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UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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SMAXTEC INC. and  
SMAXTEC ANIMAL CARE GMBH  
Petitioners,

v.

ST REPRODUCTIVE TECHNOLOGIES, LLC,  
  
Patent Owner,

-----

Case No. IPR2024-00875  
  
U.S. Patent No. 9,844,206  
  
Case No. IPR2024-00885  
  
U.S. Patent No. 8,823,515

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DEPOSITION OF  
  
TAMI M. BROWN-BRANDL, Ph.D.

Reported by: Susan S. Klinger, RMR-CRR, CSR  
  
Job No. 588104

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June 19, 2025

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8:54 a.m.

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Deposition of TAMI M. BROWN-BRANDL, Ph.D., held

9

at the offices of Gibson Dunn & Crutcher, 2001

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Ross Avenue, Dallas, Texas before Susan S.

11

Klinger, a Registered Merit Reporter and Certified

12

Realtime Reporter of the State of Texas.

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1 A P P E A R A N C E S:

2  
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I N D E X

| WITNESS                     | PAGE |
|-----------------------------|------|
| TAMI M. BROWN-BRANDL, Ph.D. |      |
| EXAMINATION BY MR. LANDERS  | 5    |

E X H I B I T S

(Exhibits retained by Counsel.)

| No.          | Description      | Page |
|--------------|------------------|------|
| Exhibit 1003 | IPR2024-00875    | 8    |
| Exhibit 1003 | IPR2024-00885    | 9    |
| Exhibit 1039 | Bagley reference | 62   |
| Exhibit 1040 | Neter reference  | 66   |
| Exhibit 1041 | Hair reference   | 73   |
| Exhibit 1055 | IPR2024-00875    | 10   |
| Exhibit 1055 | IPR2024-00885    | 10   |

1 P R O C E E D I N G S

2 MR. LANDERS: Good morning. My name is  
3 Thomas Landers, and I'm with the Akin law firm. I  
4 represent patent owner in IPR2024-00875 and  
5 IPR2024-00885, and this deposition relates to  
6 those two IPR proceedings.

7 MR. CURTIS: I'm Nathan Curtis from  
8 Gibson, Dunn & Crutcher on behalf of petitioners  
9 and the witness, Dr. Tami Brown-Brandl.

10 DR. TAMI BROWN-BRANDL,  
11 having been first duly sworn testified as follows:

12 EXAMINATION

13 BY MR. LANDERS:

14 Q Good morning, Dr. Brown-Brandl.

15 A Good morning.

16 Q Could you state your full name for the  
17 record, please?

18 A My name is Tami Marie Brown-Brandl.

19 Q And are you the same Tami Marie  
20 Brown-Brandl that has been deposed in these  
21 proceedings before?

22 A Yes, I am.

1 Q And just for the record, could you state  
2 your current address?

3 A My home address?

4 Q Yes, please.

5 A Is 1735 Beechwood Drive, Aurora, Nebraska.

6 Q And are you still employed by the  
7 University of Nebraska at Lincoln?

8 A I am.

9 Q And do you have any other employers at  
10 this time?

11 A I do not.

12 Q And you've been deposed once in these  
13 proceedings, correct?

14 A I have.

15 Q Have you been deposed any other times in  
16 your life?

17 A No.

18 Q And before these proceedings, did you have  
19 any relationship with anyone at the law firm  
20 Gibson Dunn?

21 A I did not.

22 Q Okay. So at our last deposition, we went

1 over some of the basics. So I assume you  
2 remember -- generally remember how these  
3 proceedings work?

4 A I hopefully -- hopefully, yes.

5 Q We'll just go over a few ground rules just  
6 as a reminder, but --

7 A Okay.

8 Q -- if you have any questions or any issues  
9 that arise, just let us know.

10 So, yeah. So, as you know, the court  
11 reporter is typing everything we say, so if you  
12 could please -- don't speak too fast and then  
13 allow me to finish my question before you provide  
14 your answer. Does that make sense?

15 A That makes sense.

16 Q Okay. And when you do provide answers to  
17 my questions, please use actual words like yes or  
18 no and not uh-huh or huh-uh or shaking or nodding  
19 your head because we want a clear record. Does  
20 that make sense?

21 A That makes sense.

22 Q And then during the course of the

1 deposition, your attorney may object to some of my  
2 questions, but you still have to answer the  
3 question. Does that make sense?

4 A That makes sense.

5 Q And then if you need a break, please let  
6 us know, and we'll do our best to accommodate.

7 A Okay.

8 Q And you do understand you're under oath  
9 today, right?

10 A I do.

11 Q Is there any reason at all why you would  
12 be unable to provide accurate and truthful  
13 testimony today?

14 A There is not.

15 Q Okay. So I'm just going to introduce a  
16 few exhibits we will be using throughout of the  
17 course of the day.

18 The first one I'll ask the court reporter  
19 to hand you is marked as Exhibit 1003 in  
20 IPR20240-0875.

21 (Exhibit 1003 (IPR20240-0875) discussed.)

22 Q And do you recognize this as your first

1 declaration for the '206 patent?

2 A I do.

3 Q Okay. So if I refer to this as your  
4 original or first '206 declaration, you'll  
5 understand that I'm referring to this document,  
6 right?

7 A Yes.

8 Q Okay. I'll also ask that the court  
9 reporter hand you what has already been marked as  
10 Exhibit 1003 in IPR2024-00085.

11 (Exhibit 1003 (IPR2024-00085) discussed.)

12 Q And you have that document in front of  
13 you, correct?

14 A I do.

15 Q And do you recognize this as your first or  
16 original declaration pertaining to the '515  
17 patent?

18 A Yes.

19 Q Okay. Actually, I'll just -- I'll hand  
20 you-all four now.

21 MR. CURTIS: Thanks.

22 Q So I'll also ask the court reporter to

1 hand you what's been marked as Exhibit 1055 in  
2 IPR2024-00875.

3 (Exhibit 1055 (IPR2024-00875) discussed.)

4 Q Do you have that document in front of you?

5 A I do.

6 Q Do you recognize this as your reply  
7 declaration for the '206 patent?

8 A Yes, I do.

9 Q Okay. And then I'll also ask the court  
10 reporter to hand you what's been marked as Exhibit  
11 1055 in IRP2024-00885.

12 (Exhibit 1055 (IRP2024-00885) discussed.)

13 Q And do you recognize this as your reply  
14 declaration pertaining to the '515 patent?

15 A I do.

16 Q Okay. So you have four declarations in  
17 front of you, right?

18 A Yes.

19 Q And you understand that your deposition today  
20 involves two different proceedings, one involving  
21 the '206 patent and one involving the '515 patent,  
22 right?

1           A    I do.

2           Q    And you understand that the testimony you  
3 provide today will pertain to both proceedings?

4           A    Yes, I do.

5           Q    If you have any questions about -- an  
6 answer may be different for one proceeding than  
7 the other, you'll let me know, right?

8           A    I will.

9           Q    Okay. So sitting here today, do you stand  
10 by everything you wrote in your four declarations  
11 in front of you?

12          A    I do.

13          Q    So I'm asking now specifically about the  
14 reply declarations.

15          A    Okay.

16          Q    Could you describe your process for  
17 preparing your two reply declarations?

18          A    So in preparing these, I met with counsel  
19 a few different times. We -- I reviewed the  
20 testimony that I provided. And we talked about  
21 the response -- the responses, and I provided some  
22 of the references. And they prepared the legal --

1 the legal language in these. And then I reviewed  
2 it and made changes, and then we finalized it, and  
3 I signed it.

4 Q Okay. So just to go over a few things  
5 that you mentioned, you said that you met with  
6 counsel, right?

7 A Yes.

8 Q Who all did you meet with that was counsel  
9 in this case?

10 A I met with Nathan Curtis.

11 Q Did you meet with any other attorneys in  
12 preparing your reply declarations?

13 A No, I did not.

14 Q Okay. And you said you met a few  
15 different times with Mr. Curtis; is that correct?

16 A That is right.

17 Q And is that three different times?

18 A It's either three or four different times.

19 Q And you said that you reviewed your  
20 testimony; is that accurate?

21 A I did.

22 Q And are you referring to your previous

1 deposition in this case?

2 A I am.

3 Q And you mentioned talking about the  
4 responses.

5 A Yeah.

6 Q Do you know what that is?

7 A Well, I reviewed Dr. Bowser's deposition,  
8 and we talked -- we discussed those responses and  
9 my deposition.

10 Q So when you say the word "responses," you  
11 literally are talking about responses to  
12 questions --

13 A Yeah.

14 Q -- in depositions?

15 A Yes.

16 Q And you mentioned providing some of the  
17 references. Are you referring to exhibits that  
18 are cited in the reply declarations?

19 A Yes, I am.

20 Q And you said that you provided some of  
21 them; is that correct?

22 A Yeah. We discussed, and then Mr. Curtis

1 also provided a couple, and I reviewed those and  
2 decided they were -- they answered questions or  
3 provided supporting documents.

4 Q So I asked you about attorneys that you  
5 met with, and you mentioned Mr. Curtis, right?

6 A Yes.

7 Q Did you get any assistance from any  
8 non-attorneys in preparing your declarations?

9 A I did not.

10 Q Just to clarify, did you communicate with  
11 or receive any information from someone named June  
12 Munford in preparing your reply declarations?

13 A I did not.

14 Q Did you communicate or receive any  
15 information from someone named Nathaniel E.  
16 Frank-White when you prepared your reply  
17 declarations?

18 A I did not.

19 Q Have you ever met either of those people  
20 or talked to them?

21 A I have not.

22 Q Have you ever communicated with either of

1 those people at all?

2 A I have not.

3 Q Did you communicate with or receive any  
4 information from any librarian in preparing your  
5 reply declarations?

6 A I did not.

7 Q And did you communicate with or receive  
8 any information from any internet search engine  
9 experts to prepare your reply declarations?

10 A I did not.

11 Q And did you communicate with or receive  
12 any information from any expert on Google's  
13 functionality in preparing your reply declaration?

