q. Okay. And in response to that	11:56:30
21	email on April 27, 2009, you said: Hi, Dan.	11:56:32
22	This looks good to me. Uri had one comment,	11:56:38

1	and this is part of an email you sent back to	11:56:41
2	Dan; right?	11:56:43
3	A. This is an email that I sent to Dan	11:56:47
4	after he sent the claims.	11:56:49
5	Q. Okay. And the one comment from Uri	11:56:49
6	is: Do you think it makes sense to add	11:56:53
7	additional claims like, quote, the method of	11:56:55
8	claim X where the barcodes are random	11:56:58
9	sequenced polynucleotides, end quote, or	11:57:01
10	something to that effect?	11:57:04
11	You asked Dan Young that question;	11:57:07
12	right?	11:57:09
13	A. That's in the email here, yes.	11:57:10
14	- - -	11:57:21
15	(Whereupon, document previously	11:57:21
16	marked Exhibit 1046, is received and marked as	11:57:21
17	Exhibit 1046 for Identification.)	11:57:21
18	- - -	11:57:21
19	BY ATTORNEY FUKUDA:	11:57:21
20	Q. I'm going to give you what has	11:57:33
21	previously been marked Exhibit 1046.	11:57:36
22	A. Okay.	11:57:59

1	Q.	Okay. And Exhibit 1046 captures	11:58:00
2		Dan Young's response to your email, which Dan	11:58:05
3		sent on April 28, 2009; right?	11:58:08
4	A.	Sorry, could you repeat that	11:58:11
5		question?	11:58:13
6	Q.	Yes.	11:58:13
7		Exhibit 1046 captures Dan Young's	11:58:14
8		response to your email below, which we	11:58:17
9		previously discussed, and Dan Young sent his	11:58:22
10		response on April 8, 2009; right?	11:58:25
11	A.	I think so. Again, I would say I	11:58:34
12		don't know whether there was anything	11:58:36
13		intervening here, but this is a response on	11:58:37
14		this thread.	11:58:41
15	Q.	Okay. So Dan Young sent you a	11:58:44
16		first draft of claims that reference barcode	11:59:02
17		sequence. You write back and you say: Uri	11:59:05
18		wanted to know if they could add a claim where	11:59:09
19		the barcodes are random sequenced	11:59:13
20		polynucleotides, and then Dan Young responds	11:59:16
21		and says: Please see attached revised claim	11:59:19
22		set for Uri's application.	11:59:22

1	So if you look in that exhibit,	11:59:24
2	you'll see there are some claims attached on	11:59:26
3	1046 starting at Page 427?	11:59:32
4	A. Page 429 you mean?	11:59:41
5	Q. Oh, 429. You're right.	11:59:43
6	A. I do. I see that.	11:59:45
7	Q. But there is no reference to Uri's	11:59:48
8	random sequence polynucleotides barcodes,	11:59:53
9	right, in those claims?	11:59:55
10	A. I don't know. I'd have to review	12:00:00
11	them carefully. I don't know.	12:00:01
12	Q. Sure. You can take a look at them.	12:00:02
13	There are only seven claims.	12:00:05
14	A. So your question is: Does the word	12:01:00
15	"barcode" appear in the claims? The answer is	12:01:01
16	no.	12:01:03
17	Q. No. The question is whether	12:01:04
18	barcodes with random sequence polynucleotides	12:01:08
19	or random barcodes show up in these revised	12:01:11
20	claims.	12:01:15
21	A. I don't see those words in these	12:01:17
22	claims either.	12:01:19

1	Q.	Okay.	12:01:19
2	A.	Unless I'm missing them.	12:01:21
3	Q.	So after you asked Uri's question	12:01:23
4		about whether random barcodes can be added to	12:01:27
5		the claims, Mr. Young responded with revised	12:01:29
6		claims that didn't have random barcodes in	12:01:35
7		there; right?	12:01:38
8	ATTORNEY MATTY:	Objection to form.	12:01:43
9	A.	You know, again, I don't know -- I	12:02:14
10		mean, this is an email chain. I don't know if	12:02:17
11		it's complete, and I also -- I don't know	12:02:18
12		what's revised between this and the previous	12:02:28
13		one. I mean, and I don't really think I can	12:02:30
14		do a good job looking at that on the spot and	12:02:33
15		trying to figure it out.	12:02:37
16	Q.	But the revised claims attached to	12:02:38
17		Mr. Young's April 28, 2009 email does not	12:02:41
18		include claims where the barcodes are random	12:02:45
19		sequenced polynucleotides; right.	12:02:49
20	A.	I don't see those words in this	12:02:52
21		document, that's this 429 or 430, but again, I	12:02:55
22		don't know in Dan's email exactly what he's	12:03:01

1	talking about.	12:03:04
2	Q. So --	12:03:09
3	A. Sorry. I don't know if he is	12:03:10
4	intending to suggest that these claims have	12:03:13
5	included -- have addressed that specific	12:03:17
6	question. I just -- I don't know.	12:03:20
7	Q. Okay. So in Exhibit 1046,	12:03:24
8	Mr. Young's email responds to you at the top,	12:03:26
9	says: Greg, thanks for your feedback; right?	12:03:32
10	And that's in response to your email below	12:03:37
11	where you had included just one comment from	12:03:41
12	Uri about the barcodes being random sequenced	12:03:43
13	polynucleotides; right?	12:03:47
14	A. I don't know. I mean, it says:	12:03:49
15	Thanks for your feedback. It's occurring	12:03:51
16	higher up in the chain. I don't -- I don't	12:03:55
17	know sitting here today whether this is --	12:03:57
18	whether he's making all the links that you're	12:04:01
19	suggesting. He may be, but he may not be. I	12:04:04
20	don't know.	12:04:06
21	Q. Okay. So he attached some revised	12:04:06
22	claims, and Mr. Young also says to you: We	12:04:10

1	would like to discuss these claims with you	12:04:13
2	tomorrow in the context of U.S. Patent	12:04:16
3	Application 2007/0020640, which was noted in	12:04:18
4	the disclosure materials that you sent us;	12:04:24
5	right?	12:04:27
6	A. Yes, that's what it says.	12:04:28
7	Q. And that is the McCloskey reference	12:04:30
8	we looked at earlier; right?	12:04:31
9	A. I think so. Yes, that's the	12:04:33
10	McCloskey patent application.	12:04:40
11	Q. Okay. Now, in the claims that are	12:04:41
12	attached, if you look at small Roman Numeral I	12:04:52
13	in Claim 1, you'll see that they've revised	12:04:58
14	their initial set of claims somewhat and they	12:05:03
15	changed barcode sequence to source sequence.	12:05:07
16	Do you see that?	12:05:12
17	A. I mean, I don't know that that's	12:05:13
18	what they changed. Where was the original	12:05:16
19	version?	12:05:19
20	Q. Sure. If you take a look at -- I	12:05:20
21	think it's Exhibit 1055 in front of you.	12:05:25
22	A. Okay.	12:05:28

1	Q.	If you compare the Claim 1 across	12:05:40
2		both of these, you'll see that originally	12:05:42
3		Claim 1, small numeral one, reference a	12:05:46
4		barcode sequence, and then it was revised on	12:05:49
5		April 28 to be a source sequence?	12:05:53
6	A.	I mean, there is a lot of	12:06:00
7		differences with the language in these. Just	12:06:01
8		Romanette i, there is a lot of differences in	12:06:04
9		the language here. So that's --	12:06:06
10	Q.	That's one of the changes; right?	12:06:08
11	A.	Well, I don't know that there is a	12:06:09
12		direct mapping there. I don't know. I mean,	12:06:11
13		there is a lot of differences in the language.	12:06:13
14		If what you're suggesting is that there is an	12:06:16
15		equivalent between barcode sequencing and	12:06:20
16		something else, I don't know.	12:06:23
17	Q.	Did you review the --	12:06:25
18	A.	I wouldn't make that	12:06:26
19		characterization.	12:06:27
20	Q.	Did you review these claims when	12:06:28
21		they were sent to you by Wolf Greenfield?	12:06:29
22	A.	I probably did at the time.	12:06:38

1	Q.	Okay.	12:06:41
2	A.	Keep in mind these were sent to us	12:06:41
3		in the context of an upcoming discussion where	12:06:42
4		they were going to be, you know, providing	12:06:45
5		color to exactly whatever we needed to focus	12:06:49
6		on in these claims, and I don't remember what	12:06:54
7		exactly that was.	12:06:56
8	Q.	Okay. What is a source sequence?	12:06:57
9	A.	I don't know.	12:07:01
10	Q.	Did you ask Mr. Young why he used	12:07:04
11		"source sequence"?	12:07:05
12	A.	I don't recall what I asked	12:07:08
13		Mr. Young about these claims.	12:07:08
14	Q.	Another one of the changes -- oh,	12:07:18
15		before you put that away --	12:07:20
16	A.	Okay.	12:07:20
17	Q.	-- another one of the changes made	12:07:21
18		to the claims was the revised claims added	12:07:23
19		molecular inversion probes.	12:07:30
20		Do you see that?	12:07:32
21	A.	I don't know that I would	12:07:40
22		characterize it as adding. I mean, those	12:07:40

