

UNITED STATES DEPARTMENT OF LABOR  
OFFICE OF ADMINISTRATIVE LAW JUDGES

In the Matter of: )  
)  
OFFICE OF FEDERAL CONTRACT ) Case No. 2017-OFC-00006  
COMPLIANCE PROGRAMS, )  
U.S. DEPARTMENT OF LABOR, )  
)  
Plaintiff, )  
)  
vs. )  
)  
ORACLE AMERICA, INC., )  
)  
Defendant. )  
)

**VOLUME VII**

Monday,  
December 16, 2019

Office of OALJ  
90 Seventh Street  
San Francisco, CA

The above-entitled matter came on for hearing,  
pursuant to notice, at 9:00 o'clock a.m.

BEFORE: THE HONORABLE RICHARD M. CLARK,  
Administrative Law Judge

**APPEARANCES:**On behalf of the Plaintiff:

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Monday, December 16, 2019

WITNESSES:DIRECTCROSSREDIRECTRECROSSALJ

Ali Saad

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EXHIBITS:IDENTIFIEDRECEIVEDREJECTEDWITHDRAWNJOINT

(None identified, nor received.)

PLAINTIFF

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DEFENDANT

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ADMINISTRATIVE LAW JUDGE

(None identified, nor received.)

P R O C E E D I N G S

1 (9:00 o'clock a.m.)

2 JUDGE CLARK: Okay. We will be on the record.

3 Good morning. We are on the record in the matter  
4 of OFCCP versus Oracle America, Incorporated, OALJ Case  
5 Number 2017-OFC-00006. Today is Monday, December 16th, 2019,  
6 this is day seven of our hearing. We are in Oracle's case in  
7 chief. And I think that's all I have to say at this point.

8 So, anything for the record before we get started,  
9 Ms. Bremer?

10 MS. BREMER: Charles Song will be conducting the  
11 cross examination.

12 JUDGE CLARK: Okay. Good morning, Mr. Song.

13 MR. SONG: Good morning, Your Honor.

14 JUDGE CLARK: Would you like to state your  
15 appearance for the record, please?

16 MR. SONG: Charles Song on behalf of OFCCP.  
17 Charles S-o-n-g.

18 JUDGE CLARK: Okay.

19 Anything for the record before we get started, Ms.  
20 Connell?

21 MS. CONNELL: No, Your Honor.

22 JUDGE CLARK: Okay. You may call your witness.

23 Good morning. You can step right around.

24 Raise your right hand.

1 Whereupon,

2 ALI SAAD

3 having been first duly sworn by the Administrative Law Judge,  
4 was examined and testified as follows:

5 JUDGE CLARK: Have a seat, please. If you would  
6 state your name and then spell it for our record, please?

7 THE WITNESS: Yes. Ali Saad, first name is  
8 A-l-i, last name S-a-a-d.

9 JUDGE CLARK: Dr. Saad, we're going to -- we're  
10 recording everything that's said here. So, be sure to let  
11 the lawyer ask the complete question and they'll let you give  
12 a complete answer, because we can't record two people at  
13 once, okay.

14 And I think a little bit different than when you do  
15 a deposition, if one of the lawyers makes an objection, you  
16 just stop talking, or if one of the lawyers makes an  
17 objection to the question don't give an answer until I let  
18 you know whether or not you can answer the question, okay.

19 THE WITNESS: Yes.

20 JUDGE CLARK: All right.

21 Who's got this witness?

22 MS. CONNELL: I do, Your Honor.

23 JUDGE CLARK: Ms. Connell, go ahead.

24 DIRECT EXAMINATION

25 BY MS. CONNELL:

1 Q Good morning, Dr. Saad.

2 A Good morning.

3 Q Can you please state your profession?

4 A Yes. I'm a labor economist.

5 Q And where do you work?

6 A I work at Resolution Economics.

7 Q What is your educational background?

8 A I have an undergraduate degree in History and  
9 Economics from the University of Pennsylvania, and a Ph.D. in  
10 Economics from the University of Chicago.

11 Q Did you attend the University of Chicago on a  
12 fellowship?

13 A Yes, I did.

14 Q Which fellowship was that?

15 A It's called the NIMH Fellowship.

16 Q And what does NIMH stand for?

17 A National Institute of Mental Health, it's one of  
18 several national fellowship programs that are applied to the  
19 Social Sciences as well as some of the other disciplines.

20 Q Did you have a concentration in your Ph.D.?

21 A Yes. I had field specializations in Labor  
22 Economics and Economic History.

23 Q Who are your Ph.D. dissertation advisors at  
24 Chicago?

25 A Garry Becker, Shirlene Rosen and David Galenson.

1 Q What were their areas of focus?

2 A Well, Professors Becker and Rosen are both labor  
3 economists and Professor Galenson is an economic historian  
4 who, at the time I was working with him, specialized in labor  
5 markets issues in a historical context.

6 JUDGE CLARK: Would you spell Galenson for our  
7 record, please?

8 THE WITNESS: G-a-l-e-n-s-o-n.

9 JUDGE CLARK: Thank you.

10 BY MS. CONNELL:

11 Q Dr. Madden referenced Gary Becker in her testimony  
12 last week, do you recall that testimony?

13 A Yes, I do.

14 Q Is that the same Gary Becker?

15 A Yes, it is.

16 Q Did your dissertation win any awards?

17 A It was a finalist in what is called the Allan  
18 Nevins Prize for dissertations involving Economic History.

19 Q After completing your Ph.D., did you work in  
20 academia at any point?

21 A Yes, I did.

22 Q Can you describe that experience?

23 A Yes. I went from graduate school to teaching at  
24 the City University of New York, in New York City. And I  
25 taught there for six years.

1 Q Which courses did you teach?

2 A I taught Labor Economics, Economic History, Micro  
3 Economics, Macro Economics and Econometrics.

4 Q At some point did you transition out of full-time  
5 work in academia?

6 A Yes.

7 Q Why did you make that change?

8 A I found that the atmosphere of academia for me,  
9 personally, was not what I really wanted. It took me a few  
10 years to figure that out, but when I did figure that out I  
11 left academia.

12 Q Since that time have you served in any academic  
13 roles at all?

14 A I have. I've been an adjunct professor at both USC  
15 and UCLA in Los Angeles.

16 Q And what courses have you taught at USC and UCLA?

17 A Econometrics.

18 Q Can you please describe your work history since  
19 leaving full-time academia?

20 A Yes. Initially I went to Price Waterhouse in New  
21 York City, in a group that specialized in various types of  
22 consulting, including litigation consulting, but also  
23 bankruptcy and various other types of analyses. And I was at  
24 Price Waterhouse in New York for several years and they asked  
25 me to move to Los Angeles, which is how I ended up moving to

1 the West Coast. And I stayed with Price Waterhouse for  
2 several more years. I think my total time at Price  
3 Waterhouse was roughly seven years, interrupted by a very  
4 short stint to Olympia and York, which was a client of Price  
5 Waterhouse who hired me away. It was a mistake, as I have  
6 been told by the partners when I went there, and I went back.

7 So, there was this short little slice of time, about 10  
8 months, I think it was.

9 So, I was at Price Waterhouse until -- I think it  
10 was the end of 1995, when I moved to a firm called Alschuler  
11 Melbourne and Glasser, which was a smaller accounting and  
12 consulting firm, and I worked there for about two and a half  
13 years. And then the group of people with whom I was working  
14 at that time moved on to Deloitte and Touche, where I was a  
15 partner for a flash of a moment. I was a partner there for  
16 two months, turned out it was a big mistake to go there  
17 because of conflicts of interest and so on. And that did  
18 precipitate me founding Resolution Economics about 21 years  
19 ago, where I remain today.

20 Q Can you tell us about the work that Resolution  
21 Economics does?

22 A Yes. We participate in work of the sort that we're  
23 engaged in here, so participating in litigation. We also do  
24 a lot of direct consulting involving labor and employment  
25 issues with companies. We do a variety of work outside the

1 labor and employment space. We also have people who work in  
2 -- who have accounting and finance backgrounds. We also work  
3 on software products or technology enabled products, if you  
4 will, associated with our work in the labor and employment  
5 space. So, a fairly wide variety of types of work.

6 Q You mentioned consulting work, you've mentioned  
7 that a couple times in your testimony. What kind of  
8 consulting work are you referring to?

9 A We do, right now, in the last several years, we've  
10 been doing a lot of pay equity analyses, as they're called.  
11 So, analyzing pay for companies with respect to whether or  
12 not there's equity according to various demographic  
13 characteristics, gender, race and so on.