14 A I did not.

15 Q Okay. So now I'm going to ask about the  
16 deposition preparation today.

17 A Okay.

18 Q So this proceeding.

19 About how long did you prepare for your  
20 deposition?

21 A I prepared a few hours before arriving in  
22 Dallas, and I met with counsel yesterday for about

1 six hours, and then I prepared last night and the  
2 night before also.

3 Q And when you said you prepared a few hours  
4 before arriving, was that preparation performed by  
5 yourself?

6 A Yes.

7 Q And when you say arriving, would that have  
8 been yesterday?

9 A I arrived -- no. I arrived Tuesday  
10 evening.

11 Q Okay. And then on Wednesday you met  
12 with --

13 A And then --

14 Q -- counsel?

15 A Yeah. Yes, that is true. That is true.

16 Q So in total, you spent a few hours by  
17 yourself before arriving in Dallas preparing for  
18 your deposition. And then in Dallas you met with  
19 counsel for one day and then also prepared  
20 additionally on your own that night?

21 A Yeah, and the night before, too, Tuesday  
22 night and Wednesday night.

1           Q   And who all did you meet with to prepare  
2   for today's deposition?

3           A   Just Mr. Curtis.

4           Q   Did you meet with any non-attorneys to  
5   prepare for this deposition?

6           A   I did not.

7           Q   And that would include -- strike that.

8               And to be clear, you did not meet with any  
9   librarian or Google search engine expert to  
10   prepare for today's deposition?

11          A   I did not.

12          Q   Okay. I'm going to ask you to pull out  
13   your '206 reply declaration specifically. I'll  
14   use that as a guide for my questions, but there's  
15   a lot of overlapping subject matter, right?

16          A   There is.

17          Q   So my intention is that your answers will  
18   apply to both, but if you think there's something  
19   in your '515 reply declaration that you need to  
20   review, I'm not saying you can't review that or  
21   anything.

22          A   Okay.

1           Q   But I'm going to focus on the -- I'm going  
2   to use the '206 declaration paragraph numbers.

3           A   Okay. That makes sense.

4           Q   Okay. Let's start with page 1 of your  
5   '206 reply declaration, and I'm using the  
6   number --

7           A   The actual page number?

8           Q   The smaller number, the actual page  
9   number, not the exhibit number.

10          A   Okay.

11          Q   And I'll try to be consistent with that,  
12   but if there's ever uncertainty about which page  
13   number I'm on, please let me know.

14          A   Okay.

15          Q   Okay. So on page 1 of your '206 reply  
16   declaration, toward the bottom, second-to-last  
17   line, you refer to a person having ordinary skill  
18   in the art, POSA.

19               Do you see that?

20          A   Yes.

21          Q   Has your understanding of a POSA for the  
22   '515 and '206 patent changed since your prior

1 deposition?

2 A It has not.

3 Q And your understanding of a POSA in your  
4 reply declaration would be the same as your  
5 original declarations. Is that fair to say?

6 A Yes, it is.

7 Q Okay. So you'll understand what I'm  
8 referring to if I mention POSA throughout the  
9 course of the day?

10 A I will.

11 Q Let's go ahead and flip ahead to page 18  
12 of your '206 reply declaration. And on page 18 of  
13 your reply declaration, in the heading labeled A,  
14 you refer to estrus or illness detection.

15 Do you see that?

16 A I do.

17 Q And what is your understanding of the  
18 meaning of the term "estrus"?

19 A Estrus is physiological response to  
20 ovulating, and so it's a series of hormones that  
21 the animal goes through before -- before the  
22 animal ovulates.

1 Q Does the animal exhibit a physical  
2 response when it is in estrus?

3 A Yes.

4 Q What is that physical response?

5 A In the literature, it -- it would state  
6 that animal is -- moos more frequently. The  
7 animal might mount another animal. Then  
8 there's -- those are the behaviors that -- that  
9 you would see.

10 Q Right. That's what I'm asking about.

11 A Okay.

12 Q And is estrus the same as heat?

13 A Yeah. Heat is -- is more of a layman's  
14 term, and estrus is more a scientific term.

15 Q And is estrus, e-s-t-r-u-s, the same as  
16 oestrus, sometimes spelled o-e-s-t-r-u-s?

17 A It is.

18 Q So there's no difference between those two  
19 terms?

20 A Not in my knowledge, no.

21 Q And does estrus precede ovulation?

22 A Yes.

1           Q   And are you familiar with the expression  
2   "standing or mounting activity" in the context of  
3   dairy cattle?

4           A   Yes.

5           Q   And is standing or mounting activity a  
6   proxy for estrus?

7           A   It -- it is a sign of estrus.

8           Q   So standing or mounting activity is a sign  
9   of estrus?

10          A   Yeah, it's a behavioral sign that the  
11   animal is in estrus.

12          Q   Would persons of skill in the art  
13   understand standing or mounting activity to be a  
14   proxy for estrus?

15          A   Yes.

16          Q   Let's turn to page 22 of your '206 reply  
17   declaration. Are you there?

18          A   I am.

19          Q   And would you agree that the top partial  
20   paragraph is going to be paragraph 22 of your  
21   declaration on page 22?

22          A   Yes.

1           Q   Okay.  Feel free to refer to the entire  
2 paragraph 22 if you need to, but my question is  
3 about a parenthetical on page 22 of your reply  
4 declaration.

5           A   Okay.

6           Q   And the parenthetical I'm asking about is  
7 the one that starts with the word "however."

8                   Do you see that?

9           A   I do.

10          Q   And it looks like you're quoting an  
11 exhibit that says:  However, animals which graze  
12 infected fescue often had low weight gain, reduced  
13 milk production, lowered conception rates, and  
14 other health problems.

15                   Do you see that?

16          A   I do.

17          Q   And my question is, what does graze  
18 infected fescue mean?

19          A   So graze is a term when animals are out in  
20 the pasture, and they are eating grass that is  
21 growing.  Infected fescue, in southern United  
22 States fescue is -- has a -- I think it's a mold

1     that grows in it that -- that has a devastating  
2     effect on animals. So that -- that's the infected  
3     part, is it has a microtoxin from the mold.

4           Q    So in this context, grazing infected  
5     fescue can cause health problems. Is that the  
6     gist of this?

7           A    Yes.

8           Q    Okay. So you mentioned that graze is a  
9     term when animals are out in the pasture, and they  
10    are eating grass that is growing. Do you recall  
11    testifying that?

12          A    I do.

13          Q    On a dairy farm do cows also eat hay for  
14    feeding?

15          A    Yeah. There's different types of dairy,  
16    one of which the animals are always inside, and  
17    they are -- they are fed a diet while they're in a  
18    pen. Then there's also dairies that allow the  
19    animals to free -- free roam in a pasture, and  
20    they would -- they would then be grazing the grass  
21    that is out there.

22          Q    Are you familiar with the term "paddock"?

1 A Yes.

2 Q P-a-d-d-o-c-k?

3 A Yes, I am.

4 Q What is that?

5 A Paddock is a small -- it's a small area or  
6 small field. And generally when the farmer is  
7 using a paddock, they are -- they rotate graze.  
8 So they might spend a week in one paddock and then  
9 a week in another paddock, and then they rotate  
10 through.

11 Q And can a paddock contain a hay trough for  
12 feeding?

13 A I suppose it can. Generally, you are  
14 grazing paddocks, so you are maintaining fresh  
15 grass that has a lot of nutrients. And so that's  
16 why you are rotating around so the cows are  
17 eating, like, an even distribution of grass and  
18 not picking and choosing.

19 Q You said you can contain -- strike that.

20 You said you can use a hay trough for  
21 feeding in conjunction with a paddock?

22 A Yeah. Maybe that would be more in the

1 fall or winter when the grass isn't growing so  
2 fast. You could use a supplemental feeding source  
3 or -- or feed -- feed source.

4 Q And how often are dairy cows given access  
5 to a paddock when you're using a paddock-type  
6 system?

7 A It really depends on the area of the world  
8 that you're in. It's -- it's a producer's choice,  
9 but it also is related to how fast the grass grows  
10 and -- yeah. So it really depends on the  
11 producer, I guess.

12 Q So, in general, on a dairy farm, how are  
13 cows given access to drinking water?

14 A There's a trough, an automated water  
15 source that they can access and get water.

16 Q And how often do dairy cows drink water  
17 each day?

18 A That is animal-to-animal dependent. I  
19 don't know if there's a single right answer to  
20 that.

21 Q So for a given individual cow, will that  
22 cow drink water at the same time every day in a

1 dairy farm?

2 A Not precisely, no. There might be general  
3 trends where they -- they do certain behaviors,  
4 but for exact timing, they -- they wouldn't be  
5 exact timing, no.

6 Q So an individual cow will not drink water  
7 at the exact same time every day, right?

8 A Not at the exact same time every day, no.  
9 It might be a general time, but it's not going to  
10 be precisely a time.

11 Q So for a given cow, they might drink water  
12 at a different time each day. Is that fair to  
13 say?

14 A Yeah. It really depends on the dynamics  
15 of the -- of the herd, when people are there, when  
16 they get milked.

17 Q So the time that a cow drinks water can  
18 depend on factors such as when they get milked?

19 A Yes.

20 Q And how often do dairy cows -- strike  
21 that.

22 So we talked about the paddock. Is that,

1     like, one type of system for feeding cows?

2           A   It is one type of system.

3           Q   So in a paddock-type system, could a  
4     farmer predict the time of day that each cow is  
5     going to eat?

6           A   Generally -- generally, cows -- and this  
7     is across all cattle species -- given outdoor  
8     conditions, will graze early in the morning, lay  
9     down during the day, and graze in the evening.  
10    That's their preferred method or their preferred  
11    behavior. When the temperature changes, that  
12    pattern changes. Yeah.

13          Q   So on a day-to-day basis, a person of  
14    skill could not predict the exact times when an  
15    individual cow is going to eat. Is that fair to  
16    say?