1	words are in the revised claims, but they're	12:07:42
2	not in the earlier version of the claims.	12:07:46
3	Q. The earlier version of the claims	12:07:47
4	said "amplifying a plurality of nucleic	12:07:50
5	acids," and the revised claims says	12:07:53
6	"amplifying a plurality of molecular inversion	12:07:56
7	probes."	12:08:00
8	Do you see that change?	12:08:01
9	A. I see that those things are	12:08:02
10	different, yes.	12:08:04
11	Q. Okay. What are molecular inversion	12:08:05
12	probes?	12:08:07
13	A. I would have to review in the	12:08:09
14	context of the entire application to be able	12:08:10
15	to give you a definition for how they're being	12:08:13
16	used here. I'm not prepared to do that.	12:08:17
17	Q. Does molecular inversion probes	12:08:20
18	mean anything to you in your work?	12:08:22
19	A. I mean, they mean something to me	12:08:25
20	today, but I don't know what they meant to me	12:08:27
21	at the time that this was drafted.	12:08:29
22	Q. At the time you saw the words	12:08:31

1	"molecular inversion probes" and you didn't	12:08:31
2	know what they meant?	12:08:34
3	A. No, that's not what I said.	12:08:35
4	Q. Oh.	12:08:36
5	A. I don't know what I was -- what the	12:08:37
6	context was of the term "molecular inversion	12:08:38
7	probes" in 2009, either what I would have had	12:08:41
8	in my head or what would have been in the	12:08:45
9	context of this application at the time.	12:08:47
10	Q. What does molecular inversion	12:08:52
11	probes mean to you today?	12:08:53
12	A. Today, a molecular inversion probe	12:08:56
13	is a -- it's something that is used in a	12:08:58
14	process to prepare DNA for sequencing.	12:09:03
15	Q. And how is it different from	12:09:06
16	nucleic acids?	12:09:08
17	A. I -- I don't know that I can give	12:09:13
18	you that characterization. I mean, the rest	12:09:14
19	of this -- the rest of this language is	12:09:18
20	different too. You know, I mean, it goes on	12:09:21
21	to say --	12:09:23
22	Q. Well, before you --	12:09:24

1	- - -	12:09:31
2	(Unintelligible, simultaneous	12:09:31
3	testimony interrupted by the certified	12:09:31
4	stenographer.)	12:09:31
5	- - -	12:09:31
6	CERTIFIED STENOGRAPHER: One at a time,	10:28:47
7	please.	10:28:47
8	THE WITNESS: Sure.	12:09:31
9	A. I was saying the rest of this is	12:09:32
10	different as well. You know, on the one hand,	12:09:34
11	it says "each comprising." The other says	12:09:37
12	"each nucleic acid in a plurality having" --	12:09:39
13	it's just different all the way across, and I	12:09:43
14	don't -- I can't get into an analysis of it.	12:09:45
15	I'm not prepared to do that.	12:09:48
16	Q. Other than telling me that a	12:09:50
17	molecular inversion probe is something that's	12:09:52
18	used in a process to prepare DNA for	12:09:54
19	sequencing, can you get any more specific than	12:09:57
20	that?	12:09:59
21	A. Not in the context of this	12:10:03
22	discussion, no.	12:10:04

1	Q.	In the context of any discussion?	12:10:05
2	A.	I mean, I could define molecular	12:10:13
3		inversion probes in many different ways. What	12:10:15
4		I just gave is probably the simplest one	12:10:17
5		that's coming to mind right now, but I	12:10:20
6		wouldn't want to get more specific.	12:10:21
7	Q.	Why don't you want to get more	12:10:24
8		specific?	12:10:31
9	A.	Because I don't have enough context	12:10:32
10		to do that.	12:10:33
11	Q.	If somebody comes to you and -- in	12:10:35
12		the context of your work and talks about	12:10:37
13		molecular inversion probes, what do you	12:10:40
14		understand those to refer to?	12:10:43
15	A.	I understand those to refer to	12:10:49
16		something that is used as part of our process	12:10:51
17		for preparing DNA for sequencing.	12:10:55
18	Q.	And how are molecular inversion	12:10:57
19		probes used in the process?	12:10:58
20	A.	They are part of the process.	12:11:01
21	Q.	Right. How are they used in the	12:11:03
22		process?	12:11:06

1	A.	They're -- this is why I can't	12:11:10
2		characterize them, because I could -- I could	12:11:14
3		talk about it from 10 different angles, and	12:11:16
4		again, I'm cognizant of the fact that we're	12:11:21
5		talking about 2009 here, and I don't -- I	12:11:23
6		don't remember what I would have been thinking	12:11:29
7		at the time to describe them. The technology	12:11:31
8		that we sell today in 2025 is not necessarily	12:11:35
9		the same as what we had in our minds when we	12:11:41
10		were drafting this back in '09.	12:11:45
11	Q.	Is the technology -- is the product	12:11:48
12		that Molecular Loop is currently	12:11:51
13		commercializing, is it covered by the '730	12:11:54
14		patent?	12:11:56
15	ATTORNEY MATTY:	Objection to scope.	12:11:58
16	A.	I don't know that I can give	12:11:59
17		you -- well, when you say "is it covered by	12:12:03
18		the patent," what do you mean?	12:12:06
19	Q.	Does it practice the inventions of	12:12:08
20		the '730 patent?	12:12:09
21	ATTORNEY MATTY:	Objection to scope.	12:12:10
22	A.	I haven't done that analysis.	12:12:11

1	Q. You don't know?	12:12:13
2	A. I haven't done --	12:12:13
3	- - -	12:12:13
4	(Unintelligible, simultaneous	12:12:13
5	testimony interrupted by the certified	12:12:13
6	stenographer.)	12:12:13
7	- - -	12:12:13
8	CERTIFIED STENOGRAPHER: I need one at	10:28:47
9	a time, please.	10:28:47
10	ATTORNEY MATTY: I just said objection	12:12:17
11	to scope.	12:12:18
12	A. I haven't done that analysis.	12:12:20
13	BY ATTORNEY FUKUDA:	12:12:23
14	Q. Has anyone done that analysis in	12:12:26
15	the company?	12:12:27
16	A. I don't know.	12:12:29
17	Q. Does Molecular Loop's product use	12:12:32
18	molecular inversion probes?	12:12:37
19	ATTORNEY MATTY: Objection to scope.	12:12:39
20	A. Molecular Loop's current products,	12:12:42
21	they're involved in the process with some of	12:12:51
22	the products.	12:12:53

1	Q. Which products?	12:12:58
2	A. I couldn't give you a list off the	12:13:01
3	top of my head. I didn't think about that in	12:13:02
4	preparation for this today.	12:13:05
5	Q. So getting back to Exhibit 1046,	12:13:19
6	Mr. Young made changes to the claims and then	12:13:26
7	asked to discuss the claims with you in the	12:13:28
8	context of McCloskey.	12:13:33
9	Did you end up having that	12:13:35
10	discussion?	12:13:36
11	A. Mr. Young sent us a revised claim	12:13:45
12	set, and right, wanted to discuss these	12:13:48
13	revised claims in the context of that patent	12:13:51
14	application.	12:13:53
15	Did we have that discussion? I	12:13:55
16	don't recall. There may be emails that would	12:14:03
17	help us clarify that one way or the other.	12:14:05
18	Q. Okay. Let's take a look at that.	12:14:08
19	ATTORNEY FUKUDA: What's the next	12:14:35
20	exhibit?	12:14:36
21	CERTIFIED STENOGRAPHER: 1057.	12:14:37
22	ATTORNEY FUKUDA: Okay. Let's mark at	12:14:38

Transcript of Gregory J. Porreca, Ph.D.
Conducted on September 30, 2025

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1	Exhibit 1057, copy of ML IPR 479 to 480.	12:14:39
2	- - -	12:14:47
3	(Whereupon, document ML IPR 479 to	12:14:47
4	480, is received and marked as Exhibit 1057	12:14:47
5	for Identification.)	12:14:47
6	- - -	12:14:47
7	CERTIFIED STENOGRAPHER: Exhibit 1057.	12:14:54
8	A. Okay.	12:15:11
9	BY ATTORNEY FUKUDA:	12:15:12
10	Q. And in this exhibit, at the top is	12:15:12
11	an email that Mr. Young sent to you and	12:15:17
12	Mr. Waller, copying Mr. Boutin, on April 30,	12:15:20
13	2009; right?	12:15:24
14	A. This is an email April 30, 2009:	12:15:28
15	Revised claim based on yesterday's discussion.	12:15:29
16	Q. You received this email from	12:15:36
17	Mr. Young?	12:15:38
18	A. Yes.	12:15:39
19	Q. And as you had read, it talked	12:15:41
20	about: A revised claim based on our	12:15:46
21	discussion yesterday.	12:15:49
22	That would have been a discussion	12:15:50

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1	on April 29, 2009?	12:15:51
2	A. Yes.	12:15:53
3	Q. Okay. So you did have that	12:15:54
4	discussion?	12:15:56
5	A. We had a discussion on April 29.	12:16:02
6	Q. And --	12:16:08
7	A. Sorry, when you say "that	12:16:08
8	discussion," we had a discussion.	12:16:12
9	Q. Okay. And --	12:16:13
10	A. I don't know if it was the same	12:16:18
11	discussion. There was --	12:16:19
12	Q. In Mr. --	12:16:21
13	A. Sorry. There was a lot going on,	12:16:22
14	especially around this period with these	12:16:23
15	multiple applications that were in flight.	12:16:25
16	Q. So in Mr. Young's April 28 email,	12:16:30
17	he asked to discuss claims with you tomorrow.	12:16:34
18	You had a discussion on April 29, and then on	12:16:39
19	April 30, Mr. Young sent you revised claims	12:16:42
20	based on the discussion on April 29; correct?	12:16:48
21	A. I just don't know that all of	12:16:55
22	those -- I haven't seen emails that link all	12:16:57