14 Q And is this all statistical work?

15 A Yes, it is.

16 Q Sorry, I didn't mean to cut you off. Continue with  
17 your answer?

18 A Well, there's another type of consulting that we do  
19 in a similar area, which is when a firm is going to  
20 reorganize and maybe move workers around or downsize certain  
21 parts of the company, or do various things associated with  
22 large changes in the structure of their workforce, they often  
23 are interested to know are there any demographic imbalances  
24 that show up in that sort of plan. And so they will ask us  
25 to analyze and report to them.

1           Q     Approximately, how many people work for Resolution  
2 Economics?

3           A     It's about 125 at this point.

4           Q     And of those 125, how many are economists?

5           A     I believe there are, approximately, 15 Ph.D.  
6 economists, but in addition there are quite a few individuals  
7 with mater's degrees not just in Economics, but in other  
8 fields, business fields, Data Science, we have several people  
9 who are specializations in Data Science and so on.

10          Q     Can you tell us about your current job at  
11 Resolution Economics, the work that you personally do for  
12 them?

13          A     Well, I do work such as what I'm doing here,  
14 participate in a full schedule of project work. And then I  
15 also have overall responsibility just for the administration  
16 of the firm.

17          Q     And when you referenced the work that you're doing  
18 here, that is work in the field of labor economics and  
19 statistics?

20          A     Yes, so either in a litigation or in a consulting  
21 mode.

22          Q     Is there a particular focus of your work at  
23 Resolution Economics?

24          A     It's tended to be more -- give my background in  
25 labor economics, it's tended to be more on the employment

1 discrimination side when it involves litigation. And when it  
2 involves consulting, tends to be on analysis of employment  
3 practices. So, it's similar sort of work, but in a  
4 consulting role. But I also do a fair amount of work in what  
5 are called Wage and Hour cases.

6 Q For how many different companies have you conducted  
7 economic analyses of compensation?

8 A Oh, it's dozens at this point.

9 Q And what types of industries have those companies  
10 been in?

11 A Many industries -- technology, such as in this  
12 circumstance, healthcare companies, retail companies, either  
13 big box warehouse style companies, small retail companies,  
14 finance, banking, quite a few different industries.

15 Q You mentioned technology. Have you conducted  
16 analyses for both hardware and software companies?

17 A Yes, I have.

18 Q What experience do you have serving as an expert  
19 witness in litigation, if any?

20 A Over the past 25 years I have, off and on, served  
21 in the role as an expert witness in cases.

22 Q Can you give us -- have any of those cases involved  
23 discrimination class actions?

24 A Many of them have.

25 Q Can you give an estimate as to how many?

1           A     It's -- I think it's over 40 times where there's  
2     been a report or testimony involved, and probably another 20  
3     or 30 times where the work has involved consulting, but it's  
4     been consulting in a litigation specific context, where there  
5     was no report or testimony.

6           Q     Okay. In the 40 plus discrimination class actions  
7     where you have done a report, are you referring to a written  
8     report?

9           A     Yes.

10          Q     And in those 40 plus cases, did you also have to  
11     turn over your backup materials?

12          A     Yes, typically you do. We were required to in  
13     federal court and in most state court circumstances typically  
14     backup is exchanged in cases of this sort.

15          Q     And as in this case were your written reports and  
16     your backup materials subject to scrutiny by the other side?

17          A     Yes, they were, very thorough scrutiny.

18          Q     And in those 40 plus cases were you ever found to  
19     not be qualified to testify as an expert in labor economics  
20     and statistical analyses?

21          A     No.

22          Q     What do you understand your assignment in this case  
23     to have been?

24          A     Well, my initial assignment was to respond to  
25     allegations that were presented in what is referred to as the

1 Second Amended Complaint, which had a series of statistical  
2 analyses, the backup for which was provided to me. So, my  
3 initial assignment was to respond to those analyses.

4 Q And then did you have another assignment?

5 A Well, then of course once -- there were two reports  
6 issued by experts in this case. So, Dr. Madden filed an  
7 initial report. I was then asked to respond to that report  
8 in a second report that was entitled: "Rebuttal Report," one  
9 month later.

10 Q Okay. And what materials did you have available to  
11 you at the time of your initial report?

12 A Well, there was quite a range of materials

13 THE WITNESS: Can I pus this back a little bit? I  
14 guess not.

15 JUDGE CLARK: You may have to push back -- we're  
16 sort of confined a little bit. Take the microphone with you.

17 THE WITNESS: I don't want to unplug it here.

18 Yes, as shown on the slide, there were really very  
19 voluminous information. So, there were Excel files, 262 at  
20 this point, initially. All kind of information, including  
21 compensation, hiring, other kinds of issues. There were also  
22 large reservoirs, if you will, of text base -- machine  
23 readable text information. So, there were performance  
24 appraisals and self-appraisals, almost 20,000 of those.  
25 There were 4,500 job requisitions. And there were 4,200 odd

1 resumes. And then over 1,500 new hire and promotion  
2 justifications, as they are sometimes referred to. So,  
3 that's all the -- let's call it the data and machine readable  
4 information. But there were also quite a bit of additional  
5 materials provided to me, so there were a whole bunch of  
6 materials describing various aspects of Oracle's practices  
7 with respect to the things at issue in the case.

8           There was also the Notice of Violation, as it's  
9 referred to. I was provided with that, with some backup  
10 material, some statistical analyses that apparently related  
11 to that Notice of Violation.

12           I also was provided with the Second Amended  
13 Complaint, of course, as I mentioned, in some of those backup  
14 files. And I actually collected some additional data on my  
15 own with respect to the first report, in particular something  
16 called the "National Longitudinal Survey".

17 BY MS. CONNELL:

18           Q     What is the National Longitudinal Survey?

19           A     It is a survey of individuals -- actually called:  
20 "of youth," because they start the survey when the  
21 individuals are relatively young. And it's a survey that's  
22 one of two very -- two most prominent national data sets that  
23 is what's called "longitudinal," it follows people over time  
24 and periodically surveys them and asks them a series of  
25 questions, very detailed questions, about the aspects of what

1 has happened in the time between the last survey and the new  
2 survey. And this survey -- this data is used extensively by  
3 labor economists.

4 Q Did you memorialize your opinions about the OFCCP's  
5 analyses, in the Second Amended Complaint, in a written  
6 report?

7 A Yes.

8 MS. CONNELL: And just for identification, I'm  
9 going to show you what's been entered into evidence as Joint  
10 Exhibit 103, and again for identification I would like --

11 May I approach, Your Honor?

12 JUDGE CLARK: Yes.

13 THE WITNESS: Thank you.

14 MS. CONNELL: Your Honor, would you like a copy, as  
15 well?

16 JUDGE CLARK: No, I'm okay. Thank you.

17 MS. CONNELL: Okay.

18 BY MS. CONNELL:

19 Q Dr. Saad, is this the initial report, your initial  
20 report in response to the analyses in the Second Amended  
21 Complaint?

22 A It appears to be.

23 Q Do you have any reason to believe it's not?

24 A No.

25 Q And you testified that you did some further work,

1 after your initial report, correct?

2 A Yes.

3 Q What further materials did you review, if any?

4 A There was some additional materials provided with  
5 Dr. Madden's report, there were backup files. On the screen  
6 here it says 273, so there were quite a few backup files from  
7 Dr. Madden's report. I also collected some additional  
8 publicly available data, some data from the National Center  
9 for Education Statistics, and some data from the U.S. Patent  
10 and Trademark Office. But then I also got -- in connection  
11 with Dr. Madden's rebuttal report, second report -- 39  
12 additional backup files that she relied upon in writing her  
13 rebuttal report.

14 Q And just from a timeline perspective, you did not  
15 have Dr. Madden's rebuttal report at the time that you wrote  
16 your rebuttal report?

17 A That's correct. It was a simultaneous exchange of  
18 the rebuttal reports on the same day.

19 Q Okay. And again, just for identification purposes,  
20 I'm going to show you what's been entered into evidence as  
21 Plaintiff's Exhibit 1.

22 MS. CONNELL: May I approach?

23 JUDGE CLARK: Yes.

24 THE WITNESS: Thank you.

25 BY MS. CONNELL:

1 Q Dr. Saad, I'm showing you what's been marked as  
2 Plaintiff's Exhibit 1. Is this the initial report of Dr.  
3 Madden to which you responded?

4 A It appears to be.

5 Q Okay.

6 MS. CONNELL: And one more -- actually, two more  
7 for identification -- but one more for now. Okay. I'm going  
8 to show you what's been entered into evidence as Plaintiff's  
9 Exhibit 2.

10 Your Honor, do you want copies of any of these?  
11 I'm assuming you do not.

12 JUDGE CLARK: I do not. Thank you.

13 MS. CONNELL: Okay.

14 THE WITNESS: Thank you.

15 BY MS. CONNELL:

16 Q Dr. Saad, is this -- I've shown you what's been  
17 marked as Plaintiff's Exhibit 2. Is this Dr. Madden's  
18 rebuttal report that you testified was simultaneously  
19 exchanged on the same day as your report?