17          A   You can -- it's not precisely at 7:08  
18    they're going to start eating. When the sun comes  
19    up, they will start grazing.

20          Q   So would it be fair to say that a person  
21    of skill could not predict the precise time that a  
22    cow is going to visit a hay trough?

1           A   It is fair to say that you -- an animal  
2   isn't going to eat at the exact same time every  
3   day. So it would be difficult to predict,  
4   pinpoint an exact time that they are going to go  
5   eat.

6           Q   So would it be accurate to say that dairy  
7   cows visit hay feeders and water troughs at  
8   unpredictable times throughout a given day?

9           A   I don't think that's fair to say. I think  
10   there's a general pattern when an animal is going  
11   to eat, but a precise timing is -- is an  
12   impossible thing to predict, but there are general  
13   trends.

14          Q   So just to be clear, it would be  
15   impossible to predict a precise timing for when a  
16   dairy cow will visit a hay feeder or water trough?

17          A   That -- that is a true statement, yes.

18          Q   Okay. We're still looking at that quote  
19   on page 22 of your reply declaration.

20          A   Okay.

21          Q   Are you with me?

22          A   I am.

1           Q   Okay.  Do you see where it says, low  
2 weight gain?

3           A   Yes.

4           Q   How is a dairy cow's weight measured?

5           A   In 2008 or 2009 they would have been  
6 walked over a scale.

7           Q   And when the cow walks over a scale to be  
8 weighed, how is the weight recorded typically in  
9 the 2008, 2009 timeframe?

10          A   There would have been a couple of  
11 different ways.  A producer might have just  
12 written it down and then typed it in, or it might  
13 have been collected automatically and then stored  
14 in a database.

15          Q   When you say collected automatically, what  
16 do you mean by that?

17          A   The scales can be hooked up to -- directly  
18 to a computer, and so as the animal is on the  
19 scale, you see the weights.  You hit a button.  
20 That will freeze the weight, and then that  
21 automatically transfers to the computer.

22          Q   And is the computer connected to the scale

1 with, like, a cord?

2 A It can be -- even in 2008, there would --  
3 you could have done it with a -- with a cord, or  
4 you could have done it via WiFi. A cord was  
5 probably more common, but WiFi was also available.

6 Q So in the 2008, 2009 timeframe, it was  
7 more common to automatically transfer weight data  
8 for a cow to a computer using a cord; is that  
9 right?

10 A I would say it was either -- it was either  
11 done by a cord or somebody was writing it down and  
12 then typing it into the database later.

13 Q And those were the two most common ways to  
14 do it?

15 A I would say yes. Once again, it really  
16 depends on the farm.

17 Q And how often is the dairy cow's weight  
18 typically measured in the 2008 timeframe?

19 A That is really farm-by-farm dependent.

20 Q Earlier you referred to -- strike that.

21 Earlier when I asked how a dairy cow's  
22 weight is measured, you said that in 2008 or 2009

1     they would have been walked over a scale.  Is  
2     that -- do you recall that?

3           A   Yes, I -- yeah, either that or held on a  
4     scale, one of the two ways.

5           Q   And when you referred to a scale, would  
6     that be considered a cow weight scale?

7           A   Yes.

8           Q   And do you know how the cow weight scale  
9     operates?

10          A   Yes.

11          Q   How?

12          A   You -- there are load bars or load cells  
13     underneath the scale, and I'm sure there are other  
14     ways, but the one that I am familiar with is, it's  
15     looking for a deflection in that -- in that bar,  
16     and it measures voltage and records -- records a  
17     weight based on that voltage.

18          Q   And does a cow weight scale use sensors?

19          A   Yes.

20          Q   Okay.  We're still looking at the quote on  
21     page 22 of your reply declaration.

22          A   Yes.

1           Q   Now, I'm looking at the term "reduced milk  
2   production."   Do you see that?

3           A   Yes.

4           Q   How are a -- strike that.

5               How are a cow's milk production values  
6   obtained?

7           A   It also depends on -- on the farm.   It can  
8   be just a -- an occasional reading that is  
9   collected, or if they have sensors in the -- in  
10   the milking apparatus, it can then determine,  
11   every time they go to be milked, how much milk  
12   they are producing.

13          Q   And can a milk production value be  
14   continuously measured over the course of the day  
15   for a cow?

16          A   So the milk production is only measured if  
17   it is continuously measured.   That would mean that  
18   it's measured every time that's it's milked.   So  
19   if it's milked twice a day, you would get two  
20   readings a day if it was a continuous reading.   If  
21   it's milked three times a day, and they had the  
22   sensors in the equipment, you would get three

1 readings a day.

2 Q So to your knowledge, there is no way to  
3 continuously measure milk production throughout  
4 the course of the entire day, right?

5 A Milk production is measured when you  
6 extract the milk.

7 Q So you can't measure milk production  
8 continuously over the course of the day, right?

9 MR. CURTIS: Objection, asked and  
10 answered.

11 A I think the definition of milk production  
12 is when the milk is extracted.

13 Q And are you familiar with the term  
14 "lactation cycle" in the context of dairy farming?

15 A I believe I know what that term means.

16 Q What does it mean to you?

17 A What it -- a lactation cycle would be from  
18 the birth of a calf all the way through until the  
19 animal is dried off prior to giving birth to the  
20 next calf.

21 Q So a dairy cow's lactation cycle includes  
22 a dry period; is that right?

1           A   I -- that I'm not sure of. I would say a  
2           lactation -- lactation ends when they dry them  
3           off. So there's probably a two-month period when  
4           they're not getting any -- they're not giving any  
5           milk, not being milked.

6           Q   One way to look at it would be that the  
7           lactation cycle is just the part of the cow's  
8           cycle when they're producing milk, and the dry  
9           period is not necessarily part of the lactation  
10          cycle. Is that what you're saying?

11          A   That's what I'm saying, yes.

12          Q   And typically is there a point during a  
13          cow's lactation cycle when the cow's milk  
14          production peaks?

15          A   Yes.

16          Q   And do you know when that is?

17          A   I don't know precisely. It's -- when the  
18          calf is born, the milk production goes up, and  
19          then it peaks out, and it slowly goes down. When  
20          exactly that peak is, I am -- I am not sure.

21          Q   So would it be fair to say that a given  
22          lactation cycle for a cow does have a peak milk

1 yield value?

2 A Yes.

3 Q And is it -- would it be your  
4 understanding that the peak milk yield in a given  
5 lactation cycle refers to the amount of milk  
6 produced in the milking session in which the cow  
7 produced the most milk?

8 A Can you rephrase that?

9 Q Yeah. I'm trying --

10 A I'm not sure I understand.

11 Q -- to get an understanding of -- strike  
12 that.

13 So how would you understand the term "peak  
14 milk yield" in a given lactation cycle?

15 A The -- I guess it would be the days at  
16 which the maximum milk production was obtained  
17 from that animal.

18 Q Would the peak milk yield value be the  
19 amount of milk, though, on that particular day?  
20 Is that fair to say?

21 A I believe it would be.

22 Q And would you believe it would be --

1 strike that.

2 I'm just asking this follow-up question  
3 because you referred to the days at which the  
4 maximum milk production was obtained. Would it be  
5 your understanding that if a POSA would refer  
6 to -- I'll strike that.

7 If a POSA referred to a peak milk yield in  
8 a latest lactation cycle, would they be referring  
9 to milk produced in a single milking session or an  
10 entire day?

11 A I am -- I'm really unsure of that. I  
12 would think it would be the entire day of milk  
13 yield, but -- but that's -- that is getting a  
14 little bit past my knowledge of --

15 Q Okay. So from the perspective of a POSA,  
16 though, if a POSA were to refer to a peak milk  
17 yield in a latest lactation, what would you  
18 understand them to be referring to?

19 A I would -- I would think they were  
20 referring to the maximum milk produced in -- in  
21 one day.

22 Q So for a given lactation cycle, there is

1     only one peak milk yield value; is that right?

2           A   I would say that's true, but understand  
3     that milk -- it isn't a very smooth -- I mean, you  
4     represent it as a very smooth curve. But in  
5     reality, it sort of bounces around a little bit,  
6     so you're sort of taking that peak. So that peak  
7     milk yield could occur on more than one day.  
8     That's what I'm saying.

9           Q   Okay. And just to be clear, if a POSA  
10    were asked to provide the peak milk yield from a  
11    latest lactation cycle, they would not, in  
12    response, provide the lowest --

13          A   No.

14          Q   -- peak yield?

15          A   That is -- that is correct. They would  
16    provide the maximum.

17          Q   Let me reask that because I said peak  
18    yield, which suggests a higher number. So let  
19    me -- let me reask that.

20                If a POSA were asked to provide the peak  
21    milk yield from a latest lactation cycle, they  
22    would not, in response, provide the lowest milk

1 production on a given day, right?

2 A They would -- they would provide -- I am  
3 thinking they would provide the maximum milk  
4 production in a single day for a given cow, right.

5 Q So more than likely, they provide a single  
6 number that reflects the day on which the cow  
7 provided the most milk. Is that fair to say?

8 A That is -- that is fair to say. And I  
9 want to quantify that. That's only if they are --  
10 if they have milk sensors that are looking at  
11 every single milk extraction event.

12 If they didn't have the sensors to do  
13 that, it would be that they measured it this  
14 month, and then they measured it this month and  
15 then they measured it this month. So it would  
16 just be one of those month points. And it -- and  
17 what I mean, measurement for a month, it isn't --  
18 it would just be a single day during that month.

19 Q Understood. That's a helpful  
20 clarification. So -- strike that.

21 In either case, if a POSA were asked to  
22 provide the peak milk yield in a latest lactation

1 cycle, they would provide a single number that  
2 reflects the highest milk production, whether it  
3 be on a single day in a given month or on a single  
4 day during the lactation cycle if they had the  
5 ability to -- to quantify that number each day?