1	of it together. Dan did ask for a call. This	12:16:59
2	is referencing the call. I don't know if it's	12:17:07
3	the same one. So, therefore, I don't know	12:17:10
4	what --	12:17:12
5	Q. Okay.	12:17:13
6	A. -- whether we discussed the topic	12:17:13
7	that Dan wanted us to discuss. We may have.	12:17:16
8	I don't see -- that's why I'm having trouble	12:17:19
9	with this. I don't see the link between all	12:17:23
10	of these things. They each individually	12:17:25
11	happened, but this is a claim that came back	12:17:27
12	based on discussion we had the day before.	12:17:32
13	That's what it says.	12:17:34
14	Q. Okay.	12:17:37
15	A. And that's what it says.	12:17:37
16	Q. So Mr. Young on April 28 asked to	12:17:40
17	have a discussion the next day about	12:17:43
18	McCloskey. You had a discussion the next day,	12:17:46
19	and then on April 30, he sent you revised	12:17:49
20	claims; is that accurate?	12:17:52
21	A. That is accurate, but again, I	12:17:54
22	don't know -- I mean, maybe we had multiple	12:17:57

1	discussions on April 29. I don't know.	12:17:59
2	Q. Okay. During your April 29	12:18:02
3	discussion, did they bring up McCloskey?	12:18:06
4	A. I don't remember.	12:18:13
5	Q. Do you remember ever discussing the	12:18:18
6	McCloskey reference with Wolf Greenfield?	12:18:19
7	A. Based on what's in these emails, I	12:18:24
8	would assume we had a discussion about the	12:18:27
9	McCloskey reference, but I don't remember the	12:18:29
10	discussion.	12:18:31
11	Q. In turning back to the exhibit in	12:18:36
12	front of you --	12:18:42
13	A. Sorry, one more thing. I mean,	12:18:43
14	there may be additional emails that help to	12:18:44
15	shed light on that. I don't know.	12:18:46
16	ATTORNEY FUKUDA: What's our exhibit	12:18:58
17	number right now?	12:18:59
18	CERTIFIED STENOGRAPHER: 1057.	12:19:00
19	Q. So looking at Exhibit 1057 in front	12:19:01
20	of you, Mr. Young had revised Claim 1 once	12:19:03
21	again after a discussion; correct?	12:19:09
22	A. I'm assuming this is a revised	12:19:14

1	claim. I haven't compared it myself, but I'm	12:19:15
2	assuming it's different than a previous	12:19:17
3	version.	12:19:21
4	Q. And in that revised claim on	12:19:21
5	April 30, there is still no reference to	12:19:24
6	barcode and no reference to random barcode;	12:19:27
7	right?	12:19:30
8	A. Those words don't appear in this	12:19:44
9	claim that's shown here.	12:19:46
10	Q. But the claim does include	12:19:54
11	molecular inversion probe capture products;	12:19:56
12	right?	12:20:00
13	A. Yeah, those words appear in this	12:20:03
14	claim.	12:20:06
15	Q. All right.	12:20:14
16	ATTORNEY FUKUDA: Let's mark as	12:20:15
17	Exhibit 1058 a copy of ML IPR 485.	12:20:16
18	- - -	12:20:21
19	(Whereupon, document ML IPR 485, is	12:20:21
20	received and marked as Exhibit 1058 for	12:20:21
21	Identification.)	12:20:21
22	- - -	12:20:22

1	ATTORNEY MATTY: Thank you.	12:20:29
2	CERTIFIED STENOGRAPHER: Exhibit 1058.	12:20:30
3	A. Okay.	12:20:41
4	BY ATTORNEY FUKUDA:	12:20:41
5	Q. So is this an email that you sent	12:20:41
6	to Patrick Waller on April 30, 2009?	12:20:46
7	A. Yes, it appears to be.	12:20:50
8	Q. Okay. And in this email you say:	12:20:52
9	Our intention is to eventually file for	12:20:57
10	international rights, including China. When	12:21:02
11	we do the conversion to a WIPO application in	12:21:04
12	one year, will we be able to get any country	12:21:06
13	at that point or only certain ones?	12:21:09
14	Do you see those questions?	12:21:11
15	A. I do.	12:21:12
16	Q. Your intention to file for	12:21:18
17	international rights includes for the '730	12:21:25
18	application; right?	12:21:28
19	A. I don't know. There were other	12:21:42
20	applications in flight. I think one of them	12:21:46
21	was being filed on that day or right around	12:21:49
22	then. So I don't know one way or the other	12:21:51

1	what our intent was on the '730 based on this	12:21:56
2	email.	12:22:00
3	Q. Why was it important to file for	12:22:02
4	international rights, including China?	12:22:05
5	A. Well, so I think there is two	12:22:13
6	different questions there. I don't know	12:22:15
7	exactly why -- well, I think in general, we	12:22:20
8	wanted our protection to be as broad as	12:22:26
9	possible. I don't think we had an	12:22:28
10	understanding at the time of exactly how it	12:22:35
11	worked and what the cost would be.	12:22:37
12	China in particular, I think the	12:22:45
13	company was in discussions with a potential	12:22:48
14	investor who was Chinese and saw applications	12:22:52
15	in the China market, and I think that might be	12:22:58
16	why we highlighted China there. I think this	12:23:03
17	was something that Xi was interested in seeing	12:23:06
18	us do. I think that's about all I can say	12:23:08
19	about the international topic in general.	12:23:14
20	ATTORNEY FUKUDA: Let's mark as	12:23:26
21	Exhibit 1059 a copy of ML IPR 486.	12:23:27
22	- - -	12:23:31

1	(Whereupon, ML IPR 486, is received	12:23:31
2	and marked as Exhibit 1059 for	12:23:31
3	Identification.)	12:23:31
4	- - -	12:23:32
5	ATTORNEY MATTY: Thank you.	12:23:35
6	CERTIFIED STENOGRAPHER: Exhibit 1059.	12:23:41
7	A. Sorry, one more thing I just want	12:23:53
8	to add to what I said before, but I don't know	12:23:54
9	which application I was talking about. You	12:23:56
10	know, we say it confirmed something related to	12:23:58
11	the provisional filing, right?	12:24:01
12	BY ATTORNEY FUKUDA:	12:24:02
13	Q. Uh-huh.	12:24:03
14	A. So I don't know if I was talking	12:24:03
15	about in general or a specific one or exactly	12:24:04
16	what. I just want to make sure that's clear.	12:24:08
17	Q. So in front of you, Exhibit 1059 is	12:24:17
18	an email from Mr. Waller to you dated	12:24:19
19	April 30, 2009; right?	12:24:23
20	A. Yes.	12:24:26
21	Q. And you received this email?	12:24:27
22	A. Yes, I did.	12:24:28

1	Q.	In that email he responds to the	12:24:29
2		previous email that we just discussed and	12:24:32
3		said: I will send you a more detailed outline	12:24:34
4		of the U.S. international patent filing	12:24:37
5		process later this afternoon.	12:24:39
6		Do you see that?	12:24:41
7	A.	I do see that.	12:24:42
8	Q.	Do you remember getting that from	12:24:43
9		Mr. Waller, the outline?	12:24:45
10	A.	I don't recall one way or the	12:24:53
11		other.	12:24:54
12	ATTORNEY FUKUDA:	How are you doing?	12:25:51
13		Do you need a break?	12:25:52
14	THE WITNESS:	I'm okay. Yeah.	12:25:54
15	ATTORNEY FUKUDA:	At some point we	12:25:56
16		should probably break for lunch.	12:25:57
17	ATTORNEY MATTY:	We do have lunch here	12:25:58
18		if you want to break now?	12:25:59
19	ATTORNEY FUKUDA:	Yeah, might as well.	12:26:00
20		Makes sense. Is there lunch here?	12:26:02
21	ATTORNEY MATTY:	Yeah. We can go off	12:26:05
22		the record.	12:26:06

1 THE VIDEOGRAPHER: We're going off the
2 record at 12:25 p.m.

12:26:07

12:26:07

3 - - -

4 (Whereupon, a luncheon recess is
5 taken at 12:25 p.m.)

6 * * * * *

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Transcript of Gregory J. Porreca, Ph.D.
Conducted on September 30, 2025

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1 A F T E R N O O N S E S S I O N

2 (1:01 p.m.)

3 THE VIDEOGRAPHER: Stand by, please.

01:01:26

4 We're back on the record at 1:01 p.m.

01:00:15

5 BY ATTORNEY FUKUDA:

01:01:38

6 Q. Welcome back.

01:01:38

7 ATTORNEY FUKUDA: Okay. Let's mark as
8 next exhibit?

01:02:03

01:02:04

9 CERTIFIED STENOGRAPHER: 1060.

01:02:08

10 ATTORNEY FUKUDA: 1060, a copy of ML
11 IPR 550 through 554.

01:02:08

01:02:10

12 - - -

01:02:13

13 (Whereupon, ML IPR 550 through 554,
14 is received and marked as Exhibit 1060 for
15 Identification.)