20 A Well, it's part of it. It looks like it's got the  
21 text. What you handed me has the text of the report, but  
22 then has no tables or charts and just has two pages, one that  
23 just says: "Tables," on it, and one that says: "Charts," on  
24 it. So, it's not the full report.

25 Q All right. Well, I believe you are correct that

1 the version that's been entered into evidence does not  
2 include the "Tables" and "Charts." But for purposes of  
3 identification I want to show you what has been marked as  
4 Defendant's Exhibit -- what we've marked as Defendant's  
5 Exhibit 449. I believe this is a complete version of the  
6 report, but I want you to identify it?

7 A Thank you.

8 Q I'm showing you what's been marked for  
9 identification as Defendant's Exhibit 449. Is this a  
10 complete version of Dr. Madden's rebuttal report?

11 A It appears to be.

12 Q Okay. And did you memorialize your opinions about  
13 Dr. Madden's initial report in a written report?

14 A Yes.

15 Q And that was your rebuttal report?

16 A That's correct.

17 Q Okay. One more for identification. I'm going to  
18 show you what's been already entered into evidence as Joint  
19 Exhibit 104.

20 A Thanks.

21 Q Dr. Saad, I've placed before you what's been  
22 entered into evidence as Joint Exhibit 104. Is this a copy  
23 of your rebuttal report in response to Dr. Madden's initial  
24 report?

25 A It appears to be.

1 Q Dr. Saad, were you retained to conduct any analysis  
2 of -- well, before moving on -- do you have any reason to  
3 believe it is not?

4 A That it's not -- in terms of?

5 Q In terms of your report, correct?

6 A No.

7 Q Okay.

8 A I mean I didn't look at each page individually, but  
9 it appears to be --

10 Q I understand. Okay.

11 A -- the last page is correct, a correct first page.

12 Q Okay.

13 JUDGE CLARK: So, Ms. Connell, I'm sorry --

14 MS. CONNELL: Yes.

15 JUDGE CLARK: -- on Defense 449, has that been  
16 officially marked with the Court, or is that -- did you mark  
17 that?

18 MS. CONNELL: I just marked that now. I can  
19 provide you with a copy, do you want me to do that, provide  
20 you a copy of that one?

21 JUDGE CLARK: Yes, please.

22 MS. CONNELL: Okay.

23 JUDGE CLARK: And then 449 is a complete copy of  
24 Dr. Madden's --

25 MS. CONNELL: Correct, in preparing for --

1 JUDGE CLARK: -- August 16th rebuttal report.

2 MS. CONNELL: That's correct. We discovered, over  
3 the weekend, that the version that OFCCP entered into  
4 evidence is missing the tables and charts.

5 JUDGE CLARK: Okay.

6 MS. CONNELL: May I approach?

7 JUDGE CLARK: Yes.

8 Thank you. Okay. I have a copy now. That will be  
9 marked as 449.

10 (Defendant Exhibit No.  
11 449 was marked for  
12 identification.)

13 BY MS. CONNELL:

14 Q Dr. Saad, were you retained to conduct any analyses  
15 of compensation at Oracle independent of the analyses that  
16 OFCCP and Dr. Madden put forward?

17 A No, I was not.

18 Q So, in your initial report you evaluated OFCCP's  
19 analysis from the Second Amended Complaint and in your  
20 rebuttal report you evaluated Dr. Madden's analysis from her  
21 initial report, is that correct?

22 A That's correct.

23 Q Okay. Are there differences in the approach taken  
24 by OFCCP in the Second Amended Complaint and Dr. Madden's  
25 approach?

1           A     There are some differences.

2           Q     Are there similarities, as well?

3           A     Yes, there are.

4           Q     Without going through all of the similarities and  
5 differences, can you outline for us some of the primary  
6 differences and primary similarities?

7           A     Yes. In terms of differences, as I've said  
8 earlier, the differences and similarities are relatively  
9 small, but one difference is that in the Second Amended  
10 Complaint the data was analyzed separately, the pay data in  
11 particular was analyzed separately by job function and Dr.  
12 Madden combined the three job functions together.

13                   The dependent variable that was used by the OFCCP  
14 in the Second Amended Complaint was Medicare wages, which is  
15 similar to what Dr. Madden did. But I think that there were  
16 some nuances there of the use of base pay in certain analyses  
17 and not in other analyses on the OFCCP's side as compared to  
18 Dr. Madden's approach, which consistently used Medicare wages  
19 in her initial set of analyses.

20                   Then of course there are different analyses that  
21 are performed so those I wouldn't call similarities or  
22 differences, just different analyses that appear in Dr.  
23 Madden's analysis that were not, necessarily, present, for  
24 example, in the OFCCP analyses.

25                   But in general terms, the pay analyses, for

1 example, the variables used were essentially similar. Dr.  
2 Madden added an educational variable and the way that the job  
3 code, as it's called, is handled in Dr. Madden's approach is  
4 through a combination of several variables, whereas the OFCCP  
5 used the job code directly.

6 Q Are there portions of your initial report that  
7 discuss issues relevant to Dr. Madden's reports?

8 A Yes. Much of what was discussed in my initial  
9 report also would apply to Dr. Madden's report, and I point  
10 that out in my rebuttal report.

11 Q Can you give us an example of some of the  
12 criticisms in your initial report that would also apply to  
13 Dr. Madden's analysis?

14 A The two primary critiques, with respect to the  
15 compensation analyses. One is the degree to which  
16 aggregation was used across employees in conducting the  
17 analyses. I critique the OFCCP for aggregating the way that  
18 it does, but those same critiques and the results of that  
19 aggregation would apply equally well to Dr. Madden's  
20 analysis, and I do point that out in my rebuttal report.

21 In addition, I discuss, in my initial report, the  
22 use of job code and whether or not that serves to  
23 appropriately similarly situate individuals with respect to  
24 the nature of the work they are performing, that same exact  
25 critique applies to Dr. Madden's work, because her

1 combination of three variables effectively is the same thing  
2 as controlling for job code.

3 Q Okay. And we will get there eventually. But is  
4 the combination of the three variables that you're referring  
5 to what is reflected in Column 8 of her initial pay analyses?

6 A By the time she gets to Column 8 she does end up  
7 controlling for job code in a manner quite similar, very  
8 similar, actually, to the way the OFCCP did in their Second  
9 Amended Complaint.

10 Q Dr. Saad, have you formed opinions as a result of  
11 your work in this case?

12 A Yes, I have.

13 Q And can you summarize those for the Court, please?

14 A Yes. I think I have a summary of them here. As I  
15 say in my rebuttal report, a lot of what Dr. Madden is doing  
16 rests on some assumptions. Some of it are just purely  
17 assumptions, or untested assumptions are not sufficiently  
18 tested assumptions. And I will explain a lot about what that  
19 means as we go through the day today. In particular, what  
20 Dr. Madden claims is that there are particular kinds of  
21 factors that should be excluded on principle from the  
22 analyses. And it is my opinion that nothing should be  
23 excluded on principle without an empirical evaluation as to  
24 whether that's an appropriate thing to do. So, that's one  
25 area of critique.

1           A second area of critique that I referred to a  
2 moment ago was the level of aggregation in this particular  
3 population of employees. And my opinion is that that level  
4 of aggregation could seriously compromise the ability to draw  
5 inferences regarding relationships between gender and pay,  
6 and race and pay.

7           Then number three is that -- and I alluded to this  
8 a moment ago -- that ultimately the use of job code alone  
9 does not serve, in my opinion, to similarly situate  
10 individuals with respect to the nature of the work they are  
11 performing.

12           And then finally, given Dr. Madden's approach,  
13 which is that many variables ought not to be included in an  
14 analysis of compensation at a company, there's a big premium  
15 placed on getting correct measures of the variables that she  
16 believes should be included. She relies on two categories of  
17 variables, principally, prior education and let's call it  
18 training, and prior experience. But the variable measures  
19 she uses are simply educational level, highest level attained  
20 at the time of hire. Now, many people may obtain additional  
21 training and formal training, once they begin work at a  
22 company. Many companies, in fact, encourage their employees  
23 to do that, that is, as I understand it, is not accounted  
24 for.

25           And secondly, the prior experience, she measures

1 that by simply looking at the age of the individual and  
2 doesn't look at the nature of the work that's done, doesn't  
3 look at where it was done, doesn't look at whether there was  
4 continuous work, whether people were in and out of the labor  
5 market, none of those things are accounted for in just simply  
6 using age.

7           And going on to the next screen here, I do point  
8 out in my rebuttal report, as I did in my initial report,  
9 that there are a number of additional variables and factors  
10 that I believe are appropriate for inclusion in a  
11 compensation analysis, and which Dr. Madden did not include  
12 in her initial report.