6 A That's right.

7 Q Can you think of any usefulness in  
8 recording a cow's peak milk yield from a latest  
9 lactation cycle?

10 A Yes. Why -- are you asking me why a  
11 producer would like that number?

12 Q I can ask that if that -- if that helps  
13 you answer it. But I -- the question I asked --  
14 strike that -- was, can you think of any  
15 usefulness in recording a cow's peak milk yield  
16 from a latest lactation cycle?

17 A Yes, there are -- there are reasons that a  
18 producer -- or that you would want to record that  
19 number.

20 Q What is one reason a producer would like a  
21 peak milk yield value from a latest lactation  
22 cycle?

1           A   It helps them make decisions on which --  
2   there's lots of different reasons, but it gives  
3   them some indication if the animal is one of their  
4   higher producers or their lower producer animals.  
5   If it's one of the lowest producing animals, they  
6   can make -- they can make decisions such as are  
7   they going to cull that animal or are they going  
8   to keep the calf from that -- that animal.

9           Q   And just to clarify, when you said cull,  
10   you were saying cull, c-u-l-l?

11          A   Cull, yeah, yeah.

12          Q   Okay. So let me try to understand what  
13   you said. Strike that.

14                So one reason a producer would like a peak  
15   milk yield value from a latest lactation cycle is  
16   that it could help them identify a lower producing  
17   cow, for example, right?

18          A   For example, yes.

19          Q   And one reason they would -- strike that.

20                One reason a producer would want to  
21   identify a lower producing cow is because they  
22   might want to cull that animal or not keep the

1 calf from that animal; is that correct?

2 A Yeah, that is what I stated.

3 Q And what would be a reason that the  
4 producer would want to identify a higher producing  
5 cow from the peak milk yield in a latest lactation  
6 value?

7 A So it's exactly the opposite. The peak  
8 milk yield, that animal they want to keep in the  
9 herd. And they would -- if it was a heifer calf,  
10 they would want to keep that heifer calf as a  
11 replacement.

12 Q You mentioned there were other reasons a  
13 producer might want the peak milk yield in a  
14 latest lactation value. Can you think of any  
15 other reasons other than what we just discussed?

16 A If they had all of the peak yields, then  
17 they would have an economic performance of  
18 their -- of their farm.

19 Q So the peak yield in a latest lactation  
20 value is considered an economic performance  
21 metric?

22 A I would think it is, yes.

1 Q Are there any other reasons you can think  
2 of that a producer would want the peak milk yield  
3 in a latest lactation value?

4 A I can't think of other reasons. There  
5 might be.

6 Q To your knowledge, would a farmer  
7 prioritize artificially inseminating the high  
8 producing animals over the lower producing animals  
9 even if both animals were in heat?

10 A It really depends on the management  
11 decision of the producer. If they're going to  
12 keep the animal in the herd, they would -- they  
13 would probably breed both animals. If -- if one  
14 of them, they were already planning on culling  
15 that animal at the end of the season, they would  
16 not breed that animal.

17 Q Okay. So if a farmer identified an animal  
18 with a low peak milk yield in a latest lactation  
19 value and chose to cull that animal, they could  
20 use that data point in deciding not to  
21 artificially inseminate that animal. Is that fair  
22 to say?

1           A   That is fair to say.

2           Q   So to shorten that up, it would be fair to  
3   say that peak milk yield in a latest lactation  
4   values can be used in selecting which animal to  
5   inseminate based on that number being low; is that  
6   fair to say?

7           A   Yeah, I think -- so they would only make  
8   that decision not to breed that animal or not to  
9   inseminate that animal if the animal was -- was  
10   not going to maintain its -- be maintained in the  
11   herd.

12          Q   Still talking about artificial  
13   insemination, but I'm going to shift gears just a  
14   bit.

15          A   Okay.

16          Q   In the context of artificial insemination,  
17   are there different types of semen that can be  
18   used to inseminate the cow?

19          A   Are -- now we're transporting ourselves  
20   back to that 2008, 2009, correct? We aren't  
21   talking about current day?

22          Q   I'll reask, then, just so it's clear.

1           A    Okay.

2           Q    In the 2008, 2009 timeframe, in the  
3 context of artificial insemination, were there  
4 different types of semen that would be used for  
5 artificial insemination?

6           A    I'm not sure exactly when all the changes  
7 happened in the dairy industry. So I don't know  
8 exactly that answer for the 2008, 2009 -- you  
9 know, the 2008, 2009 timeframe.

10           There -- there were, of course,  
11 different -- semen from different -- different  
12 bulls that would have probably been higher -- ones  
13 that had the genetic potential to produce higher  
14 producing milk cows, and those might be more  
15 expensive.

16           Q    So, generally, when you're discussing  
17 different types of semen, you're talking about  
18 selecting semen that may come from a higher  
19 producing -- strike that.

20           So when -- generally, when you're  
21 discussing different types of semen, you're  
22 talking about semen where the genetics might lead

1 to a higher producing cow?

2 A In that -- in that timeframe, that 2007,  
3 2008, 2009, I believe that -- that they could then  
4 select different semen coming from different  
5 bulls. Those bulls would then have the genetic  
6 potential to produce different -- or cows that  
7 would have the potential of producing more milk.

8 Q Can you turn to page 23 of your reply  
9 declaration? Are you with me?

10 A I am.

11 Q Okay. In paragraph 25 of your reply  
12 declaration, in the middle of that paragraph, do  
13 you see the sentence that starts with the word  
14 "rather"?

15 A Yes.

16 Q So in paragraph 25 of your declaration,  
17 you say: Rather, what matters is the time series  
18 of measurements for individual animals.

19 Do you see that?

20 A I do.

21 Q What is a time series of measurements?

22 A Time series is measurements of the same

1 parameter over -- over time; for example, body  
2 temperature measured every 10 minutes or every one  
3 minute. And that -- all of those measurements  
4 together would be a time series.

5 Q So in a time series of measurements, are  
6 the measurements taken each day at the exact same  
7 time of day?

8 A So it depends on the system, but it would  
9 be -- yes, if it's a one minute time series, it  
10 would be taken every one minute throughout the  
11 24-hour time period for the life of the animal.

12 Q So does the time series refer to the  
13 24-hour period --

14 A Time --

15 Q -- in that example?

16 A Sorry. Time series is -- yeah, time  
17 series -- a time series is a type of data that is  
18 collected on a regular interval.

19 Q Could you go back to the previous page,  
20 looking at paragraph 24 of your reply declaration?  
21 Are you with me?

22 A Yes, I am.

1           Q   And in paragraph 24 of your reply  
2   declaration, you state that: Retrieving  
3   information from the device itself ensures that  
4   the temperature data is accurately recorded at the  
5   moment it is taken as opposed to when it was  
6   reported, providing precise and reliable health  
7   monitoring for the cows.

8           Do you see that?

9           A   I do.

10          Q   And when you say, as opposed to when it  
11   was reported, are you referring to a system that  
12   retrieves information on an RFID reader?

13          A   Not necessarily. It could be. An RFID  
14   reader would be one -- one type of data.

15          Q   Okay. So does an RFID reader record time  
16   when it was reported as opposed to the moment it  
17   is taken? Is that your understanding?

18          A   Can you reask that? I'm sorry.

19          Q   I guess I'm trying to understand what you  
20   mean by "as opposed to when it was reported" in  
21   your declaration. So maybe you'd help me out with  
22   what you meant by that. Strike that.

1           In paragraph 24 of your reply declaration,  
2   what did you mean by "as opposed to when it was  
3   reported"?

4           A   Well, there's -- there's two ways that --  
5   so in this paragraph, we're really talking about,  
6   let's say, body temperature, right? And there are  
7   two ways that a system can -- can record that  
8   information. It can record it on the bolus itself  
9   and then -- then transfer it, or it can -- it can  
10   then shift -- or it can send that data on a  
11   continuous basis to a recorder, both which of have  
12   to have a timestamp associated with it.

13          Q   So what did you mean, as opposed to when  
14   it was reported?

15          A   So you need to know exactly when that --  
16   it's helpful if you know exactly when the data was  
17   recorded. So if you were -- when it was  
18   transferred, it could be transferred for, like,  
19   the last hour, every minute for the last hour, or  
20   it could be brought over as a chunk of data for  
21   the last hour. Does that make sense?

22          Q   So looking at paragraph 24, when you state

1     that retrieving information from the device itself  
2     ensures that the temperature data is accurately  
3     recorded at the moment it is taken, does that mean  
4     that if you retrieve information from the RFID  
5     reader, the temperature data is not accurately  
6     recorded at the moment it is taken?

7           A   It depends. So what this is referring to  
8     is where the timestamp is applied. Is the  
9     timestamp applied at the RFID reader, or is it  
10    applied on the device itself? Both are legitimate  
11    ways to record date/time, but it has to be -- you  
12    have to have an accurate time point, right, with  
13    the data.

14          Q   If you're using a system that provides the  
15    timestamp at the RFID reader, are you able to  
16    ensure that the temperature data is accurately  
17    recorded at the moment it is taken?

18          A   So -- so there's two different systems,  
19    right, one of which the data is recorded on the  
20    bolus, right? And as the animal goes across or  
21    goes by the reader, the data is then transferred  
22    over.

1           The other one is the -- the bolus or  
2           the -- with the RFID, is sending the data out, and  
3           it's -- it's coded with a number already. It is  
4           intercepted by an antenna and then recorded in the  
5           database. And then that -- that timestamp is  
6           recorded by the system itself, and both are  
7           legitimate.

8           Q   Okay. So specifically asking about the  
9           system that uses RFID reader to provide the  
10          timestamp here, okay?

11          A   Okay. The one that's recorded on the  
12          bolus and then transferred as a -- as a group.

13          Q   I'm asking about a system that provides a  
14          timestamp at the RFID reader, not the device. Do  
15          you follow?

16          A   No. So one system has a lot more power  
17          coming out of the animal, and the -- that data,  
18          the temperature data, has a -- has a number which  
19          is probably the RFID number or it could be the  
20          bolus number. And that is sent directly to the  
21          reader on a every 10 minute or every hour or  
22          whatever -- whatever the producer and the company

1 wants.