01:02:13

01:02:13

16 - - -

01:02:14

17 CERTIFIED STENOGRAPHER: Number 1060.

01:02:21

18 ATTORNEY MATTY: Thank you.

01:02:23

19 A. Okay.

01:02:32

20 BY ATTORNEY FUKUDA:

01:02:32

21 Q. Okay. So Exhibit 1060 at the top
22 is an email from you to Mr. Waller dated

01:02:32

01:02:36

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1	May 11, 2009; right?	01:02:42
2	A. Yes.	01:02:44
3	Q. And at that point in time, the '730	01:02:48
4	provisional application still hadn't been	01:02:51
5	filed yet; right?	01:02:53
6	A. That's correct.	01:02:57
7	Q. So in this email, you said to	01:03:01
8	Mr. Waller: If I recall, we shall expect	01:03:04
9	drafts on the two outstanding provisionals	01:03:07
10	soon, and Uri's probably doesn't need further	01:03:10
11	revision at this point.	01:03:14
12	By "Uri's," you're referring to the	01:03:17
13	'730 provisional application; right?	01:03:19
14	A. That's correct.	01:03:20
15	Q. And so follow the '730 application	01:03:24
16	on May 11, you said: It probably doesn't need	01:03:27
17	further revision; right?	01:03:30
18	A. Well, what I said was on May 11,	01:03:34
19	we're expecting drafts of the two.	01:03:35
20	Q. Uh-huh.	01:03:38
21	A. So Patrick was still drafting it at	01:03:38
22	the time, and I said it probably doesn't need	01:03:41

1	further revision, but I hadn't seen the draft	01:03:46
2	that he was still working on.	01:03:51
3	Q. Okay. What made you say that Uri's	01:03:53
4	probably doesn't need further revision at this	01:03:58
5	point?	01:04:00
6	A. I don't recall.	01:04:02
7	ATTORNEY FUKUDA: Let's mark as	01:04:36
8	Exhibit 1061 a copy of ML IPR 61 through 99.	01:04:37
9	- - -	01:04:49
10	(Whereupon, ML IPR 61 through 99,	01:04:49
11	is received and marked as Exhibit 1061 for	01:04:49
12	Identification.)	01:04:49
13	- - -	01:04:50
14	CERTIFIED STENOGRAPHER: Number 1061.	01:04:59
15	A. Okay.	01:05:12
16	BY ATTORNEY FUKUDA:	01:05:13
17	Q. Okay. So this is a May 14, 2009	01:05:13
18	email that Mr. Young sent to you?	01:05:20
19	A. Yes.	01:05:23
20	Q. Okay. And in it he attached a	01:05:24
21	draft of Uri's application?	01:05:27
22	A. Yes.	01:05:30

1	Q. Okay. Now, he says to you: We're	01:05:31
2	still thinking about the term "source	01:05:44
3	sequence" and may change it.	01:05:48
4	What was your understanding of why	01:05:54
5	the term "source sequence" was used and why	01:05:55
6	they may change it?	01:05:58
7	A. I don't know what my understanding	01:06:12
8	was at the time about the term and potential	01:06:13
9	changes to it. I don't know.	01:06:20
10	Q. Did you ever have any -- at any	01:06:22
11	time have an understanding of what source	01:06:23
12	sequence refers to?	01:06:25
13	A. From this email, it indicates that	01:06:44
14	I would have, but I don't remember the	01:06:46
15	conversation about it.	01:06:48
16	Q. Okay. And sitting here today, do	01:06:56
17	you have any understanding of what source	01:06:59
18	sequence means?	01:07:00
19	A. I mean, I haven't reviewed this	01:07:12
20	version of the draft in detail. So I	01:07:14
21	couldn't -- I couldn't tell you what it means	01:07:16
22	beyond what is in the draft here.	01:07:20

1	Q. So in this draft, if you'd turn to	01:07:23
2	Pages 70 and 71, you see there are two	01:07:28
3	paragraphs, one on Page 71, on Page 71 where	01:07:41
4	he has a question for you bracketed that says:	01:07:50
5	Is this GSG work?	01:07:52
6	A. I do.	01:07:53
7	Q. Okay. And GSG refers to Good Start	01:07:54
8	Genetics?	01:07:56
9	A. Yes.	01:07:57
10	Q. Okay. Could you look at those two	01:07:58
11	paragraphs and tell me whether they are GSG	01:08:02
12	work?	01:08:05
13	A. From looking at these two	01:08:18
14	paragraphs in front of me today, I can't tell	01:08:19
15	you whether -- the question was whether they	01:08:21
16	are GSG work?	01:08:23
17	Q. Right.	01:08:26
18	A. Yeah, I can't tell you that. But	01:08:26
19	there may be later versions, you know, of	01:08:33
20	documents that would shed light on that.	01:08:35
21	Q. Yeah. I was going to give you a	01:08:40
22	copy of that.	01:08:42

1	ATTORNEY FUKUDA: Let's mark as	01:08:51
2	Exhibit 1062 a copy of ML IPR 27 through 59.	01:08:51
3	- - -	01:08:59
4	(Whereupon, ML IPR 27 through 59,	01:08:59
5	is received and marked as Exhibit 1062 for	01:08:59
6	Identification.)	01:08:59
7	- - -	01:09:00
8	ATTORNEY FUKUDA: Just forward it over.	01:09:08
9	CERTIFIED STENOGRAPHER: Number 1062.	01:09:10
10	A. Okay.	01:09:15
11	BY ATTORNEY FUKUDA:	01:09:15
12	Q. So is Exhibit 1062 a copy of an	01:09:16
13	email that you sent to Mr. Young on May 15,	01:09:23
14	2009?	01:09:26
15	A. Yes, it is.	01:09:30
16	Q. Okay. And in that email you say:	01:09:30
17	Attached is my edited version on these track	01:09:34
18	changes, and is the attachment a copy of the	01:09:36
19	'730 application with your edits?	01:09:43
20	A. Yes.	01:09:49
21	Q. Okay.	01:09:49
22	A. It's a copy of the draft at the	01:09:49

1	time.	01:09:50
2	Q. Right.	01:09:51
3	A. Yes.	01:09:52
4	Q. As of May 15, 2009?	01:09:53
5	A. As of May 15, yes.	01:09:54
6	Q. And did you review the application	01:09:56
7	in its entirety when you edited it?	01:10:01
8	A. Yes, I did.	01:10:48
9	Q. So first take a look at Page 36 of	01:10:54
10	the exhibit.	01:10:56
11	A. Okay.	01:11:00
12	Q. And you'll see that there are the	01:11:01
13	remaining two comments about the two	01:11:04
14	paragraphs that asks: Is this GSG work, and	01:11:05
15	then next to it it says: Not GSG work?	01:11:09
16	A. Yes.	01:11:14
17	Q. Okay. Did you add those comments:	01:11:15
18	Not GSG work?	01:11:17
19	A. Yes.	01:11:28
20	Q. And you deleted those two	01:11:30
21	paragraphs; right?	01:11:31
22	A. Yes.	01:11:56

1	Q.	Now that you've seen both of these	01:11:59
2		exhibits, are you able to tell me whose work	01:12:01
3		is described in those two paragraphs?	01:12:04
4	A.	No, I can't tell that.	01:12:16
5	Q.	Do you know where these two	01:12:23
6		paragraphs came from?	01:12:23
7	A.	Do you mean who drafted them or	01:12:31
8		what?	01:12:33
9	Q.	Who drafted them? Where did they	01:12:34
10		get the information?	01:12:36
11	A.	I don't remember.	01:12:39
12	Q.	How do you know those paragraphs	01:12:45
13		were not GSG work?	01:12:47
14	A.	I don't know. We were probably	01:12:55
15		trying to be very careful about things,	01:12:58
16		because at the time -- well, not by May, but	01:13:04
17		when we were drafting things initially, we	01:13:11
18		were not full-time Good Start employees, so I	01:13:14
19		think that's what this is referring to.	01:13:19
20	Q.	So you think this may be referring	01:13:28
21		to work that you and Uri may have done prior	01:13:29
22		to Good Start Genetics?	01:13:37

1	A. Well, I don't know, and as I said,	01:13:39
2	I think we were trying to be careful about it.	01:13:47
3	So I'm not sitting here today making the	01:13:50
4	determination that that was work that was done	01:13:54
5	prior to. What I'm saying is we were trying	01:13:58
6	to be careful about it.	01:14:00
7	Q. Okay. But looking at it, you knew	01:14:01
8	that that was not Good Start Genetics' work?	01:14:05
9	A. This, no. This indicates to me	01:14:07
10	that what I'm saying is we did not want to	01:14:11
11	include that paragraph, because at the time we	01:14:13
12	felt like it was better to be cautious and not	01:14:16
13	include it. So these words "not GSG work,"	01:14:22
14	this may be what you're pointing at. You	01:14:27
15	know, I don't know that I was making an	01:14:28
16	affirmative statement there that I believed at	01:14:30
17	the time that it was not. I think what we	01:14:32
18	were intending to do was keep it out because	01:14:34
19	we weren't sure and we wanted to be overly	01:14:38
20	cautious about it.	01:14:42
21	Q. Were you the one that put in	01:14:43
22	brackets "not GSG work"?	01:14:45

1	A.	I don't recall.	01:14:49
2	Q.	This was in the edits that you sent	01:14:50
3		back to them; right?	01:14:52
4	A.	Yeah, so I probably did, but I	01:14:52
5		don't recall doing it. So I may have or I may	01:14:56
6		not have.	01:14:59
7	Q.	Could you turn to Page 35 of	01:15:01
8		Exhibit 1062?	01:15:05
9	A.	Yeah. Okay.	01:15:09
10	Q.	And in that first full paragraph on	01:15:12
11		the page that starts with the skilled artisan.	01:15:16
12		Did you see that paragraph?	01:15:18
13	A.	Yes.	01:15:20
14	Q.	In the last sentence of that	01:15:21
15		paragraph the application says: In addition,	01:15:24
16		barcodes may be included, for example, to	01:15:28
17		uniquely identify individual samples, e.g.,	01:15:32
18		patient samples that may be mixed together,	01:15:35
19		see, e.g., USPTO Publication Number U.S.	01:15:39
20		2007/0020640A1 McCloskey, et al.	01:15:43
21		Do you see that disclosure?	01:15:51
22	A.	I do.	01:15:52