13           Also, Dr. Madden, in her initial report, did not  
14 look at job assignment at hire and I find that there is no  
15 evidence that there was any kind of bias steering or  
16 channeling at hire, and we'll discuss that at length later.

17           Q     Okay.

18           A     It's my opinion, also, Dr. Madden has not shown any  
19 problems or concerns or bias in promotional pay growth, and  
20 it's also my opinion that Dr. Madden's analysis of prior pay  
21 does not demonstrate that there's any causal relationship in  
22 specifically related to Oracle's reliance upon prior pay.  
23 Simple correlation is not sufficient, there has to be some  
24 effort to demonstrate causality in the econometrics and  
25 statistical work presented by Dr. Madden -- there isn't any

1 such demonstration.

2 Q And did you summarize your ultimate conclusions in  
3 this case?

4 A Yes. Dr. Madden states that she uses the human  
5 capital approach, but she uses just a bare bones, very  
6 simplistic version of the human capital model, a version that  
7 does not contemplate applications when you get to a company  
8 where company level data is available to take into account  
9 various other aspects of human capital that may not be in  
10 this very simplistic bare bones approach. And I don't think  
11 -- given what I have seen of Dr. Madden's work, my ultimate  
12 conclusion is one cannot draw inferences from that set of  
13 analyses regarding any of the practices that she analyzed.  
14 Those inferences, I do not believe are supported by the  
15 analyses Dr. Madden performed.

16 Q Before we turn to your opinions in greater detail,  
17 I want to explore some general points about statistical  
18 modeling, generally, with you. What type of statistical  
19 approach did Dr. Madden use in this case for her main studies  
20 of pay?

21 A Her pay analyses were done using a technique  
22 called: "multiple regression."

23 Q Can you describe for us what multiple regression  
24 is?

25 A Yes. Multiple regression is a statistical or

1 mathematical technique where you take a variable of interest  
2 or a phenomenon of interest called the "dependent variable,"  
3 and seek to associate or explain that dependent variable with  
4 a set of what are called "independent variables." So, in  
5 this case factors influencing pay would be your independent  
6 variables, and pay itself would be a defendant variable.

7 Q Can you give us an example to explain how  
8 regression, multiple regression analysis works?

9 A Well, one example that I have found over the years  
10 is -- actually quite a good one -- is to take an agricultural  
11 setting, because I think it's easy to visualize the kinds of  
12 things that are going on in an agricultural setting. And we  
13 could use corn as one example, corn growth -- or given where  
14 we are, may be looking at grape yield. The yield of a  
15 vineyard might be an interesting one to do. And let's  
16 suppose that the thing they're interested in is how does a  
17 particular brand of fertilizer impact the yield of a  
18 vineyard? So, let's suppose that you know that this brand of  
19 fertilizer has been in use for some period of time, but there  
20 are other brands of fertilizer, also, and there are other  
21 things going on that affect grape yield. So, you attempt to  
22 figure out what those things are. What is the soil quality?  
23 What is the rainfall amount per vineyard, let's say, or area  
24 that you -- plot of land, let's call it? What is the  
25 elevation? What is the days of sunshine? What is the

1 average high temperature, average low temperature? So on and  
2 so forth. And then what kinds of fertilizer are being used  
3 on the different plots of land? Presumably the farmers, or  
4 the winemakers, are using whatever type of fertilizer they  
5 want, so you have no control over it. So, in that saying,  
6 you would run a multiple regression of some sort of measure  
7 of the yield of your plot of land on all of these various  
8 things.

9           And then the goal would be, well, let's see whether  
10 this Brand X fertilizer, whether or not there's a  
11 statistically meaningful relationship between it and all the  
12 other factors "holding constant" -- using that phrase --  
13 holding constant all the other characteristics. So, for  
14 example, fertilizer is not -- that fertilizer may not be used  
15 on all the different plots, it may be used only on some  
16 plots, not on others. You have to take account of the  
17 differences in those pieces of land with respect to these  
18 other things, like sunshine, water and so on.

19           Q     And what if you failed to take account of one of  
20 these other factors?

21           A     Well, let's suppose -- let's start with the premise  
22 that I actually have in my initial description, identify all  
23 of the factors, assume that to be true for a moment. But  
24 suppose I failed -- in the second scenario -- I failed to  
25 measure rainfall, let's say. And let's say rainfall did vary

1 from plot to plot and I didn't take that into account, I  
2 forgot to or it was very difficult to get measures, let's  
3 say. Very hard to figure out, per plot of land, how much  
4 rainfall there was, so I didn't put it in the model. The  
5 question is, what would that do to my conclusions regarding  
6 the Brand X fertilizer? Well if it turned out that Brand X  
7 fertilizer tended to be used on places that got more rain, or  
8 got less rain, then leaving out the rainfall for my analysis  
9 will attribute an incorrect impact of the amount -- of the  
10 effect on yield of Brand X fertilizer. And econometricians  
11 call this: "omitted variable bias," meaning that you leave  
12 out a variable, it biases, potentially, other variables, and  
13 the impact you've measured for other variables in the model.

14 Q Bias is a term that we've used a lot in this case.  
15 Just so that we're clear, in the context in which you're  
16 using that term, what does "bias" mean?

17 A Yes, it actually is a scientific term used in the  
18 literature, it doesn't mean anything related to employment or  
19 treatment of people, it has nothing to do with that. It  
20 simply means biased away from the true value. So, if you  
21 think there is a true relationship between two variables and  
22 you have something that you suspect may influence your  
23 ability to measure it, that's called a "bias" in the measure  
24 of that relationship between two variables.

25 Q Okay. Do you think that multiple regression was an

1 appropriate technique to use in this case?

2 A Yes. Multiple regression is very frequently used  
3 in pay cases.

4 Q Okay. And can you elaborate on what you mean by  
5 that?

6 A Well, as I said, it's a very common technique to  
7 use in pay cases, but -- and I think I actually alluded to  
8 this omitted variable bias issue. It's a matter of how well  
9 you use that technique. You can use the technique, you can  
10 apply multiple regression, the computer will compute whatever  
11 the data is. You give it the data, it's going to compute a  
12 multiple regression result. That doesn't mean it's correct.

13 So, it's all about what variables have you put in the model,  
14 have you measured them correctly, have you taken into account  
15 all the things you should take into account, in order to draw  
16 your inferences from the model. So, while you can use it, it  
17 doesn't mean it's necessarily going to give you an answer  
18 that is correct or appropriate.

19 Q And is that true in a case like this, where pay  
20 data is being analyzed to assess for potential  
21 discrimination?

22 A Well, it's a particularly important thing in the  
23 context of employment discrimination setting, because  
24 discrimination is not an observable phenomenon. Education is  
25 observable. Experience is observable. Jobs you're in are

1 observable. All of those are observable things. You can  
2 measure them and judge their impact on compensation.  
3 Discrimination is not, it is an inference drawn proxied by  
4 the demographic characteristics of whatever group you're  
5 looking at.

6           So, if it's a gender situation, you would have a  
7 variable representing gender, you would draw an inference  
8 that you are looking to see whether you can draw an inference  
9 about this unobservable phenomenon, fundamentally  
10 unobservable phenomenon. So, if in fact you have problems in  
11 your specification of your model, if you've left out  
12 variables or other kinds of problems exist, then you may not  
13 be able to make that inference. And since it's not directly  
14 observable, it's particularly critical to have a properly  
15 specified model in order to draw an inference that is an  
16 appropriate one.

17           Q     Let's take a look at slide six. Does this slide  
18 underscore the points that you are making?

19           A     Yes, it does.

20           Q     Can you explain how?

21           A     Yes. So, as I was saying, discrimination itself --  
22 and statisticians and labor economists never say that they  
23 are identifying the presence of discrimination, because  
24 that's a legal concept. So, I will use the word  
25 "discrimination" as a labor economist would, not in a legal

1 sense, that's why I put it in quotes.

2 Q Okay.

3 A So, discrimination can only be inferred, as I just  
4 said a moment ago, and the variables you use to infer it are  
5 going to be demographic characteristics, because by  
6 definition you have to proxy for it. And as I said earlier,  
7 unlike other variables that you actually can measure and  
8 observe their effects -- assuming you've measured them  
9 correctly -- it's not the case with the inference of  
10 discrimination.

11 And as I said earlier, if you have a model that's  
12 not constructed well, for a whole variety of reasons, then  
13 that may prevent you from drawing an inference that's an  
14 accurate inference regarding the presence of discrimination.

15 Q There's also been testimony in this case regarding  
16 the concept of statistical significance. In your own words,  
17 can you explain what statistical significance is?

18 A Yes. In multiple regression or any regression  
19 analysis you are estimating the effects -- you're estimating  
20 -- you are not determining, because it's a probabilistic  
21 world in which a regression setting is performed -- you are  
22 estimating a relationship between let's say a level of  
23 education and pay. The question is what impact does let's  
24 say having a Ph.D. have on your earnings in a particular  
25 company. So, you measure some sort of effect that it has.