2 Q Are you familiar with systems that provide  
3 a timestamp using the RFID reader?

4 A I would guess that that is what you mean  
5 when you say that. The other one is the -- the  
6 information is stored on the bolus. As they walk  
7 by a reader, then all the data is transferred.

8 Q So going back to paragraph 23 of your  
9 reply declaration.

10 A Yes.

11 Q You state: In my deposition I testified  
12 that there were reasons one would want to retrieve  
13 date/time information from an RFID device at the  
14 reader.

15 Do you see that?

16 A Yes.

17 Q And --

18 A Wait just a minute. What is -- there are  
19 reasons that you would want the date/time on the  
20 device itself, not that -- not that statement.  
21 It's the first sentence.

22 Q The first part of that sentence.

1           A    I testified that there are reasons one  
2 would like to retrieve the date/time from the RFID  
3 device at the reader, yes.

4           Q    Do you agree that at your previous  
5 deposition you testified to that?

6           A    Yeah. And that would be -- that would be  
7 the one that it's sending the information from the  
8 cow to the reader on a continuous basis.

9           Q    And then when you say one would want to  
10 retrieve the information from the device itself,  
11 what are you referring to?

12          A    That would be if the animal is walking by  
13 and dumping a set of data, then you would need a  
14 timestamp or at least -- yeah, a timestamp so you  
15 know when -- when that data was collected.

16          Q    Okay. So I'm asking about that first  
17 system.

18          A    Yeah. Okay.

19          Q    So let me just reask the question. Strike  
20 that.

21                In paragraph 23 of your reply declaration,  
22 you state: In my deposition I testified that

1       there were reasons one would want to retrieve  
2       date/time information from an RFID device at the  
3       reader.

4               Do you see that?

5               A    I do.

6               Q    In that system, is one able to ensure that  
7       the temperature data is accurately recorded at the  
8       moment it is taken?

9               A    Within reason, yes.

10              Q    Okay. And then paragraph 24 of your  
11       declaration, you state: Retrieving date/time  
12       information from the device allows multiple  
13       measurements to be taken and stored in the device  
14       and then collectively transmitted to the reader.

15              Do you see that?

16              A    Yeah. Yes, I do. Sorry.

17              Q    In the system that provides date/time  
18       information at the reader, are you able to do  
19       that?

20              A    So -- so the one that doesn't store the  
21       data on the device and is shifting the data out on  
22       a regular basis, the date/time is then recorded at

1 the -- on the system, not on the device. So, yes,  
2 you have date/time information or a timestamp with  
3 every body temperature -- body temperature  
4 reading.

5 Q And that body temperature reading can only  
6 be taken when the animal is close enough to the  
7 RFID reader for the data to be transmitted, right?

8 A There -- like I said, there are two  
9 different systems, one of which the data's stored  
10 on the device, and you have to be close enough to  
11 an RFID reader. The other one sends data out, and  
12 you have antennas that are around the system. So  
13 you don't have to be that close to a reader. You  
14 can be, I don't know, in a paddock and get that  
15 information.

16 MR. CURTIS: Counsel, we've going for a  
17 little more an hour. Maybe at the next natural  
18 shift, do you want to take a break?

19 MR. LANDERS: Sure. Should be pretty  
20 close to a shift.

21 Q So earlier we discussed the time series of  
22 measurements. Do you recall that?

1           A    I do.

2           Q    Does collecting a time series of  
3 measurements require the temperature to be taken  
4 at the same time from one day to the next?

5           A    The -- as I testified earlier, the time  
6 series is that it's taken on a regular basis.  So,  
7 generally, it would be every -- say, every 10  
8 minutes, so at 10:00 o'clock, 10:10, 10:20, 10:30.  
9 So it would be that the device is sending data or  
10 collecting data at those same intervals throughout  
11 multiple days.

12           MR. LANDERS:  I think this is probably a  
13 good time for a break.

14           (Recess, 10:03 to 10:22 p.m.)

15           Q    Welcome back, Dr. Brown-Brandl.  Did you  
16 discuss the substance of the deposition with your  
17 attorney during the break?

18           A    We did not.

19           Q    Okay.  I just have a few follow-up  
20 questions on the discussion of time series.

21           A    Okay.

22           Q    And then we can move on to the next topic.

1           So if a POSA refers to an average of a  
2 time series of measurements, what is she referring  
3 to?

4           A   An average would be the mean where you add  
5 up all the numbers, and then you divide by the  
6 total number of numbers in that series, right.

7           Q   And so is an average -- strike that.

8           Using temperature as an example, is -- an  
9 average of a time series of temperature  
10 measurements, would that refer to the average at a  
11 specific time of day?

12          A   It depends on how you are taking your  
13 average. If you averaged from 9 to 10, it would  
14 be the average temperature from 9 to 10, yes.

15          Q   So if a POSA referred to an average of a  
16 time series from 9:00 to 10:00, it would not be  
17 referring to an average temperature every day at  
18 9:00, for example?

19          A   If the average was taken from 9:00 to  
20 10:00, you would report that as the average  
21 temperature between 9:00 and 10:00.

22          Q   So I'm just trying to understand this

1 better. Strike that.

2 So an average of a time series of  
3 measurements would be a single value that reflects  
4 the average of all the measurements during the  
5 time series. Is that fair to say?

6 A During -- yeah, during a particular time  
7 block, yes.

8 Q And when you say time block, are you  
9 referring to a span of time during which  
10 measurements are taken?

11 A Yes, yes. So you could take an average  
12 over a 24-hour period or over a 15-minute period  
13 or over an hour period. All of those are  
14 legitimate.

15 Q And if you were taking an average of a  
16 time series of measurements over the course of a  
17 month, what would you understand that to be  
18 referring to?

19 A I would guess that would be the average  
20 temperature for all the points taken during that  
21 entire month. So for the month of April, it would  
22 be all the data collected during that month.

1 Q And you would not exclude any data points,  
2 for example?

3 A Well, now you're referring to filtering,  
4 and that's -- that's different. You can filter  
5 the data before you take an average, but that  
6 would be another step in the process.

7 Q So without filtering, you would understand  
8 an average of a time series of measurements over  
9 the course of a month to be referring to an  
10 average of all the data points taken during the  
11 month; is that correct?

12 A That is correct.

13 Q And would that understanding apply if the  
14 data being measured was the temperature of a dairy  
15 cow?

16 A So can you -- can you rephrase that just  
17 to make sure I'm understanding what you're asking?

18 Q Right. So I didn't specify any particular  
19 measurement in my question. I said that you would  
20 understand an average of a time series of  
21 measurements over the course of a month would be  
22 referring to an average of all the data points

1 taken during the month. And you said that is  
2 correct. Does that sound right?

3 A Yes, that is correct.

4 Q And would that understanding apply if the  
5 particular measurement that they were talking  
6 about was the temperature of a dairy cow?

7 A If you were taking just a strict average  
8 over an entire month of body temperature, that  
9 would be correct, right. You would use all the  
10 data in that average unless you stated that you  
11 were filtering out readings for certain reasons.

12 Q But a POSA would understand the term  
13 "average of a time series of measurements" to be  
14 referring to all the data points without  
15 filtering, right?

16 A Yes.

17 Q Can you turn to page 19 of your reply  
18 declaration? Just let me know when you're there.

19 A Yes, I am here.

20 Q Let me just clarify something for the  
21 record on the last question, because, again, I  
22 didn't specify any particular measurement.

1           So I asked, a POSA would understand the  
2     term "average of a time series of measurements" to  
3     be referring to all the data points without  
4     filtering. And you said yes. Would that  
5     understanding apply if the particular measurement  
6     was temperature of a dairy cow?

7           A   If -- if it just said -- if the statement  
8     was the average body temperature over an entire  
9     month, that would be true. Body temperature taken  
10    over an entire month in a room -- from a room and  
11    bolus, you would never do that. You would never  
12    take an average for an entire month. That  
13    wouldn't mean anything. You would have to filter  
14    it.

15          Q   All right. So page 19 of your reply  
16    declaration, are you there?

17          A   Yes.

18          Q   Okay. You state in paragraph 20 of your  
19    reply declaration: It was foundational knowledge  
20    in the art.

21               Do you see that?

22          A   Yes.

1 Q What is the art?

2 A I'm -- I have to read this paragraph. Oh,  
3 it's foundational knowledge. I would guess that  
4 meant that's referring to statistics or model  
5 creation.

6 Q Are you saying you're guessing as to what  
7 you meant in your declaration?

8 A No, I'm sorry. This -- this refers to,  
9 like, the statistical knowledge of building a  
10 model.

11 Q And so when you say the art, you are  
12 referring to the art of statistical knowledge of  
13 building a model?

14 A Yes.

15 Q And that's paragraph 20 of your reply  
16 declaration, right?

17 A Yes.

18 Q And just to make sure we're talking about  
19 the same thing here, if you could pull out your  
20 '515 reply declaration, and I just want to confirm  
21 that paragraph 33 of your '515 reply declaration  
22 is substantively the same as paragraph 20 of your

1 '206 declaration to save me the trouble of asking  
2 the same questions twice.

3 A Let me review this quickly.

4 Q Sure.

5 A (Reviewing document.) Yes.

6 Q So just for the record, paragraph 20 of  
7 your '206 rely declaration is substantively  
8 identical to paragraph 33 of your '515 reply  
9 declaration?

10 A It is.

11 Q Okay. Thank you. I'm going to ask the  
12 court reporter to hand you what has already been  
13 marked as Exhibit 1039 in the 875 proceeding.

14 (Exhibit 1039 discussed.)

15 Q This is an article with an author named  
16 Bagley, among other authors?

17 A Yes.

18 Q I'm also going to ask the court reporter  
19 to hand you Exhibit 1058.

20 (Exhibit 1058 marked.)