1	Q.	Okay. And you didn't make any	01:15:52
2		changes to that disclosure; right?	01:15:54
3	A.	You mean that paragraph?	01:15:58
4	Q.	Right.	01:16:00
5	A.	I mean, the email says: Attached	01:16:09
6		is my edited version. I used track changes.	01:16:10
7		I'm not seeing any track changes here.	01:16:15
8	Q.	Uh-huh.	01:16:17
9	A.	So I think that means that this	01:16:19
10		text is not something that I changed in this	01:16:22
11		version. Is that the question?	01:16:24
12	Q.	Right.	01:16:28
13		You did not make edits to this	01:16:29
14		paragraph?	01:16:32
15	A.	It doesn't appear that in this	01:16:32
16		version of the draft I made edits.	01:16:34
17	Q.	Okay. Do you agree that McCloskey	01:16:36
18		discloses that barcodes may be included, for	01:16:43
19		example, to uniquely identify individual	01:16:46
20		samples, e.g., patient samples that may be	01:16:48
21		mixed together?	01:16:50
22	A.	I mean, this says what it says. I	01:16:59

1	have not -- I have not done an analysis in	01:17:01
2	preparation for this about what McCloskey	01:17:05
3	discloses or doesn't --	01:17:12
4	Q. Okay.	01:17:14
5	A. -- disclose.	01:17:14
6	Q. What does it mean to uniquely	01:17:15
7	identify individual samples, e.g., patient	01:17:17
8	samples that may be mixed together?	01:17:19
9	A. I don't know. I would have to	01:17:26
10	review this entire thing, and McCloskey and I	01:17:27
11	haven't done that to prepare for this.	01:17:34
12	Q. In your work are you familiar with	01:17:40
13	the concept of mixing patient samples together	01:17:41
14	for processing?	01:17:44
15	A. I'm familiar with mixing patient	01:17:48
16	samples together, yes.	01:17:50
17	Q. Okay. And are you also familiar	01:17:51
18	with the concept of uniquely identifying	01:17:54
19	patient samples that are mixed together for	01:17:58
20	processing?	01:18:02
21	A. Again, I mean, we're talking about	01:18:06
22	specific words in this document and how	01:18:08

1	they're used in this document referring to	01:18:11
2	another document in McCloskey, and I have not	01:18:14
3	reviewed all of that to fully understand what	01:18:16
4	these words mean in this context.	01:18:19
5	Q. Well, I'm just asking you	01:18:22
6	generally: Are you familiar with the concept	01:18:23
7	of uniquely identifying patient samples so	01:18:26
8	that multiple patient samples can be mixed	01:18:30
9	together for processing?	01:18:33
10	A. I mean, I'm familiar with those	01:18:34
11	ideas, but the words that I would use to	01:18:36
12	describe them may be different and the	01:18:39
13	concepts may be different than what is written	01:18:41
14	here in the context of this document.	01:18:43
15	Q. Okay. So you are familiar with	01:18:47
16	that concept. In the concept of mixing	01:18:49
17	patient samples and uniquely identifying them	01:18:53
18	so that they can be processed together, you	01:18:57
19	are actually using a unique tag per patient	01:19:01
20	sample; right?	01:19:06
21	A. Again, it depends on the context.	01:19:08
22	I can imagine scenarios today where I might do	01:19:11

1	exactly what you're describing, but I don't	01:19:15
2	know that that is what's being disclosed here.	01:19:18
3	It may be. It may not be, and I'm not	01:19:22
4	prepared to give an opinion on it because this	01:19:26
5	has to be interpreted in the context of the	01:19:29
6	entire document and what we were thinking in	01:19:31
7	2009 when we drafted this.	01:19:34
8	Q. Right. Right.	01:19:35
9	And my question for you is: In the	01:19:37
10	context of this document, how is McCloskey	01:19:39
11	being described in terms of its disclosure of	01:19:43
12	unique identification of individual samples,	01:19:50
13	e.g., patient samples? What is your	01:19:54
14	understanding of what's being described here?	01:19:56
15	A. I mean, this is how we	01:20:00
16	characterized part of -- you know, we said as	01:20:01
17	an example this publication, this is how we	01:20:07
18	described that publication at the time. These	01:20:11
19	are the words we chose to use at the time.	01:20:13
20	That's about all I can say about it.	01:20:17
21	Q. And, again, that McCloskey	01:20:30
22	reference is the same one that we've been	01:20:32

1	previously talking about; right?	01:20:33
2	A. Yes, that's correct.	01:20:35
3	Q. If you could pick up the exhibit I	01:20:43
4	had given you earlier with McCloskey. Let me	01:20:45
5	find the number in a second. There you go.	01:20:50
6	It's Exhibit 1012 on the bottom.	01:20:53
7	A. Yes.	01:20:57
8	Q. Could you turn to Page 7 of that	01:21:02
9	exhibit.	01:21:09
10	A. Okay.	01:21:17
11	Q. And focusing your attention on	01:21:18
12	Paragraph 21 of McCloskey.	01:21:20
13	A. Okay.	01:21:24
14	Q. The first sentence says: The bar	01:21:25
15	coded oligonucleotide further comprises a	01:21:27
16	second sequence that provides a random	01:21:32
17	barcode. The term "random barcode" refers to	01:21:36
18	an arbitrary sequence that can uniquely	01:21:38
19	identify a target nucleic acid in an	01:21:42
20	experiment.	01:21:45
21	Do you see that disclosure?	01:21:45
22	A. I see that, yes.	01:21:46

1	Q. So McCloskey is teaching the use of	01:21:48
2	the random barcode to uniquely identify a	01:21:52
3	target nucleic acid in an experiment; right?	01:21:57
4	ATTORNEY MATTY: Objection. Scope.	01:22:01
5	A. I don't know what McCloskey is	01:22:04
6	teaching. I haven't reviewed this in detail,	01:22:06
7	and, I mean, you read certain words from the	01:22:09
8	page, but I can't tell you one way or the	01:22:12
9	other exactly what they mean in the context of	01:22:14
10	this document.	01:22:18
11	Q. Okay. Well, let's take a look at	01:22:20
12	further down that paragraph. I think if you	01:22:22
13	go about two-thirds of the way down, there is	01:22:25
14	a sentence that starts with "the length of the	01:22:27
15	second sequence"?	01:22:30
16	A. Yes.	01:22:31
17	Q. Okay. Now, McCloskey discloses:	01:22:31
18	The length of the second sequence is	01:22:34
19	sufficient to provide with high probability a	01:22:37
20	unique identity to each target nucleic acid	01:22:39
21	molecule in the sample prior to amplification.	01:22:43
22	Do you see that?	01:22:46

1	A.	I do.	01:22:47
2	Q.	Okay. So, again, here McCloskey	01:22:48
3		teaches uniquely tagging each target nucleic	01:22:52
4		acid molecule in a sample; right?	01:22:57
5	ATTORNEY MATTY:	Objection to scope.	01:22:59
6	A.	Again, I can't -- I don't know.	01:23:05
7	Q.	Okay.	01:23:13
8	A.	In the context of this document, I	01:23:13
9		don't know exactly what McCloskey is teaching.	01:23:14
10		I mean, again, the words are here, but I'd	01:23:18
11		have to review this whole thing and I'm not --	01:23:23
12		I'm not prepared to do that.	01:23:25
13	Q.	Would you at least agree with me	01:23:27
14		that in Paragraph 21, McCloskey is teaching	01:23:29
15		uniquely tagging each nucleic acid molecule in	01:23:33
16		a sample and not just tagging samples to	01:23:36
17		distinguish from other patient samples?	01:23:41
18	ATTORNEY MATTY:	Objection to scope.	01:23:43
19	A.	I -- again, I am not going to agree	01:23:48
20		to characterizations of McCloskey because I	01:23:51
21		have not reviewed it and I'm not prepared to	01:23:53
22		discuss it in detail.	01:23:56

1	Q.	And not even based on what you've	01:23:58
2		reviewed about Paragraph 21?	01:24:01
3	A.	No, because Paragraph 21 has to be	01:24:04
4		read in the context of the entire thing, where	01:24:06
5		words are given different meanings, and you	01:24:11
6		have to look at the whole document as a whole,	01:24:13
7		and I haven't done that analysis, so no.	01:24:14
8	ATTORNEY FUKUDA:	Now, let's mark as	01:24:27
9		Exhibit 1062 a copy of ML IPR 690 to 691.	01:24:37
10	ATTORNEY MATTY:	I think you're on 63.	01:24:43
11	ATTORNEY FUKUDA:	Did I say 1062?	01:24:50
12		Yeah, 1063.	01:24:51
13		Thank you.	01:24:52
14	CERTIFIED STENOGRAPHER:	Exhibit	01:24:54
15		Number 1063.	01:24:54
16	ATTORNEY MATTY:	Thank you.	01:24:59
17		- - -	01:24:59
18		(Whereupon, ML IPR 690 to 691, is	01:24:59
19		received and marked as Exhibit 1063 for	01:24:59
20		Identification.)	01:24:59
21		- - -	01:25:00
22	A.	Okay.	01:25:01