1           The question is how confident are you that that  
2 effect is meaningful? It could be that it's just random  
3 chance that produced that, that finding, but really, in fact,  
4 it's not -- there's really no true and meaningful  
5 relationship. So, statistical significance in a mathematical  
6 technique that allows the analyst to determine the confidence  
7 that one has in a particular estimated effect. So, if the  
8 effect is X, you want to know what's the plus or minus range  
9 around that X. So, what we say is that the plus or minus  
10 range, calculated in ways that are conventional, does not  
11 include zero, meaning zero is not in the plus or minus range,  
12 then the result is statistically significant. If zero was in  
13 the range, then you say, well, I can't distinguish this  
14 effect from zero. So, statistical significance is typically,  
15 in employment cases, if there's less than one in 20 chance  
16 that an effect you've measured could have been due to random  
17 chance, then we say it's statistically significant. If  
18 there's a greater than five percent chance, or one in 20  
19 chance, then you say it's not statistically significant.

20           Q     If a particular regression analysis analyzing pay  
21 data shows a statistically significant relationship between  
22 gender or race and pay, does that, necessarily, indicate a  
23 causal relationship between gender or race and pay?

24           A     Well, of course it depends on what else is in the  
25 model. If you've taken nothing else into account in the

1 model and simply have one variable in your model, and did  
2 your regression, it could be enormously statistically  
3 significant, but it would mean nothing because you'd have to  
4 have a correct model to be able to infer that there might be  
5 some causal relationship or connection between gender and  
6 race, and pay.

7 Q Is that another way of saying that if the model is  
8 wrong, the results are wrong?

9 A Yes.

10 Q Is that concept important in a case like this?

11 A Again, that's what I've ben referring to earlier  
12 and is particularly recognize because of the unobservable  
13 nature of discrimination and the fact that you have to proxy  
14 for it. You have to get the other variables, which are  
15 observable, right, before you can draw those inferences.

16 Q Dr. Saad, do you recall reading a section of Dr.  
17 Madden's initial report entitled: "Assumptions"?

18 A Yes.

19 Q And do you recall that in that section, on page 46  
20 -- you don't have to remember the page number, but that's  
21 where it's found -- that Dr. Madden wrote:

22 "In the absence of evidence to the  
23 contrary she assumes that employees are  
24 equivalently qualified by gender and race."

25

1           A     Yes.

2           Q     From a statistical perspective, what is the effect  
3 of making such an assumption in a study of pay focused on  
4 race and gender differences?

5           A     Well, if you make the assumption and you're right,  
6 then there would be no need to worry about those omitted  
7 characteristics, if they're not in the model. But if you  
8 make that assumption and you're wrong, then the failure to  
9 include those characteristics in your analysis could bias the  
10 effect you've measured between race and compensation or  
11 gender and compensation.

12          Q     Do you agree with Dr. Madden that it is appropriate  
13 to make that assumption?

14          A     I don't think one should make the assumption  
15 without doing a test to see whether it's appropriate to make  
16 such an assumption.

17          Q     Do you recall reading Dr. Madden's argument in her  
18 rebuttal report, that any assumption, other than the one that  
19 we just went over, presumes gender or racial inferiority?

20          A     I recall reading that.

21          Q     And do you agree with that assertion?

22          A     No, not at all. In fact, I'm somewhat puzzled by  
23 the use of the word "inferior." It's not a matter of  
24 inferior or superior characteristics, it's an empirical  
25 matter as to whether characteristics differ between the

1 groups. And I don't presume, one way or the other, whether  
2 that means they're inferior. I don't know what that word  
3 means in this context and I found it a little puzzling, the  
4 use of such a word in this context.

5 Q What are the -- going back to the initial  
6 assumption that we discussed, assuming that employees are  
7 equivalently qualified by gender or race, what impact, if  
8 any, does an assumption like that have on the field of  
9 econometrics, generally?

10 A Well, it's interesting, because if you were to  
11 assume that everything that's not in your model is held in  
12 equivalent proportion, I think was a phrase that Dr. Madden  
13 used in her report -- let's assume that every single thing,  
14 you just assume that all attributes, pay related attributes  
15 of men and women, for example, are the same. Then you can  
16 just take the simple average pay of men and the simple  
17 average pay of women and you wouldn't have to do any  
18 econometrics at all. You could just take a simple average.  
19 But of course that would not make any sense. Most people  
20 would say that that doesn't make a whole lot of sense. But  
21 if you assume characteristics are not different without  
22 testing, then you, essentially, are saying the same thing on  
23 a more limited scale.

24 Q Dr. Saad, do you recall Dr. Madden's analogy in her  
25 report, comparing the work done in this case to a clinical

1 trial?

2 A Yes, I do.

3 Q Do you agree with that comparison?

4 A No, I don't.

5 Q Why not?

6 A Well, clinical trial is one where you can control.

7 Going back to the grape farming example, there the  
8 description I gave in that example was of actual data from  
9 actual farms in operation over time. But suppose, instead, I  
10 took those farms and I said, okay, I'm going to conduct an  
11 experiment here, I'm going to randomly assign Brand X  
12 fertilizer across these plots of land, and I figure out -- I  
13 simply randomly choose the plots, give them the fertilizer  
14 and over time I observe the effects, there I may not have to.

15 That's a little more complicated depending on the  
16 agriculture. I'm sure there's some people who are very  
17 familiar with the growing of grapes -- possibly in this room  
18 -- much more so than I am. But the point is that if I  
19 randomly assign the fertilizer, then it's not necessarily the  
20 case I have to measure anything else at all.

21 So, in the clinical trial, health clinical trial,  
22 for example -- and Dr. Madden described this in her testimony  
23 -- typically you would have study subjects selected for  
24 particular reasons and you would randomly assign the  
25 medication to certain members of that group and a placebo to

1 other members, and you would just observe the health  
2 outcomes. And in general, you don't have to take into  
3 account all these other nuances of differences between  
4 people, because you control them away by the design of the  
5 experiment. But that is not what you get when employment  
6 data in an actual company operating in the actual labor  
7 market over time. You get actual data, not random trial  
8 data.

9 Q Is there economic literature that discusses this  
10 point?

11 A There's a lot. There's a tremendous amount of  
12 literature in -- there's decades of research on this, outside  
13 of economics, but actually in economics also. There are  
14 individuals who are very concerned with, these days, with  
15 trying to construct experimental trials to test various  
16 economic hypotheses, because of the difficulty of testing for  
17 economic effects using real world data some researcher have  
18 turned to trying to design experiments.

19 Q Next, Dr. Saad, I want to discuss issues related to  
20 a concept called: "specification bias." Do you recall using  
21 that term in your reports in this case?

22 A Yes.

23 Q Can you explain for us what "specification bias" is  
24 and give some examples?

25 A Well, I actually alluded to -- I didn't call it

1 that, but the omitted variable bias that I discussed, where  
2 you have specifications where you specify a particular model  
3 to run on a particular data set. By "specify," it means you  
4 choose the variables to put in the model, you determine how  
5 to measure them, you determine what type of technique to use,  
6 that's called "specification," generally.

7           So, if you make mistakes in any of those kinds of  
8 steps, we refer to that as "specification bias." So, one of  
9 those is omitted variable bias, leaving models out that in  
10 fact should be in the model, can have an affect on the  
11 measured effects of the variables you do have in the model.

12           But there's another kind of specification bias and  
13 it's called: "aggregation bias." There are times when you  
14 have a data, a particularly challenging data set, let's say,  
15 where it's not clear that you should analyze all of that data  
16 in one analysis and possibly you should subset that data into  
17 separate more homogenous subsets. And I'll describe later  
18 what examples of that.

19           There are instances where aggregating can give you  
20 misleading results, whereas separating out the data and  
21 analyzing it separately may give you very different results.

22           Q     Let's take a look at slide 7, please. Can you  
23 explain how this slide illustrates the concept of omitted  
24 variable bias, as you have testified and described in your  
25 report?

1           A     Yes.  So, this is just a very simple example.  I'm  
2 going to start on the right-hand panel, actually, of this  
3 exhibit.  If you were to just look at the simple average pay  
4 of two groups of employees, there's Group A and Group B,  
5 there are 100 of each.  And then suppose you just take those  
6 employees and measure their average pay, and you discover  
7 that Group A employees earned, on average, \$115,000.00 per  
8 year, and Group B employees, on average, earned \$110,000.00  
9 per year.  Okay.  But you haven't taken any other factors  
10 into account.  But suppose somebody tells you, well, wait a  
11 minute, these employees occupy different jobs.  And then you  
12 ask the question, oh, I wonder if that made a difference and  
13 is it in fact the case that Group A and Group B really are  
14 being paid differently, could I conclude that Group B, for  
15 example, was, quote: "underpaid," relative to Group A.