21 Q And this is from the 885 proceeding. And  
22 if you could, just to confirm, again, to save

1 time, that Exhibit 1039 from the 88 -- strike  
2 that.

3 If you could just confirm Exhibit 1039  
4 from the 875 proceeding is the same Bagley  
5 reference that is marked as Exhibit 1058 in the  
6 885 proceeding.

7 A It is. It is the same, yes.

8 Q Okay. I'm going to ask about Exhibit 1039  
9 with the understanding that I'm talking about the  
10 same Bagley in both proceedings.

11 A Okay.

12 Q I think this is the only exhibit that had  
13 the different number, but I wanted to make the  
14 record clear on that.

15 And earlier in the deposition, if you  
16 recall saying that you selected some references,  
17 and some references were provided by counsel.  
18 Would Bagley be a reference that was provided by  
19 you or counsel?

20 A Counsel provided this reference.

21 Q And are you familiar with this -- with  
22 this reference?

1           A    I have reviewed this reference, yes.

2           Q    Okay.  And Bagley involves linear  
3 regression modeling, right?

4           A    Bagley involves logistical regression.

5           Q    Right.  So Bagley involves logistic  
6 regression; is that correct?

7           A    That is correct.

8           Q    And do you consider Bagley a reliable  
9 source of information?

10          A    I would -- yes.  This is a -- this is a  
11 good journal.  I would provide -- I would say that  
12 this is a -- this is a good reference, yes.

13          Q    And do you have any reason to doubt any  
14 statements made in the Bagley reference?

15          A    I don't.

16          Q    So looking at paragraph 20 of your '206  
17 reply declaration, you quote Bagley as saying:  
18 For a given set of data, introducing more  
19 variables will generally produce a model better  
20 fit to the data.

21                Do you see that?

22          A    I do.

1           Q   Are you familiar with the concept of  
2   overfitting of data?

3           A   I am.

4           Q   And is overfitting something that is  
5   desirable in creating a model?

6           A   No, it is not.

7           Q   So would it be fair to say that  
8   overfitting is bad?

9           A   Overfitting makes a model that is harder  
10   to apply to other sets of data, yes.

11          Q   So overfitting is not something you would  
12   want in a model. Is that fair to say?

13          A   That is fair to say.

14          Q   In some instances, adding variables to a  
15   model can create overfitting; is that correct?

16          A   That is correct.

17          Q   You can set Bagley to the side. One more  
18   question on Bagley. Overfitting can occur in a  
19   logistic regression model. Is that fair to say?

20          A   Yeah. Overfitting can occur in most  
21   models, yeah.

22          Q   Okay. I'm going to ask the court reporter

1 to hand you Exhibit 1040.

2 (Exhibit 1040 discussed.)

3 Q And this is a reference where the first  
4 named author is Neter. Do you see that?

5 A Yes.

6 Q And was this reference provided by you or  
7 by counsel?

8 A I believe counsel provided this one as  
9 well.

10 Q And did you review this reference?

11 A I did.

12 Q And Exhibit 1040, Neter, is an excerpt  
13 from a book, right?

14 A It is.

15 Q And Exhibit 1040 is not a complete book,  
16 is it?

17 A No.

18 Q In particular, if you turn to page 217 of  
19 the book, which is page 3 of the exhibit, it  
20 indicates that Exhibit 1040 specifically comes  
21 from Chapter 6 of the Neter book; is that fair?

22 A That is fair.

1           Q   And would you agree that Exhibit 40 does  
2   not contain the entirety of Chapter 6?

3           A   It does not.

4           Q   And do you have any idea why the entirety  
5   of Chapter 6 was not provided?

6           A   I think the summary on the first page  
7   provides the evidence that we -- that -- that  
8   backs up the claim that multiple regression models  
9   are -- can fit data better than just a simple -- a  
10   simple regression or a simple linear regression.

11          Q   Just going over to paragraph 20 of your  
12   '206 reply declaration, are you with me?

13          A   Page 20?

14          Q   Page 20.

15          A   Yes.

16          Q   It's also paragraph 20, but, yeah, let's  
17   look at page 20 of your rely declaration. Are you  
18   with me?

19          A   Okay. Yes.

20          Q   So on page 20 of your reply declaration  
21   you provide a quote from Neter that includes some  
22   ellipses. Do you see that?

1           A    I don't know what you mean by ellipses.

2   Do you mean the brackets?

3           Q    No.  On the second bracket there's an  
4   ellipses before it.  Do you see that?

5           A    I'm sorry, I don't know what you mean by  
6   ellipses.

7           Q    There's periods before --

8           A    Okay.  Sorry, I didn't know that's what  
9   that was called.  Yeah.

10          Q    That's at least my understanding an  
11   ellipses, so apologies.  Yeah.  Just to clarify,  
12   on page 20 of your '206 rely declaration, you have  
13   a quote from Neter, right?

14          A    Yes, I do.

15          Q    Okay.  And you modified that quote, right?

16          A    Well, I didn't modify it.  There was a  
17   section left out.

18          Q    So in your quote of Neter on page 20 of  
19   your '206 reply declaration, you left out part of  
20   the quote.  Is that fair to say?

21          A    Yeah.

22          Q    Okay.  And earlier you testified that you

1 didn't provide the entirety of Chapter 6 because  
2 the summary on the first page provided the  
3 evidence that you needed. Is that --

4 A That is what I -- yes, that's -- that's  
5 my -- that's my belief, yes.

6 Q But your quote on page 20 of your '206  
7 reply declaration is not from the summary, is it?

8 A Well, it's not the summary. It's the  
9 first paragraph, yeah.

10 Q Right. But the first paragraph is not  
11 part of the summary, right?

12 MR. CURTIS: Objection, form.

13 A Yeah. I misspoke, I'm -- I apologize.

14 This -- this first paragraph is sort of an  
15 introduction to the chapter, not a summary of the  
16 chapter.

17 Q And so just to be clear, on page 20 of the  
18 '206 reply declaration, you quote a portion of  
19 Chapter 6 of Neter, right?

20 A Yes.

21 Q And underneath Chapter 6, it looks like  
22 there's a subchapter called 6.1, Multiple

1 Regression Models.

2 Do you see that?

3 A Yes.

4 Q And then below that, it looks like a  
5 subtitle, Need for Several Predictor Variables.

6 Do you see that?

7 A Yes.

8 Q And the portion of Neter that you quoted  
9 comes from the Subchapter 6.1, right?

10 A Yes, it does.

11 Q And Exhibit 1040 that you relied on does  
12 not include the entirety of Chapter 6.1, does it?

13 A No, it does not.

14 Q And looking down at the bottom of page 217  
15 of Neter, the exhibit ends with the word  
16 "experimental." Do you see that?

17 A Yes.

18 Q So you would understand that this sentence  
19 on page 217 of Neter would continue on to the next  
20 page, right?

21 A Yes.

22 Q But the remainder of that sentence was not

1 included with Exhibit 1040, was it?

2 A It was not.

3 Q And so basically, the Neter Exhibit 1040  
4 cuts off mid-sentence. Is that fair to say?

5 A That is fair to say.

6 Q I mentioned earlier Subchapter 6.1 is  
7 titled Multiple Regression Models, right?

8 A Yes.

9 Q And Exhibit 1040 doesn't contain Neter's  
10 entire chapter of multiple regression models, does  
11 it?

12 A It does not.

13 Q So it's possible that on page 218 and  
14 beyond in Neter, you could potentially list  
15 reasons why you would not want to add variables to  
16 a regression model, right?

17 MR. CURTIS: Objection, form.

18 A It's possible. This comes from a  
19 textbook, and obviously there are pluses and  
20 minuses to those things. Generally, as it says,  
21 multiple -- multiple regression is a common  
22 practice. And this -- this comes from a textbook,

1 and it explains how to do it and why you would  
2 want to.

3 Q And you stated there are pluses and  
4 minuses to those things. And what you meant by  
5 that there is pluses and minuses to adding  
6 variables to regression model. Is that fair to  
7 say?

8 A That is -- that is fair to say. I mean,  
9 when you are modeling, you need to be careful. A  
10 lot of -- but it -- you can't just add all  
11 variables to a model and expect it to be the best  
12 model ever. You really have to pick and choose  
13 which components and how to put them in the model.

14 Q So relying on multiple additional  
15 variables is not always a better -- strike that.

16 Adding variables to a model does not  
17 always provide better predictions. Is that fair  
18 to say?

19 A Adding -- just adding a whole bunch of  
20 variables to a model doesn't -- will not always  
21 give you a better result. That is true.

22 Q So I'm just following up because you said

1 a whole bunch of, so I just want to clarify.

2 Strike that.

3 Adding variables to a model, whether it's  
4 a whole bunch or even a few or less, does not  
5 always provide better predictions. Is that fair  
6 to say?

7 A So when you build a model, you have to be  
8 really careful to select variables that are  
9 independent and that you believe -- or a POSA  
10 would believe would impact what you're trying to  
11 model.

12 So selecting those -- those variables and  
13 then doing statistical tests to make sure that  
14 they're really impacting your variable of interest  
15 are some of the needed steps.

16 Q Okay. You can set Exhibit 1040 to the  
17 side.

18 Dr. Brown-Brandl, I've asked the court  
19 reporter to hand you what has been already marked  
20 in these proceedings as Exhibit 1041.

21 (Exhibit 1041 discussed.)

22 Q And it's from a book titled Multivariate

1 Data Analysis authored by Hair and others. Do you  
2 have that before you?

3 A I do.

4 Q Do you recognize this document?

5 A I do.

6 Q And was this document provided by you or  
7 counsel?

8 A Counsel did provide this one as well.

9 Q And Exhibit 1041 is an excerpt, right?

10 A It.

11 Q It is not a complete book, right?

12 A It is not a complete book.

13 Q And in paragraph 20 -- strike that.

14 On page 20 of your '206 reply declaration,  
15 you provide a quotation from Hair; is that fair to  
16 say?

17 A I do.

18 Q And specifically, you quote from what  
19 appears to be a chapter in Hair called Stage 3  
20 Assumptions in Multiple Regression Analysis.