1	BY ATTORNEY FUKUDA:	01:25:17
2	Q. This is a copy of an email that you	01:25:20
3	sent to Mr. Young also on May 15, 2009; right?	01:25:23
4	A. Yes.	01:25:32
5	Q. Okay. And in this email you say:	01:25:33
6	I just reread the background with an eye	01:25:37
7	towards inclusion of invention ideas set	01:25:41
8	forth.	01:25:47
9	If you look at Paragraph 2, you	01:25:53
10	say: As we discussed, I would change	01:25:54
11	systematic error to either bias or systematic	01:25:56
12	and random error.	01:26:00
13	Do you see that suggestion you	01:26:04
14	make?	01:26:05
15	A. I do.	01:26:05
16	Q. Okay. Is bias the same as	01:26:06
17	systematic error?	01:26:11
18	A. I don't know.	01:26:19
19	Q. Why did you want to change	01:26:22
20	systematic error to bias?	01:26:23
21	A. I don't know.	01:26:30
22	Q. What are systematic errors?	01:26:34

1	A.	In the context of this application,	01:26:39
2		I don't -- I would have to review the entire	01:26:41
3		thing. I don't -- I don't recall why we were	01:26:43
4		drawing these distinctions in choosing to use	01:26:49
5		specific words. I don't.	01:26:52
6	Q.	Sitting here today, does systematic	01:26:56
7		error mean anything to you in the context of	01:26:57
8		your work?	01:27:01
9	A.	Systematic error today has --	01:27:03
10		again, it depends on the field you're talking	01:27:08
11		about and exactly what you're doing, but I	01:27:10
12		don't think that that necessarily is relevant	01:27:13
13		to this, because we had some idea back then of	01:27:16
14		all of this and that doesn't necessarily	01:27:21
15		comport with what I think about these terms	01:27:24
16		today.	01:27:26
17	Q.	Does systematic error mean anything	01:27:26
18		to you right now?	01:27:29
19	A.	It means many things to me, yes.	01:27:34
20		Sure.	01:27:38
21	Q.	Okay. In the context of DNA	01:27:39
22		sequencing, what does systematic error mean to	01:27:43

1	you?	01:27:45
2	A. It could still mean many things.	01:27:46
3	Q. Give me an example.	01:27:50
4	A. I mean, you could be -- you could	01:27:51
5	be talking about -- you could be talking about	01:27:52
6	things that happened during the workflow,	01:27:56
7	during the analysis, things that are happening	01:27:59
8	in the lab, things that people are doing. You	01:28:01
9	know, you could be talking about different	01:28:07
10	kind of errors. There is just a -- there is	01:28:08
11	many different things that you could describe	01:28:10
12	that way, and I -- so I don't know how to give	01:28:15
13	you what you are looking for back in 2009 in	01:28:19
14	the context of this email.	01:28:24
15	Q. Can you think of any errors that	01:28:27
16	would occur during DNA sequencing that's not a	01:28:29
17	systematic error?	01:28:31
18	A. I mean, again, we're talking about	01:28:35
19	today. We're talking about 2009. Lots of	01:28:36
20	errors can occur. I would want my answer to	01:28:40
21	be consistent with the rest of all of these,	01:28:47
22	these documents that we've been discussing	01:28:49

1	here that were in flight at the time, and I	01:28:50
2	just can't do that.	01:28:55
3	Q. Is systematic error a term that you	01:28:57
4	use in your regular business?	01:29:00
5	A. Today in 2025?	01:29:07
6	Q. At any point in time in your	01:29:10
7	business?	01:29:11
8	A. I mean, we have used it over time	01:29:14
9	to describe various things depending on the	01:29:18
10	specific context and what we're working on.	01:29:20
11	You know, we were thinking about it back in	01:29:23
12	2009, and, you know, it comes up from time to	01:29:25
13	time today, 16 years later.	01:29:28
14	Q. Can you give me some examples of	01:29:32
15	what you would consider to be systematic	01:29:33
16	errors?	01:29:34
17	A. I mean, the classic example is if	01:29:39
18	you flip a coin that's not fair, you get a	01:29:44
19	coin that's heavier or something on one side,	01:29:48
20	you flip it every time it comes up heads,	01:29:51
21	that's an example, it's a classic example of a	01:29:53
22	systematic error.	01:29:56

1	Q. What about in the context of DNA	01:29:57
2	sequencing?	01:29:59
3	A. I don't know. I wouldn't want to	01:29:59
4	give a specific example. I don't know. I	01:30:09
5	would have to think about it.	01:30:10
6	Q. Okay. You can't think of any	01:30:11
7	sitting here today?	01:30:13
8	A. I mean, I can think of many, but	01:30:14
9	again, I just -- I would need to give it more	01:30:16
10	thought.	01:30:19
11	Q. You can think of many. Can you	01:30:24
12	share a few of them with me?	01:30:25
13	A. I mean, I can call my watch a DNA	01:30:31
14	sequencer because it just prints out the	01:30:33
15	letter A over and over and over again, and	01:30:35
16	that's a systematic error because it's giving	01:30:37
17	me something that's not right. I would want	01:30:41
18	to give it some more thought, and I'm not	01:30:45
19	prepared to do that today.	01:30:47
20	Q. Okay. You also used the term	01:30:50
21	"random error." Is that the same or different	01:30:51
22	from systematic error?	01:30:54

1	A.	I don't know at the time.	01:31:00
2	Q.	In your view, is there a difference	01:31:10
3		between bias and error in the context of this	01:31:13
4		application?	01:31:15
5	A.	I mean, we were -- as we were	01:31:23
6		drafting this application, we were revising it	01:31:26
7		using different words over time, and we ended	01:31:34
8		up where we ended up, but I don't recall the	01:31:39
9		specifics about, you know, specific meanings	01:31:43
10		we were ascribing to one word or another. All	01:31:49
11		I can go by is what's actually in the patent.	01:31:53
12	Q.	So you can't tell me the	01:31:57
13		difference, if any, between bias and error in	01:31:58
14		this application?	01:32:01
15	A.	I'm just not prepared to discuss	01:32:03
16		specific terms as they were used in the	01:32:06
17		patent.	01:32:10
18	Q.	Do you know whether there is a	01:32:14
19		difference between the use of bias and error?	01:32:15
20	A.	Again, I'm not prepared to draw	01:32:17
21		distinctions and define terms and everything	01:32:22
22		else that's in one document or another.	01:32:24

1	Q.	Do you know of a difference between	01:32:30
2		bias and error as they're used in describing	01:32:32
3		DNA sequencing?	01:32:35
4	A.	In the context of these	01:32:37
5		applications, I would have to review the	01:32:38
6		entire thing in detail --	01:32:40
7	Q.	Okay. What about in the greater	01:32:41
8		context of sequencing?	01:32:43
9	A.	I mean, again, I think it depends	01:32:47
10		on the specifics of what you're talking about,	01:32:48
11		which is why I keep saying it really depends	01:32:52
12		on the context of the document.	01:32:55
13	Q.	Okay. But as of May 15, 2009, you	01:32:58
14		wanted to change references from systematic	01:33:01
15		error to bias or systematic and random error;	01:33:04
16		right?	01:33:09
17	A.	I mean, this indicates that there	01:33:12
18		was a discussion between probably me and	01:33:13
19		patent counsel, and what I'm saying here is as	01:33:16
20		we discussed, I would change systematic error	01:33:22
21		to either one of the other two. I don't	01:33:24
22		remember why. I don't remember the	01:33:27

1	discussion.	01:33:29
2	Q. But does your invention in the '730	01:33:49
3	patent address systematic error or random	01:33:51
4	error?	01:33:54
5	A. What do you mean by "address"?	01:33:59
6	Q. Help to reduce.	01:34:03
7	A. I'd have to review it.	01:34:06
8	Q. You don't remember?	01:34:08
9	A. Off the top of my head, I don't. I	01:34:09
10	would want to review the entire thing to make	01:34:11
11	a characterization like that. Yeah, I mean,	01:34:14
12	it's a long document.	01:34:22
13	Q. When is the last time you reviewed	01:34:24
14	the '730 patent?	01:34:25
15	A. I reviewed it briefly a few days	01:34:27
16	ago, but I didn't review it with an eye	01:34:30
17	towards being able to define specific terms or	01:34:36
18	answer questions like that because I	01:34:42
19	understand there are experts who are doing	01:34:44
20	that. So I reviewed it at a high-level.	01:34:46
21	Q. So you had testified earlier that	01:34:54
22	your alleged invention in the '730 patent was	01:34:58

1 to increase accuracy of DNA sequencing; right?

01:35:01

2 A. At a very high-level it is to --

01:35:08

3 and all of the things we were thinking at the

01:35:12

4 time were to increase accuracy or the utility

01:35:14

5 of sequencing.

01:35:19

6 Q. And does your '730 patent

01:35:22

7 increase -- the invention in your '730 patent

01:35:25

8 increase accuracy by reducing bias?

01:35:28

9 A. I mean, again, the patent -- the

01:35:33

10 method is what it is in the claims can be

01:35:36

11 applied to a number of things. I don't know

01:35:40

12 how to give you a more specific answer than

01:35:44

13 that.

01:35:47

14 Q. I mean, it's a simple question:

01:35:47

15 Does your -- do you believe that the invention

01:35:48

16 in the '730 patent increases accuracy by

01:35:51

17 reducing bias?

01:35:55

18 A. Again, we're talking about words of

01:35:58

19 like bias and other words, and I do not want

01:36:03

20 to characterize how the invention accomplishes

01:36:08

21 what it accomplishes.