16                 So, go to the left side and you can see -- and I  
17 don't have a pointer here -- but if you look at Job 1, let's  
18 start with Job 1, the group A employees, there are 40 of them  
19 of 100, and they are paid \$100,000.00, each, on average.  
20 Group B employees, there's 60 of them, also paid \$100,000.00.  
21     So, you can see, within Job 1 there's no different at all in  
22 pay.  Now we go to Job 2.  Job 2 has now 60 of the 100  
23 employees are Group A employees, they earn \$125,000.00 on  
24 average.  And only 40 of the Group B's 100 employees are in  
25 Job 2, but they earn exactly the same amount, \$125,000.00.

1 So, if I were to take the data on the left side here, it  
2 would appear to be the case that the jobs people are in serve  
3 to explain the differences in pay that you see on the  
4 right-hand side of this exhibit.

5 And so leaving job out would be an omitted variable  
6 bias with respect to conclusions drawn from the right side.

7 Q Okay. The second type of specification bias you  
8 discussed relates to problems with aggregation. I'd like to  
9 take a look at slides 8 through 13, starting with slide 8.  
10 Can you walk us through these slides to illustrate the  
11 concept as you have just testified and discussed in your  
12 report?

13 A Yes. So, this is just a very simple example in,  
14 let's call it in a too variable world to make it very simple  
15 to see the point. So, here I am plotting time in company on  
16 the horizontal axis, and just assume it's in years, and I'm  
17 plotting annual earnings on the vertical axis. And here it's  
18 a scatter of points and each of those scatters represents a  
19 person. And there you have a line through that set of data,  
20 okay. So, that line typically, in real data, would actually  
21 intersect the vertical axis, but in this illustrative example  
22 it happens to go from zero upwards, okay.

23 Now, you can take an individual data point here, so  
24 you can interpret this, take the first dot, the lower -- I  
25 guess it's the lowest dot, with the dotted lines going to it,

1 now go up there -- I don't know -- are you moving that  
2 around?

3 Q Yeah.

4 A The dot here that intersects nine years and  
5 \$125,00.00, that's one person, okay. And there's another  
6 person we've identified here. Just showing, for illustration  
7 purposes, those people. So, can we go to the next line.  
8 Okay. Suppose, instead, we have this data, okay, assuming we  
9 have these two jobs, again staying in the two job world, and  
10 I didn't pay attention to the fact that these are two jobs, I  
11 just got this data and I again drew my -- put my regression  
12 line, relating time in company to earning through all the  
13 data, without looking at the jobs. Well, I'm going to get  
14 what looks like the same relationship I had a moment ago,  
15 okay.

16 So, now we go to the next, well, it turns out that  
17 in fact if I were to look at the two jobs separately, the  
18 regression line or the relationship between time in company  
19 and earnings is very different in these two jobs. In fact,  
20 in Job 1 it's pretty flat, or even slightly negative, through  
21 those -- that cluster of data points. And then it's actually  
22 upward sloping, actually slightly steeper than the average  
23 between the two for Job 2, in the upper right. So, here's an  
24 example where if I aggregated and failed to take into account  
25 job, then I'm going to get a bias in the measure of the

1 relationship between earnings and time in company.

2 Go to the next?

3 Q Go to the next slide?

4 A Okay. So, now let's go back and sort of put  
5 together the previous example and this example. Again, take  
6 the scatter of points that represent Job 1 and then the  
7 scatter of points that represent Job 2 and assume now that  
8 there are two types of employees within them, there's Group A  
9 employees and Group B employees. The Group A are the black  
10 dots, okay.

11 Let's go to the next slide. Okay. So, if I took  
12 the first approach and I just treated them as in one job,  
13 didn't pay any attention to that, just aggregated them, I  
14 will get the regression line that you see through both  
15 scatters. Now, if you look at where the Group A employees  
16 fall, with respect to that regression, it looks like six of  
17 the employees -- those are the blue diamonds -- six of those  
18 Group A employees are earning less than the -- their earnings  
19 are below relative to their time in company. But then Group  
20 4 employees, there are four of them -- sorry -- then there  
21 are four Group A employees whose earnings are above the line,  
22 relative to time in company. So, it looks like Group A,  
23 overall, relative to Group B, earns less than you would  
24 expect, given their time in company.

25 However -- go to the next slide -- so here now if I

1 do the analysis where I separate them and estimate separate  
2 relationships or just aggregate the data to either one, in  
3 order to identify the relationship in Job 1 versus Job 2, I  
4 find now that there are equal numbers of Group A employees  
5 above and below the lines in the two -- in the two jobs  
6 combined.

7 Q So, having explained this, what would be the more  
8 accurate way to model the data in this example?

9 A Well, it would be more accurate to consider the  
10 jobs separately or to at least take into account the job.  
11 So, aggregating together -- in this case, if you were to  
12 aggregate together, you would estimate a single relationship  
13 between time in company and earnings, when in fact they're  
14 two very different relationships between time and earnings.  
15 So, your experience variable, if you want to call it that,  
16 has very different relationships, apparently, to the work  
17 being done in the scatter for one job versus the scatter for  
18 the other job.

19 Q If you have concerns about specification bias, what  
20 are some techniques you can use to address it?

21 A Well, there are -- in complex employment data --  
22 and this certainly does qualify as complex employment data --  
23 you have many interrelationships and many cross-currents in  
24 that data.

25 One method that's used is one thing that I've

1 already mentioned, which is you could dis-aggregate for  
2 certain purposes, to try to get more homogenous group of  
3 individuals where the variables you put in each of the models  
4 makes sense for the individuals in that model, where you  
5 don't have very different effects of experience mixed  
6 together. Or you could -- and some researchers will do this  
7 -- use what are called "interaction effects" or "interaction  
8 variables." And that means taking into account two factors  
9 simultaneously. The problem with that is it can multiply the  
10 number of your variables very quickly.

11 Q Did Dr. Madden use any interaction terms in her  
12 analyses in this case?

13 A No, she did not.

14 Q Did you hear Dr. Madden's testimony that large data  
15 sets permit you to have greater precision and statistical  
16 power?

17 A Yes.

18 Q How does that relate to the problems you've  
19 discussed with aggregation?

20 A Well, large data sets -- all else constant --  
21 obviously will give you more precision and power, but all  
22 else constant is the critical point. So, if by taking a  
23 larger data set you end up with biased measures or inaccurate  
24 measures by applying a regression technique to that larger  
25 data set, you will get very precise but very wrong estimates.

1 So, you'll have inaccurate results or biased results that may  
2 be highly statistically significant, but they're inaccurate.

3 Q Sounds like you're saying precision is not the same  
4 thing as accuracy?

5 A No, those are two different things.

6 MR. SONG: Objection, leading.

7 JUDGE CLARK: Overruled.

8 THE WITNESS: No, those are two different things.

9 BY MS. CONNELL:

10 Q And from an economics perspective, can you explain  
11 the difference between precision and accuracy?

12 A Yes. Accuracy I've been alluding to, I haven't  
13 used that word until now. An effect that is measured without  
14 bias would be an accurate measured effect in a regression. A  
15 precise effect is one that has very high statistical  
16 significance. But one can have, in a regression, the result  
17 can be that you obtain an inaccurate or biased effect that  
18 nevertheless is highly statistically significant. It would  
19 be like shooting a dart at a dartboard and you are a very  
20 tight cluster of where the darts fall, and they fall far away  
21 from the bull's-eye, which is considered the accurate spot to  
22 hit. It's very precise, but it's wrong.

23 On the other hand, you could have darts hitting  
24 around the bull's-eye and it may be a little less precise,  
25 but it's going to be accurate.

1 Q Which is more important in econometrics?

2 A Well, most econometricians will tell you that bias,  
3 in effects, is far worse than lack of precision. Now,  
4 obviously, one would strive to try to have as much precision  
5 as possible, but not at the expense of bias, unless you're  
6 able to quantify the extent of the bias in some precise  
7 manner. And there are cases where econometricians will spend  
8 time quantifying, in very specific and precise ways, the  
9 extent of bias in an analysis where they're also looking at  
10 precision. But that's in general terms. Accuracy certainly  
11 preferred and never at the expense of precision.

12 Q Dr. Saad, let's step back and talk about Oracle,  
13 the company whose data you analyzed in this case. As a labor  
14 economist, is it important to you to have an understanding of  
15 the company whose data you are analyzing?