21 Do you see that?

22 A Yes.

1           Q   So the fact that the chapter is called  
2   Stage 3, would that lead you to believe that  
3   there's a Stage 1 and Stage 2 chapter?

4           A   Yes, I would believe that is true.

5           Q   Does Exhibit 1041 include any substance  
6   from the Stage 1 and Stage 2 chapters?

7           A   Well, if you look at the -- I don't  
8   know -- the first paragraph after the italicized,  
9   it -- it talks about Chapter 2 examined the  
10   available methods of assessing the assumptions of  
11   individual variables.

12          Q   Okay. And is Chapter 2 that you just  
13   referred to included in Exhibit 1041?

14          A   It is not.

15          Q   There could be a Stage 4 chapter, right?

16          A   There -- there could be, yes.

17          Q   But you're not aware of a Stage 4 chapter  
18   in Hair?

19          A   I did not review that part.

20          Q   And then if you look at page 172 of Hair,  
21   which is page 3 of the exhibit, do you see that  
22   the last word at the bottom of page 172 is resid

1 with a hyphen?

2 A Yes.

3 Q So would you agree that the last sentence  
4 of Hair is not a complete sentence?

5 A It is not a complete sentence.

6 Q So would it be fair to say the Hair  
7 exhibit cuts off mid-word and mid-sentence?

8 A It does.

9 Q And are you aware of what page 173 of Hair  
10 says?

11 A I did not review 173.

12 Q And do you see below the title Stage 3  
13 there's italicized language: Assessing individual  
14 variables versus the variant?

15 I think you referred to that earlier.

16 A Yes.

17 Q And Exhibit 1041 does not contain Hair's  
18 entire subchapter on assessing individual  
19 variables versus the variant, does it?

20 A It does not.

21 Q So you'd assume that page 173 and beyond  
22 includes additional information on Stage 3 as well

1 as assessing individual variables versus the  
2 variant?

3 A Yeah. Once again, this is a textbook, so  
4 my -- I'm guessing that past this, it would show  
5 how you apply it, how you test, how you do a  
6 statistical test.

7 Q And, again, it's possible that Hair, on  
8 page 73 and beyond, could provide some downsides  
9 to using multiple variables in a regression  
10 analysis?

11 MR. CURTIS: Objection, form.

12 A I haven't reviewed that. My -- but as a  
13 textbook, it's going to show you how you know  
14 whether a variable should be added or -- or should  
15 not or why it would not be advantageous to add  
16 that variable.

17 Q So in some instances it would be not  
18 advantageous to add a variable to a regression  
19 model?

20 A Right. If it wasn't statistically  
21 significant, then it isn't advantageous to add  
22 that variable.

1           Q   Okay. And then looking at page 172 of  
2   Hair, do you see that? Sorry. On page 172 of  
3   Hair at the top, there's a portion of what appears  
4   to be the previous chapter. Do you see that?

5           A   Yes.

6           Q   It starts with the word "without," but  
7   it's unclear what it says before that, right?

8           A   It is unclear, yes.

9           Q   In that top portion of page 172, it refers  
10   to little or no generalizability. Do you see  
11   that?

12          A   Yes.

13          Q   Do you know what generalizability is?

14          A   Without reviewing the previous page, I am  
15   uncertain what that is referring to.

16          Q   So you would need the full context of Hair  
17   to understand what he's discussing in this  
18   passage, right?

19          A   At least I would need the page before,  
20   yes.

21               MR. LANDERS: I'm going to switch gears.

22   I don't know how long we've been going, but --

1 MR. CURTIS: I think we've only been going  
2 for 35 minutes.

3 MR. LANDERS: Keep going? Okay.

4 MR. CURTIS: Unless either of you'd like a  
5 break.

6 THE WITNESS: I don't need one.

7 MR. LANDERS: We'll keep going. Cool.

8 Q Let's stick with your '206 reply  
9 declaration, page 7. Let me know when you're  
10 there.

11 A Okay. I am here.

12 Q And, actually, just to streamline things,  
13 if you could, take a look at your '515 reply  
14 declaration and also turn to page 7. If you could  
15 just confirm that -- I understand you're sitting  
16 here, but to the best of your knowledge,  
17 paragraphs 5 through 17 of the '206 reply  
18 declaration are substantively the same as the same  
19 paragraphs in the '515 reply declaration?

20 A Paragraphs 5 -- what --

21 Q I just want to confirm that paragraphs 5  
22 through 17 in both the '515 and '206 reply

1 declarations are substantively the same.

2 A Yes, they are. They are substantively the  
3 same.

4 Q Okay. So I'll ask about -- strike that.

5 When I refer to paragraphs in the next  
6 series of questions, they should apply to both  
7 declarations, but if for some reason you think  
8 there's something that might apply to one patent,  
9 but not the other, let me know.

10 A Okay.

11 Q So on page 7 of your reply declaration,  
12 starting with paragraph 6, let me know when you're  
13 there.

14 A I'm here.

15 Q Okay. So at the bottom of page 7 of your  
16 reply declaration, you have a sentence that starts  
17 with: Date limited searches.

18 Do you see that?

19 A Yes.

20 Q Okay. And you state that: Date limited  
21 searches run on Google today are not an accurate  
22 representation of what a Google search would or

1 would not have located if performed during the  
2 actual date limited time period.

3 Do you see that?

4 A Yes.

5 Q And who told you that?

6 A Well, we worked on -- I think that's my  
7 general knowledge, but we also -- counsel and I  
8 worked together to reperform Ms. Knoff's searches  
9 on Google, and we found irregularities.

10 Q And so just to be clear, your opinion  
11 about date limited searches expressed in paragraph  
12 6 are based on your testimony in paragraphs 7  
13 through 10?

14 A Yes.

15 Q Did you speak with any librarians or  
16 Google experts about this conclusion that you  
17 drew?

18 A I did not.

19 Q And you mentioned some irregularities.  
20 Did you talk to any librarian or Google search  
21 expert about why these irregularities might have  
22 turned up?

1           A    I did not.

2           Q    So flipping to paragraph 7 which is on  
3 page 8 of your declaration, you mention that you  
4 performed some of the same searches performed by  
5 Ms. Knoff, right?

6           A    Yes.

7           Q    And in Footnote 1, you mentioned that you  
8 turned incognito mode on for these searches so my  
9 prior search history would not affect the results,  
10 right?

11          A    That is -- that is true.

12          Q    And how do you know that turning on  
13 incognito mode doesn't affect your searches?

14          A    Based on, I guess, things I have read on  
15 the internet and -- you turn on incognito mode if  
16 you -- if you -- if you don't want it to look at  
17 your cookie history.

18          Q    And did you speak with any Google expert  
19 or librarian about how incognito mode actually  
20 functions with respect to how it affects search  
21 results?

22          A    I did not.

1           Q   And when you say that you ran some of the  
2   same searches performed by Ms. Knoff, what do you  
3   mean by that?

4           A   We looked at her -- her deposition, took  
5   exactly the words and the -- in the order that was  
6   reported, put those exactly into Google, and then  
7   did a date limited search, yes, exactly as she  
8   reported.

9           Q   And in total, you performed two date  
10  limited searches on Google, right?

11          A   Yes.

12          Q   And those two date limited searches that  
13  you performed on Google are described in  
14  paragraphs 8 and 9, correct?

15          A   Yes.

16          Q   And so you'll understand when I refer --  
17  what I mean if I refer to the paragraph 8 search,  
18  just to kind of --

19          A   Yes. Yes, I do.

20          Q   -- compartmentalize this. Okay. So your  
21  search described in paragraph 8 was limited to a  
22  date range between January 1st, 2006 and September

1 15th, 2009, right?

2 A Yes, it was.

3 Q And it's your understanding that -- strike  
4 that.

5 It's your understanding that September  
6 15th, 2009 is the date of the '515 and '206  
7 inventions, right?

8 A Yeah. We used that date because that is  
9 what she reported.

10 Q Okay. So you based your dates on the  
11 dates that Ms. Knoff used?

12 A Yes.

13 Q Okay. And in your paragraph 8 search that  
14 was based on Ms. Knoff's search, Google returned  
15 383 results, right?

16 A Yeah, that's -- yes, that is what it  
17 reported.

18 Q And did you review all 383 results from  
19 your paragraph 8 search?

20 A I did not. I reviewed many pages.

21 Q And in your review of the pages of your  
22 paragraph 8 result, you didn't locate Trevarthen,

1 did you?

2 A I did not. Like I said, I didn't go  
3 through all of the pages. I went through several  
4 pages, but I did not.

5 Q So in your paragraph 8 search, you did not  
6 locate Trevarthen, right?

7 A Like I said, we didn't go through every  
8 page, but in the pages we did not find Trevarthen.

9 Q And in paragraph 8 you state that: Papers  
10 from 2015 and later appeared in searches that were  
11 date limited before 2009. Right?

12 A Yes.

13 Q So in your view, Google added a paper from  
14 outside the date limited range?

15 A It -- yes, yes.

16 Q But you haven't seen any evidence that  
17 Google's date limited search would omit papers  
18 that were locatable within the timeframe, right?

19 A With these irregularities that we found,  
20 it is hard to know if it -- if it eliminated stuff  
21 or just added stuff. It's -- it's really hard to  
22 know.

1           Q   Have you seen any evidence suggesting that  
2   Google removes or omits papers that were locatable  
3   within a selected date range in a date limited  
4   search?

5           A   I'm not sure how you would verify that  
6   it's -- that it's eliminating information.

7           Q   Did you try to verify that it was  
8   eliminating information?

9           A   I'm not sure even how to go about that,  
10   because you can't -- we don't have a date -- a  
11   search from that time period to -- to compare and  
12   contrast with today, right? We can only do the --  
13   the search today and get the results that we get,  
14   but we can't really compare it with what -- what  
15   was on there before.

16          Q   And in your paragraph 8 search you found a  
17   paper with the number 2022 next to the title,  
18   right?