01:36:11

22 Q. So you can't tell me the answer to

01:36:13

1	that question sitting here today?	01:36:14
2	A. I mean, do you know whether -- we	01:36:16
3	can -- we can read the claims, but that's --	01:36:17
4	that's -- that's what I'm going to be doing.	01:36:21
5	Q. Go ahead and read the claims.	01:36:25
6	A. Right. Claim 1?	01:36:26
7	Q. Any claim you want.	01:36:28
8	A. Okay. A method for correcting for	01:36:29
9	errors or bias introduced during nucleic acid	01:36:32
10	work flow, the method comprising the steps of	01:36:34
11	obtaining a biological sample comprising a	01:36:41
12	plurality of target nucleic acid molecules	01:36:44
13	from more than one locus of origin,	01:36:47
14	introducing a set of differentiator tags	01:36:50
15	wherein members of said set of differentiator	01:36:56
16	tags are associated with members of said	01:36:57
17	plurality such that one or more of said loci	01:36:57
18	of origin are associated with more than one	01:37:01
19	different -- more than one differentiator tag,	01:37:05
20	amplifying each of the plurality of tagged	01:37:08
21	target nucleic acid molecules to generate	01:37:12
22	amplicons, sequencing the amplicons obtained	01:37:17

1	in said amplifying step to obtain sequence	01:37:22
2	reads of each of the amplicons wherein each of	01:37:26
3	the sequence reads comprises a target nucleic	01:37:29
4	acid molecule sequence in a differentiator tag	01:37:33
5	sequence, and correcting for error or bias	01:37:38
6	introduced during said workflow by collapsing	01:37:42
7	target differentiator tag combinations	01:37:46
8	observed more than once into a single count.	01:37:50
9	Q. Okay. Now, can you answer my	01:37:54
10	question?	01:37:56
11	A. Beyond what's in the claim, I --	01:37:58
12	that's the best I can do.	01:38:00
13	Q. Does the invention of the '730	01:38:13
14	patent correct for bias?	01:38:15
15	A. I think that's what we just -- was	01:38:24
16	that the same question I just --	01:38:27
17	Q. No. I asked you a new question.	01:38:28
18	A. Was it a different question? I	01:38:30
19	mean, the invention of the '730 patent does	01:38:31
20	what it says here.	01:38:33
21	Q. So does it correct for bias?	01:38:35
22	A. It sounds like a very simple	01:38:39

1	question, but I'd have to read the entire	01:38:41
2	thing to give you that answer and review it,	01:38:42
3	and I'm not prepared to do that today. You	01:38:45
4	say is it correct for bias? We're talking	01:38:47
5	about the word "correct." We're talking about	01:38:49
6	the word "bias." Those terms are used in a	01:38:51
7	certain context throughout this patent, and I	01:38:56
8	am not prepared to do that analysis right now	01:39:00
9	on the spot today. I did not prepare that as	01:39:05
10	part of what I did to prepare for this	01:39:08
11	deposition.	01:39:11
12	Q. Okay. You just read Claim 1 of the	01:39:13
13	'730 patent; right?	01:39:14
14	A. Yes, I did.	01:39:16
15	Q. And after reading Claim 1, you're	01:39:17
16	unable to tell me whether the invention of the	01:39:20
17	'730 patent corrects for bias?	01:39:24
18	A. I am not prepared to give	01:39:30
19	definitions and characterizations of this	01:39:33
20	patent and specific meanings of specific words	01:39:38
21	within the patent after reading Claim 1.	01:39:41
22	Q. I'm just asking you: Does Claim 1	01:39:44

1	recite an invention that corrects for bias?	01:39:48
2	A. It recites what it recites.	01:39:54
3	Q. Is that a yes or a no?	01:39:56
4	A. That is a I cannot give you an	01:39:58
5	answer about specific words, like error or	01:40:00
6	bias, without reviewing the entire patent as a	01:40:03
7	whole, and I have not done that in preparation	01:40:08
8	for today, and I'm not prepared to do that	01:40:10
9	today.	01:40:13
10	Q. Does Claim 1 recite an invention	01:40:15
11	that corrects for errors?	01:40:17
12	A. That's going to be the same answer.	01:40:26
13	Q. Is there any difference between	01:40:32
14	errors and bias in the context of Claim 1?	01:40:34
15	A. Again, it's going to be the same.	01:40:39
16	It's the same. We're in the same situation.	01:40:44
17	Q. Okay. So you can't answer that	01:40:46
18	sitting here right now?	01:40:48
19	A. I'm not prepared to give you -- to	01:40:50
20	define words like this in the context of this	01:40:54
21	application.	01:40:57
22	Q. Okay.	01:41:13

1	ATTORNEY FUKUDA: Let's mark as	01:41:17
2	Exhibit 1064 a copy of ML IPR 875 to 913.	01:41:18
3	- - -	01:41:29
4	(Whereupon, ML IPR 875 to 913, is	01:41:29
5	received and marked as Exhibit 1064 for	01:41:29
6	Identification.)	01:41:29
7	- - -	01:41:30
8	CERTIFIED STENOGRAPHER: Exhibit	01:41:32
9	Number 1064.	01:41:32
10	A. Okay.	01:41:40
11	BY ATTORNEY FUKUDA:	01:41:52
12	Q. Okay.	01:41:52
13	Now, this is an email that	01:41:52
14	Mr. Young sent to you on May 18, 2009; right?	01:41:54
15	A. That's correct.	01:41:58
16	Q. Okay. And attaching an updated	01:41:59
17	application, which is the '730 application;	01:42:03
18	right?	01:42:08
19	A. Yes, it's the then current draft of	01:42:22
20	the application.	01:42:24
21	Q. Okay. You note in this email that	01:42:27
22	Mr. Young says they have revised the claims.	01:42:31

1	The revisions include two new independent	01:42:34
2	claims and a change from use of the term	01:42:37
3	"source sequence" to "differentiator tag	01:42:39
4	sequence."	01:42:43
5	Do you see that change?	01:42:44
6	A. I do.	01:42:45
7	Q. Do you have any understanding of	01:42:48
8	what a differentiator tag sequence is?	01:42:49
9	A. I did not review -- I didn't review	01:42:57
10	the material that I think I would need to be	01:43:02
11	able to answer that question to prepare for	01:43:05
12	this deposition.	01:43:07
13	Q. So you don't know what a	01:43:08
14	differentiator tag sequence is?	01:43:09
15	A. In the context of this application,	01:43:14
16	I didn't review the material that I would need	01:43:16
17	to to give you an answer to that question.	01:43:18
18	Q. Okay. And you can't do that today	01:43:22
19	sitting here; right?	01:43:24
20	A. I'm not prepared to do that. I	01:43:26
21	haven't reviewed all of the background that I	01:43:27
22	would need in order to do that.	01:43:31

1	Q.	Do you know why the term was	01:43:34
2		changed from source sequence to differentiator	01:43:35
3		tag sequence?	01:43:37
4	A.	No, I don't. Not based on this	01:43:46
5		email.	01:43:48
6	Q.	Now, it's your understanding that	01:44:26
7		Wolf Greenfield finally filed the '730	01:44:29
8		provisional application on May 18, 2009?	01:44:32
9	A.	That's correct.	01:44:35
10	Q.	And that was about seven days after	01:44:38
11		you told Wolf Greenfield that Uri's	01:44:41
12		application probably doesn't need further	01:44:46
13		revision at this point?	01:44:48
14	A.	I would want to go back. Could you	01:44:49
15		point me to that email?	01:44:51
16	Q.	Yes. That was Exhibit 1060.	01:44:53
17	A.	I mean, this May 11 email is me	01:45:41
18		saying that we expect drafts on the two	01:45:43
19		provisionals soon, and I said probably doesn't	01:45:46
20		need further revision at this point, but I	01:45:49
21		didn't know that for sure. So I don't -- I	01:45:51
22		don't know that I would -- that it's fair to	01:45:56

1	characterize the May 11 to May 18 -- you know,	01:45:58
2	we were doing a lot of work during that	01:46:04
3	period.	01:46:05
4	I also don't necessarily agree	01:46:08
5	with -- the question was they finally filed it	01:46:10
6	on May 18, and I said yes, but I was	01:46:13
7	indicating yes, they filed it on May 18. I	01:46:18
8	didn't mean to agree with the word "finally"	01:46:21
9	in that statement, because it kind of to me	01:46:25
10	connotes that we were waiting and, you know,	01:46:29
11	finally it's done. That's not how I would	01:46:34
12	characterize this. I agree that they filed it	01:46:36
13	on May 18, but it wasn't as if we were waiting	01:46:40
14	around for that May 18 date when they filed	01:46:44
15	it. So I just want to make that clear.	01:46:47
16	Q. Wolf Greenfield filed the '730	01:46:51
17	provisional application seven days after you	01:46:53
18	told them that Uri's application probably	01:46:57
19	doesn't need further revision at this point;	01:47:00
20	is that accurate?	01:47:03
21	A. They filed it seven days after	01:47:04
22	May 11, during which time there were a number	01:47:09

1	of revisions that we were doing.	01:47:13
2	When I made the comment that Uri's	01:47:18
3	probably doesn't need further revision, that	01:47:20
4	was just what I had in my head at that	01:47:22
5	particular time on May 11, but clearly we	01:47:27
6	weren't there yet because we were revising it	01:47:31
7	all the way up until the night that it was	01:47:34
8	filed.	01:47:36
9	Q. Now, if you take a look at	01:47:40
10	Exhibit 1054 --	01:47:42
11	A. Boy. We're out of sequence here.	01:48:01
12	Okay.	01:48:10
13	Q. And Exhibit 1054 was an email that	01:48:12
14	Mr. Waller sent to you on April 23; right?	01:48:16
15	A. Yes.	01:48:19
16	Q. So the '730 application was filed	01:48:21
17	25 days after Wolf Greenfield told you that	01:48:25
18	they have all of the important information and	01:48:28
19	they should not need significant technical	01:48:33
20	input at this stage; is that accurate?	01:48:37
21	A. Well, it was filed that number of	01:48:39
22	days after Wolf Greenfield said: I think you	01:48:40