16 A Yes.

17 Q Why?

18 A Because you have to know what factors to put in  
19 your model and what kinds of issues are present in a  
20 particular company, what kinds of skills from a human capital  
21 perspective, what kinds of skills and backgrounds would  
22 matter, what kinds of things should you measure. You would  
23 like to look, for example, to see how diverse the population  
24 is with respect to the nature of the information in it. For  
25 example, you have, you know, a single job type that you're

1 looking at in a particular analysis or do you have 50  
2 different jobs -- things of that sort. You really need to  
3 dig into the nature of the company and try to figure out  
4 those things before you start.

5 Q Do you use the same statistical model to analyze  
6 pay at every company you study?

7 A No.

8 Q Why not?

9 A Because it depends on the company. It depends on  
10 the nature of the pay process at a particular company. There  
11 are all kinds of nuances and individuating factors, company  
12 to company, that will call on nuances in the modeling that  
13 you're going to do.

14 Q Can you give an example?

15 A So, for example, let's say you have a company with  
16 a single job title, well, there, you're not even going to  
17 need a variable for job title, that's a very simple example.

18 There's an example here in this, for example, one of the  
19 issues in this particular case is that there were people who  
20 were hired straight out of college, others who were hired  
21 from the experienced labor market. To the extent that people  
22 coming from college don't have prior experience, mixing them  
23 together in an analysis with experienced hires for certain  
24 purposes would not make any sense. You would need to know  
25 that before you entered into the analysis.

1           Q     What groups of Oracle employees were included in  
2 the analyses that you analyzed in this case?

3           A     Well, the groups that were analyzed in my response  
4 to both Dr. Madden and the Second Amended Complaint, fell  
5 into three job functions, as they're called, among,  
6 apparently, 16 at the headquarters location. And they  
7 covered -- and I think I have some slides describing --

8           Q     Yeah. Let's take a look at slide 14.

9           A     -- some of the variety here. So, the class  
10 members, I should start with that. There are 6,0035 over the  
11 period 2013 to '18, 6,035 individuals who fall into one or  
12 more of let's call it "class member" buckets, or individuals  
13 who are subject to the analysis, out of a total population of  
14 about 8,000 -- almost 8,500 employees.

15                   As I said earlier, there's a very wide range of  
16 types of work that these people are doing, and they cover a  
17 series of what are called global career levels, which are  
18 broad bands within which individuals fall with respect to the  
19 compensation, from is call IC0 to IC6, which are individual  
20 contributor levels, and M1 to M7, which are managerial  
21 levels. It turns out 30 percent of the 8,500 individuals are  
22 managers, 70 percent are IC. But 80 percent of the ICs  
23 involved in the data that was being analyzed, report to one  
24 of the managers -- one or more of the managers in this same  
25 data.

1           There are also over 150 what are called: "system  
2 job titles," or just job codes, in those three job functions,  
3 which are Product Development, Information Technology or Info  
4 Tech, and Support.

5           Q     Okay. And let's take a look at slide 15. Does  
6 this slide further describe the employees at issue in this  
7 case?

8           A     Yes. There are, as I understand it, Oracle is a  
9 very large technology company, has hundreds of different  
10 products and services that they offer to the market. And the  
11 individuals in this data, in the data I analyzed, worked in  
12 over -- over the span of time -- 1,000 uniquely different  
13 organizations. Now, organization codes change over time, but  
14 there are many, many organizations that occur between 2013  
15 and 2018. And this was just a handful of examples. So,  
16 there's both a code, an organization code, sometimes called a  
17 Cost Center Code, and a descriptor to describe what that code  
18 is.

19          Q     What is your understanding of what organizations or  
20 Cost Centers signify at Oracle?

21          A     Well, there's a general relationship to what I  
22 would call the nature of the work. You might say that it  
23 relates partially, but not in a perfect sense, to products or  
24 services produced. But from a labor economics point of view,  
25 I look at it as something that allows you to get at the

1 nature -- potentially get at the nature of the work that  
2 individuals are doing

3 Q And that understanding that you just articulated,  
4 what is the basis of that understanding?

5 A Well there are two sources, really, two general  
6 sources. One, an individual named Steve Miranda wrote a  
7 declaration -- my understanding is he's a senior member of  
8 Oracle -- wrote a declaration that I was provided with, that  
9 described the relationship between Cost Centers or  
10 organization name as the variable is called, and products or  
11 services. And he said that there was a correspondence -- not  
12 a perfect one -- but an approximation of organization name to  
13 products and services.

14 And I also looked at many, many requisitions, job  
15 requisitions in this case. And those requisitions were from  
16 particular organizations for people -- seeking people for  
17 particular job codes. And then it went into a great deal of  
18 description about what they were doing. And while I'm not an  
19 expert in software or hardware, and I'm not a computer  
20 scientist, there appeared, to me, to be a tremendous amount  
21 of variety in those requisitions and the way they aligned to  
22 organizations corresponded, to me, with what Mr. Miranda had  
23 said.

24 Q Did you also attempt to gain an understanding of  
25 Oracle's compensation framework and practices?

1           A     Yes, I did.

2           Q     As part of that process, did you look at the  
3 relationship between job codes and salary ranges?

4           A     Yes.

5           Q     Let's take a look at slide 16. Can you please  
6 explain, using the slide, what you learned about that  
7 relationship?

8           A     Yes. So, this is a table that was in my initial  
9 report, it's actually page 27, as the footnote says. And  
10 this is looking at fiscal year 2014, and looking at standard  
11 job titles, as they're called, but there's a particular one  
12 that it's focused on, which are what are called: "software  
13 developers." So, there's software developers 1, 2, 3, 4, 5,  
14 and then architect. They correspond to what are called  
15 global career levels, in this case IC1 through IC6.

16                   And what is represented here are the ranges of  
17 compensation from minimum to maximum for each of those IC  
18 levels. And what's quite interesting and notable are two  
19 things. One, is just how wide those ranges are. They're  
20 almost two to one from maximum to minimum. But also, the  
21 overlap is quite notable. If you look at the IC2 row, for  
22 example, and you look at its spread from minimum to maximum,  
23 and the you look at IC5, you will see that the minimum of IC5  
24 is actually almost exactly the same, it's actually slightly  
25 lower than the maximum of IC2. So, not only is there an

1 overlap between IC2 and IC3, there's also from IC2 to IC4,  
2 even down to IC5. So, there's a substantial amount of  
3 overlap between these ranges across these career levels.

4 Q Did you also look at the distribution of pay across  
5 job codes at Oracle?

6 A Yes, I did.

7 Q Let's take a look at slide 17. Can you tell us  
8 what you found?

9 A Yes. So, this is, again, from my initial report.  
10 And these are the 15 most populated job titles, regardless of  
11 where they occur. So, you can see on the left there,  
12 software development director, then software developer 5, and  
13 so on, and this is not ordered -- this is not in the order of  
14 the number of employees, it's in the order of the mean -- and  
15 the mean is the little red diamond, so you can see that that  
16 starts initially somewhere higher for software development  
17 directors and goes down. But what is notable here is how  
18 much, again, how much overlap there is between these job  
19 titles and how much overlap there is, minimum to maximum,  
20 which is the top and bottom of the black lines. And then the  
21 bottom of the red box is the 10th percentile, the bottom --  
22 the top of each blue box is the 90th percentile. So, the 10  
23 and 90th percentiles overlap quite a bit across many of these  
24 job titles.

25 Q Next, Dr. Saad, did you learn anything about the

1 different components of pay at Oracle?

2 A Yes. In my understanding, there are three general  
3 categories. There is base pay, there are bonuses, and then  
4 there are stock awards.

5 Q Let's take a look at slide 18. Can you tell us  
6 what you found with regard to those various components of  
7 pay?

8 A Yes. This is looking at the data and taking from  
9 pages 90 and 91 of my first report, and just showing the  
10 proportions -- you'll see that all those bars stack up to be  
11 100 percent -- and what it shows is by IC level and  
12 management level, in increasing order in each case, the  
13 proportion represented by base pay, bonus and stock. And  
14 you'll see, for example, IC0 and M1 don't get anything but  
15 base pay. But then as you go upwards, you start to see  
16 substantial proportions of compensation arising from elements  
17 other than base pay. You see very, very little in the way of  
18 bonuses. And these are just merit bonuses or what's called  
19 annual bonus in the data. Very little in the way of bonuses,  
20 it's mostly -- additional compensation is mostly in the form  
21 of stock. And you see, like for example, M6 and M7, the  
22 majority of their compensation on average is comprised of  
23 stock based compensation.

24 Q Going back to your earlier testimony about how  
25 different factors can impact pay differently for different

1 jobs, is that an issue that you saw in this case?