19          A   Yes.

20          Q   And I'm on page 9 of your '206  
21   declaration. You annotated a screenshot showing  
22   your date limited search results, right?

1 A Yes.

2 Q And you added a red box around an article  
3 that starts with the word "non-invasive," right?

4 A Yes.

5 Q And when you testified that your date  
6 limited search turned up an article from 2022,  
7 you're basing it on that number, on that -- in  
8 that red box, right?

9 A Yeah. I actually opened that paper and --  
10 and looked at that paper, and it was from 2022.

11 Q Are you aware that sometimes Google  
12 shows -- strike that.

13 Do you know that in some cases, the date  
14 listed in a Google search result is the date that  
15 a paper was significantly updated?

16 A A paper or a web page?

17 Q Strike that.

18 Are you aware that in some cases, the date  
19 Google provides in a search result is based on  
20 when the web page was significantly updated?

21 A Yes, that is true.

22 Q So are you aware that the date shown from

1 web -- a web page in Google search results might  
2 be the date that that web page was significantly  
3 updated as opposed to when it was uploaded and  
4 accessible in Google?

5 A Can you repeat that, just -- just for my  
6 clarity?

7 Q Yeah. So are you aware that the date  
8 shown for a web page in a Google search result  
9 could be the date that the web page was  
10 significantly updated as opposed to when it was  
11 uploaded and accessible in a Google search result?

12 A So can you give me an example? So, like,  
13 this Michigan State University paper that was  
14 Radio Frequency Identification Air Tag  
15 Applications, July 17th, 2006, can you -- can you  
16 rephrase your question and include this so -- just  
17 to make sure that I'm understanding you?

18 Q In your example, it's possible that the  
19 July 17th, 2006 date is the date of a significant  
20 update as opposed to the date that, for example,  
21 the reference was made accessible in Google?

22 A Yes. That -- I know that sometimes Google

1 does that, yeah.

2 Q So sometimes the date provided in a Google  
3 search result is the date that it was  
4 significantly updated and not the date that it was  
5 made accessible in a Google search result, right?

6 A That is true. However, this next paper,  
7 the one that's highlighted, was actually  
8 published -- if you pull this paper up, it was  
9 actually published in 2022. So it was not  
10 available because that paper wasn't published in  
11 the date range provided.

12 Q I'm still on page 9 of your declaration.

13 A Okay.

14 Q Do you see the search result that starts  
15 with "guidelines"?

16 A Yes.

17 Q And would you agree that it looks like  
18 that guidelines search result is a PDF?

19 A Yes. I believe that goes to the line up  
20 above, the National Institute of Standards of  
21 Technology, and that is a PDF.

22 Q And does the guidelines search result on

1 page 9 of your declaration indicate a date?

2 A It does not indicate a date.

3 Q So would you agree that an article with no  
4 date listed in the search results could be  
5 returned in a date limited search if you use the  
6 correct keywords?

7 A I am -- I'm not sure. Obviously, it -- it  
8 does in this case, but I'm not sure exactly how  
9 Google works.

10 Q So you're not sure exactly how Google  
11 works?

12 A Right. I mean, we just were reproducing  
13 Ms. Knoff's search.

14 Q Now moving to paragraph 9 of your  
15 declaration on page 10, let me know when you're  
16 there, please.

17 A I am here.

18 Q So paragraph 9 describes your second date  
19 limited Google search, right?

20 A It does.

21 Q And your paragraph 9 search was also  
22 limited to between January 1st, 2006 and September

1 15th, 2009, right?

2 A Yes.

3 Q And your paragraph 9 search turned up 115  
4 results, right?

5 A Yes.

6 Q And in your review of the results of your  
7 paragraph 9 search, you didn't locate Trevarthen,  
8 right?

9 A I didn't go through all the pages, but I  
10 did not see Trevarthen.

11 Q So in your two date limited Google  
12 searches that were limited to between 2006 and  
13 2009, you didn't locate Trevarthen, right?

14 A I did not. However, if I was looking  
15 for -- for articles, like, scientific articles, I  
16 wouldn't do a Google search. I would do a Google  
17 Scholar search.

18 MR. LANDERS: I'll object as  
19 nonresponsive.

20 Q So let's turn to page 12 of your reply  
21 declaration.

22 A Okay.

1           Q   And there's a sentence that starts with  
2    "if it presents." Do you see that in paragraph  
3    10?

4           A   I do.

5           Q   And in paragraph 10 of your reply  
6    declaration, you state that: If it presents a  
7    paper from 2022 as being from between 2006 and  
8    2009, Google could have just -- strike that. I  
9    think this might be a typo. So let me -- let me  
10   strike that.

11           In paragraph 10 of your '206 reply  
12   declaration you state that: If it presents a  
13   paper from 2022 as being from between 2006 and  
14   2009, Google could just have easily omitted  
15   relevant results from the correct time period,  
16   such as results that may not have been indexed  
17   with a correct date or a date at all.

18           Do you see that?

19           A   Yeah.

20           Q   And who told you that Google could just  
21   have easily omitted relevant results from the  
22   correct time period?

1           A   That was just -- looking at the results,  
2   the results had irregularities.  And so since we  
3   don't have a search that was conducted during that  
4   time period, there's no way we can compare and  
5   contrast search results today.  So we don't know  
6   officially or we don't know for certain that --  
7   that it's actually capturing everything that would  
8   have been captured.

9           Q   But you have no basis for an opinion that  
10   Google could have just as easily omitted versus  
11   adding results, do you?

12           MR. CURTIS:  Objection, form.

13           A   This, I guess, is just an opinion, but  
14   there are irregularities.  And if there's  
15   irregularities by adding stuff, what -- who is to  
16   say there aren't irregularities on stuff that is  
17   missing?

18           Q   Have you seen any evidence that Trevarthen  
19   was indexed with an incorrect date?

20           A   I have not.

21           Q   Have you seen any evidence that Trevarthen  
22   was indexed with no date at all?

1           A    I have not.

2           Q    So looking at your testimony where you  
3           state that Google could have just as easily  
4           omitted relevant results, right, do you see that?

5           A    Yes.

6           Q    And so just to clarify, is it your opinion  
7           that Trevarthen is relevant to the date limited  
8           keyword searches you ran on Google, but it was  
9           omitted from the results for some reason?

10          A    I would say that -- I'm going to go back  
11          to my previous statement that if I was looking for  
12          a paper, I wouldn't be looking on Google, right?  
13          I would -- I would look at a search engine that  
14          was specifically for scientific journal articles.

15          MR. LANDERS: Well, I object as  
16          nonresponsive, because I'm asking about Google.

17          Q    So is it your opinion that Trevarthen is  
18          relevant to the date limited keyword searches you  
19          ran on Google, but you believe it was omitted from  
20          the results for some reason?

21          A    I'm not sure that -- I'm not -- I'm not  
22          sure. It -- it definitely falls within the dates.

1 I don't know why -- why we didn't find it. Like I  
2 this, I didn't go through every page. It might  
3 have been there. I didn't see it in the pages  
4 that I went through.

5 Q And it's possible that one reason  
6 Trevarthen didn't turn up in the date limited  
7 Google search is because it was not indexed in a  
8 manner that allowed it to be located using  
9 keywords, right?

10 A It is possible, but later in my  
11 declaration, we showed that it was available if  
12 you look on page 17. And the search report that  
13 was prepared by the Australian Patent Office found  
14 it on the internet if you see that.

15 MR. LANDERS: I object as nonresponsive,  
16 because I'm asking about your Google searches.

17 A Okay.

18 Q And just to be clear, you did answer that  
19 it is possible that one reason Trevarthen didn't  
20 turn up in the Google search is because it was not  
21 indexed in a manner that allowed it to be located  
22 using keywords before September 15th, 2009, right?

1           A   Once again, it's really hard to know if it  
2           would have been present in the -- 2009 without  
3           comparing and contrasting a search that was done  
4           at that time. That's -- that is why I brought up  
5           this other search.

6           MR. LANDERS: I may be done, so I'm going  
7           to go over my notes, if that's okay, and take a  
8           break.

9           MR. CURTIS: Five, ten minutes?

10          MR. LANDERS: Probably closer to ten.

11          (Recess, 11:19 to 11:39 a.m.)

12          Q   Welcome back, Dr. Brown-Brandl.

13          A   Thank you.

14          Q   Did you discuss the substance of the  
15          deposition during the break?

16          A   We did not.

17          MR. LANDERS: Okay. And with that, I pass  
18          witness subject to recross.

19          MR. CURTIS: I have no questions for the  
20          witness.

21          (Deposition was concluded at 11:39 a.m.)  
22

CERTIFICATE OF SHORTHAND REPORTER

I, Susan Klinger, Reporter within and for the states of Texas and California do hereby certify:

That TAMI BROWN-BRANDL, Ph.D., the witness whose deposition is hereinbefore set forth, was duly sworn by me before the commencement of such deposition and that such deposition was taken before me and is a true record of the testimony given by such witness.

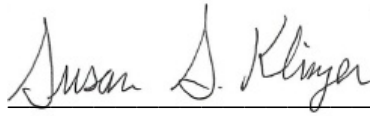
I further certify that the adverse party, Petitioner, was represented by counsel at the deposition.

I further certify that the deposition of TAMI BROWN-BRANDL, Ph.D., occurred at the offices of Gibson Dunn & Crutcher, 2001 Ross Avenue, Dallas, Texas on Thursday, June 19th, 2025, commencing at 8:54 to 11:39 a.m.

I further certify that I am not related to any of the parties to this action by blood or marriage, I am not employed by or an attorney to any of the parties to this action, and that I am in no way interested, financially or otherwise, in

1 the outcome of this matter.

2 IN WITNESS WHEREOF, I have hereunto set my hand  
3 this 24th day of June, 2025.

4  
5  
6   
7

8 Susan S. Klinger, RMR-CRR, CSR

9 Texas CSR #6531

10 California CSR #144087  
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