1	have sent us, "think" being -- "I think" being	01:48:43
2	the key part of that, and then at the end	01:48:46
3	"should not need significant technical input	01:48:49
4	at this stage." So I think again, you know,	01:48:53
5	the words are what they are.	01:48:57
6	What stage was he referring to?	01:49:01
7	He's referring to "this stage," whatever "this	01:49:03
8	stage" is. This does not say to me that they	01:49:05
9	were ready to go on April 23, and we agreed	01:49:09
10	with them that they were ready to go on	01:49:13
11	April 23.	01:49:14
12	Q. If you'd turn back to your	01:49:19
13	declaration.	01:49:20
14	A. Okay.	01:49:31
15	Q. I'll just give you some examples.	01:49:40
16	If you look at Paragraph 10 onward, you'll see	01:49:42
17	that each of those paragraphs begin with	01:49:46
18	"based on my review of written	01:49:49
19	correspondence"?	01:49:52
20	A. Yes.	01:49:55
21	Q. And you see that that goes all the	01:49:56
22	way through from Paragraph 10 through	01:49:59

1	Paragraph 21; right?	01:50:01
2	A. Yes, I see that.	01:50:08
3	Q. Are all of the information in those	01:50:11
4	paragraphs based on your review of written	01:50:16
5	correspondence?	01:50:19
6	A. I'm not sure I understand what the	01:50:28
7	question is.	01:50:29
8	Q. Meaning, that information that you	01:50:30
9	have in those paragraphs, are any of them	01:50:32
10	based on your independent recollection of what	01:50:35
11	happened?	01:50:37
12	A. So, I mean, I recall the whole	01:50:45
13	period of time at the company when we were	01:50:51
14	preparing this application and all the others	01:50:56
15	that were in flight, you know, around the same	01:50:57
16	time.	01:51:00
17	Do I remember specific days or	01:51:03
18	specific -- you know, the dates of specific	01:51:06
19	emails from 16 years ago as I sit here today?	01:51:07
20	No, but I remember it overall, and the written	01:51:12
21	correspondence that I reviewed refreshed my	01:51:19
22	memory on things. I think that answers the	01:51:22

1 question.

01:51:29

2 Q. At some point Wolf Greenfield was
3 no longer prosecuting patents for Good Start
4 Genetics; right?

01:51:35

01:51:39

01:51:42

5 A. That's correct.

01:51:43

6 Q. And who is the replacement firm?

01:51:45

7 A. We moved from Wolf Greenfield to, I
8 think it was, Brown Rudnick at the time, a
9 prosecuting attorney named Tom Meyers.

01:51:50

01:51:57

01:52:03

10 Q. And when did you make the switch?

01:52:06

11 A. I don't recall exactly. It was --

01:52:10

12 I think it was after we filed the -- well, we

01:52:20

13 filed these -- this initial application in

01:52:26

14 '09. A year later we filed the next. I don't

01:52:31

15 know what it's called, but the next document

01:52:37

16 in the chain, and I think it would have been

01:52:40

17 some time after that that we switched to Tom.

01:52:46

18 Q. Okay. And do you remember why you

01:52:52

19 switched from Wolf Greenfield to Brown

01:52:54

20 Rudnick?

01:52:57

21 A. We had hired a CEO at Good Start by

01:53:04

22 that point. I forget when he came in, but it

01:53:08

1	would have been probably summer of 2010, maybe	01:53:16
2	late spring, call it spring, the summer of	01:53:21
3	2010, and he had worked with Tom in the past,	01:53:29
4	and he said, I'd like you to take a look at	01:53:30
5	Tom and see what you think, because he had a	01:53:34
6	level of familiarity with Tom's work at other	01:53:37
7	companies that he had run in the past and	01:53:40
8	other entrepreneurs that he knew who had	01:53:44
9	worked with Tom in the past, and we brought	01:53:47
10	him in. We had some conversations and decided	01:53:53
11	we liked him and we switched.	01:53:57
12	Q. Were you dissatisfied with Wolf	01:54:00
13	Greenfield's work?	01:54:01
14	A. No, I don't remember being	01:54:03
15	dissatisfied with their work.	01:54:05
16	Q. Earlier you mentioned the Molecular	01:54:08
17	Loop Innovations entity?	01:54:11
18	A. Yes.	01:54:13
19	Q. When was that entity formed?	01:54:17
20	A. I don't know exactly. I think the	01:54:37
21	formation date would have been 2025, but I	01:54:38
22	don't know exactly when.	01:54:42

1	Q. Why was that entity formed?	01:54:44
2	ATTORNEY MATTY: I'll give you the same	01:54:47
3	caution I did earlier here. Just be careful	01:54:48
4	not to get into confidential information or to	01:54:50
5	the extent there is --	01:54:53
6	- - -	01:54:55
7	(Clarification requested by the	01:54:55
8	stenographer.)	01:54:55
9	- - -	01:54:55
10	ATTORNEY MATTY: Sorry. Or substance	01:54:57
11	of legal advice.	01:54:58
12	A. I don't know how much of that I can	01:55:04
13	answer without revealing confidential	01:55:06
14	information.	01:55:08
15	Q. Do you hold a position with	01:55:12
16	Molecular Loop Innovation?	01:55:14
17	A. I do.	01:55:15
18	Q. And what's your position?	01:55:16
19	A. I'm the CEO and on the board.	01:55:18
20	Q. And on the board. Were you a	01:55:22
21	founder of Molecular Loop Innovation?	01:55:26
22	A. No, I was not.	01:55:27

1	Q. Which entity owns Molecular Loop	01:55:32
2	Innovation?	01:55:33
3	ATTORNEY MATTY: I'll give you the same	01:55:35
4	caution on confidentiality.	01:55:36
5	A. Yeah. I don't -- I don't know how	01:55:38
6	much of that is nonconfidential. I don't -- I	01:55:41
7	don't know that I can talk about that.	01:55:45
8	Q. The corporate structure is	01:55:46
9	confidential?	01:55:48
10	A. It's an LLC. So I don't know how	01:55:50
11	much of that I can discuss today as part of	01:55:53
12	this.	01:55:56
13	Q. Which Molecular Loop entity owns	01:55:59
14	the '730 patent?	01:56:01
15	A. Molecular Loop Innovations LLC owns	01:56:05
16	it.	01:56:07
17	Q. Okay.	01:56:08
18	ATTORNEY FUKUDA: I have no further	01:56:23
19	questions at this point.	01:56:23
20	ATTORNEY MATTY: Let's take a short	01:56:25
21	break. I'll see if I have any questions.	01:56:25
22	THE VIDEOGRAPHER: We're going off the	01:56:29

Transcript of Gregory J. Porreca, Ph.D.
Conducted on September 30, 2025

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1	record at 1:56 p.m.	01:56:29
2	- - -	01:56:30
3	(Whereupon, a short recess was	01:56:30
4	taken.)	01:56:30
5	- - -	01:56:30
6	THE VIDEOGRAPHER: Stand by, please.	02:03:46
7	We are back on the record at 2:03 p.m.	01:56:30
8	ATTORNEY MATTY: We have no questions	02:03:58
9	for today, so we can log off.	02:03:59
10	ATTORNEY FUKUDA: Thank you.	02:04:02
11	THE VIDEOGRAPHER: This marks the	02:04:03
12	ending of the video deposition of Dr. Porreca.	02:04:04
13	The time on the video monitor is 2:03 p.m.	02:04:07
14	(Time noted: 2:03 p.m.)	
15		
16		
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No. 198, NCRA Certified Realtime Reporter, and
NCRA Registered Diplomate Reporter, the
officer before whom the proceedings were
taken, do hereby certify:

That prior to the commencement of the
deposition of GREGORY J. PORRECA, Ph.D., the
witness was by me first duly sworn to testify
the truth; that said deposition was taken in
stenotype notes by me on the 30th day of
September 2025, at the offices of Desmarais
LLP, 230 Park Avenue, New York, New York
10169, commencing at 9:59 a.m. and ending at
2:03 p.m. and was thereafter reduced to
typewritten form under my supervision, and

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1 that the foregoing pages 1 through 166
2 constitute a true and accurate record of the
3 said witness.

4 I further certify that present on
5 behalf of Petitioner, Illumina Inc., were
6 Ching-Lee Fukuda, Esq., of Sidley Austin LLP,
7 and present on behalf of patent owner,
8 Molecular Loop Biosciences, Inc., was Brian D.
9 Matty, Esq. of Desmarais LLP.

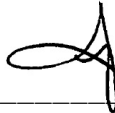
10 I further certify that the original
11 deposition will be transmitted to counsel for
12 the Petitioners for transmission to Gregory J.
13 Porreca, Ph.D. for reading and execution.

14 I further certify that I am not related
15 to, nor associated with any of the parties or
16 their attorneys, nor do I have any
17 disqualifying interest, personal or financial
18 in the actions within.

19
20
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1 IN WITNESS WHEREOF, I have hereunto set
2 my hand this 30th day of September 2025.

3
4
5 

6 _____
7 RICHARD GERMOSEN,
8 FAPR/RDR/CRR/CCR-NJ/CRCR/CSR-CA/CCRR-CA
9 LICENSE NO. 30XI00184700
10 LICENSE NO. 30XR00016800
11 California CSR No. 14391
12 California CRR No. 198
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