2 A Yes.

3 Q And can you give an example of a factor that  
4 impacts pay differently, depending on the job at issue?

5 A Yes. Tenure is a very good example here. And I  
6 think I'd give the hypothetical example I gave earlier. It  
7 actually does relate to the data here. Tenure appears to  
8 have a very different relationship, depending on the nature  
9 of the work you're doing and the particular type of skill set  
10 you apparently have. There appear to be circumstances where  
11 what looks like a negative relationship between tenure and  
12 pay, and then other instances of what appear to be positive  
13 relationships between tenure and pay. There seems to be  
14 quite a bit of variety in the relationship of tenure,  
15 measured in years, to compensation, depending on the job  
16 you're in.

17 Q What does that tell you in terms of how to  
18 structure a model to analyze pay for these employees?

19 A Well that's something I referred to earlier. If  
20 you aggregate them together in particular ways where you get  
21 only an average effect -- because remember, if you put in the  
22 variable for years at Oracle, for example, you will get a  
23 single coefficient, single regression measure measuring the  
24 effect of years at Oracle to compensation. But there are  
25 some jobs within the population you're analyzing that have

1 very different relationships to tenure of others. And  
2 depending on the relationship between those sub-populations  
3 in let's say gender or race, it could distort the inference  
4 you draw regarding the effects of gender or race on pay.

5 Q All right. I now want to turn to your evaluation  
6 of the statistical analyses provided by OFCCP and Dr. Madden.

7 First, as part of your initial report, you looked at the  
8 statistical models that formed the basis of the claims in the  
9 Notice of Violation, is that correct?

10 A Yes.

11 Q As you testified earlier. How did the model used  
12 in the Notice of Violation compare to the model used in the  
13 Second Amended Complaint -- and for purposes of this  
14 question, I'm talking about the primary pay models, I know  
15 there were additional analyses done, but the primary pay  
16 models used in the Second Amended Complaint, how did they  
17 relate to the models used in the Notice of Violation?

18 A Well, they were pretty similar to it. The way in  
19 which many of the factors were measured was the same. I  
20 believe the Notice of Violation only looked at base pay, I  
21 believe that's the case. And the Second Amended Complaint  
22 looked at total compensation in most cases and base pay in  
23 one case, for African-Americans in particular. But then the  
24 variables included were similar. The aggregations analyzed  
25 were job functions, but otherwise there was a lot of

1 similarity between the approaches.

2 Q What did -- what results, what statistical results  
3 from the analyses conducted, did the OFCCP include in the  
4 Notice of Violation?

5 A Well, what was included were results with respect  
6 to the three job functions that I mentioned thus far. In  
7 particular, the Product Development, Info Tech and Support, I  
8 believe the conclusion was that for gender they found  
9 statistically significant relationships adverse to women. For  
10 Asian, I believe they only found that relationship for  
11 Product Development. And I believe that was also the case  
12 for African-Americans, they found a statistically significant  
13 relationship for Product Development between African-American  
14 status and compensation. And they also restricted -- I  
15 should add one more thing -- the Notice of Violation only  
16 analyzed data for the year 2014, whereas the Second Amended  
17 Complaint analyzed data over a longer period of time.

18 Q What further analyses did you do with respect to  
19 the Notice of Violation?

20 A Well, I looked at -- I was able to piece together,  
21 through a variety of materials, I did not get full backup  
22 materials, I got somewhat redacted backup materials on the  
23 Notice of Violation, and I got some correspondence between  
24 counsel, seeking to elicit methodological points regarding  
25 how the Notice of Violation work was done. So, I was able to

1 replicate the work, the results that were reported in the  
2 Notice of Violation. So, what I did was, the data that the  
3 Notice of Violation was based on had all job functions  
4 available, I ran the same models that I determined had been  
5 run on the other three job functions, on the remaining 13 job  
6 functions.

7 Q And what were the results?

8 A I found that there was nothing statistically  
9 significant outside of the three job functions, and in fact  
10 there were some positive outcomes, negative outcomes, and it  
11 was kind of a patchwork.

12 Q Let's take a look at slide 19. Can you tell us  
13 what this slide illustrates?

14 A Yes. This is applying, to all 16 job functions,  
15 the model pertaining to women. So, you can see the three  
16 solid bars are the three job functions that ended up going  
17 into the Second Amended Complaint. So, Info Tech, Product  
18 Development and Support. The shaded bars are job function  
19 that do not get into the Second Amended Complaint, and they  
20 are striped because the strip indicates that there's no  
21 statistically significant relationship. But you will notice  
22 that six, seven of those bars are actually positive, not  
23 negative, and an additional five are negative. So, there's  
24 sort of half and half negatives and positives, but none of  
25 them are statistically significant.

1           Q     Let's take a look at slide 20, please.  What does  
2     this slide illustrate?

3           A     Now, this shows, on the same slide, the results for  
4     both Asians and African-Americans.  So, where you see --  
5     there were instances where the Notice of Violation approach  
6     could not be run on African-Americans, some of these job  
7     functions are relatively small and the data would not support  
8     running the regression specified in the Notice of Violation.

9     So, where it could be run, you will see the red bars, those  
10    represent African-American.  You can see Product Development,  
11    you see only statistically significant result, and that's the  
12    same that was brought into the Second Amended Complaint.

13                For Asians, you will see in Product Development  
14    there are also statistically significant difference in pay.  
15    But then another organization called Pre-Sales, there's a  
16    statistically significant positive relationship between Asian  
17    status and pay.  But then in all of the other job functions  
18    there's no statistically significant relationship of pay to  
19    Asian or African-American status.

20           Q     What conclusions, if any, did you draw from your  
21    findings as described in slides 19 and 20?

22           A     Well, from the perspective of whether there's some  
23    sort of across the board or systemic or consistent adverse  
24    pay outcome on the basis of gender or race, you don't see  
25    that supported by the pattern that is show in this data,

1 again applying the Notice of Violation approach to that data.

2 Q All right. I'd now like to turn to your analyses  
3 -- your evaluation of the statistical analysis Dr. Madden put  
4 forward in this case.

5 MS. CONNELL: And just mindful of the time, Your  
6 Honor, this is kind of a natural breaking point. I don't  
7 know if you want me to get started on this or if you would --

8 JUDGE CLARK: Let's go ahead and take our morning  
9 recess.

10 MS. CONNELL: Okay.

11 JUDGE CLARK: We'll be off the record for 10  
12 minutes.

13 MS. CONNELL: All right, thank you.

14 JUDGE CLARK: You can step down, Dr. Saad.

15 THE WITNESS: Thank you.

16 JUDGE CLARK: We're off the record.

17 (Off the record at 10:25 o'clock a.m.)

18 JUDGE CLARK: Okay. We are back on the record.

19 All parties are present.

20 Ms. Connell, you may continue.

21 MS. CONNELL: Thank you.

22 BY MS. CONNELL:

23 Q Okay. Dr. Saad, as I mentioned before the break,  
24 we're going to turn now to your evaluation of the statistical  
25 analyses that Dr. Madden put forward in this case. And if we

1 can take a look at slide 21, please? I can represent that  
2 this is table 1a from Dr. Madden's initial report, it's a  
3 table that we've had testimony about previously, but just to  
4 lay the foundation for your testimony can you walk us through  
5 your understanding of how this table works, what it shows?

6 A Yes. This is a table for looking at the impact of  
7 gender and it builds sequentially. So, if you see there are  
8 eight columns here, the first column there's only a variable  
9 for gender in the regression model. And then what Dr. Madden  
10 does is sequentially add variables to the gender variable.  
11 So, she adds race, ethnicity in Column 2, age in Column 3,  
12 education in Column 4, time at Oracle in Column 5 and exempt,  
13 non-exempt and job descriptor, Column 6. And then management  
14 control in Column 7, and finally global career level in  
15 Column 8.

16 Q Okay. So, just to underscore some of the concepts  
17 you've already discussed, if we look in Column 1 for gender  
18 only, it looks like the gender coefficient and standard  
19 deviations are listed there, do you see where I'm looking?

20 A Yes.

21 Q So, the standard deviations there are obviously  
22 very statistically significant. Does that demonstrate a  
23 causal relationship between gender and pay, as indicated in  
24 Column 1?

25 A Well, certainly not in Column 1, because there's

1     only a variable for gender. This is essentially the simple  
2     average difference between men and women in the population  
3     analyzed.

4           Q     Okay. Now, you've heard, or you've read in Dr.  
5     Madden's reports her use of the terms endogenous and  
6     exogenous when talking about the various factors that she  
7     uses in her models?

8           A     Yes.

9           Q     And how does that concept relates to this table, as  
10    described in Dr. Madden's initial report?

11          A     Well, in her initial report, she described the  
12    factors or the variables added in the first five columns to  
13    be exogenous factors. She includes time at Oracle as an  
14    exogenous factor, it's kind of neither one nor the other,  
15    frankly. But it's considered as an exogenous factor. And  
16    then in her first report, especially in the A series of  
17    tables, the variables in Columns 6, 7 and 8 were considered  
18    by her to be endogenous.

19          Q     And what is your understanding of those terms, as  
20    used by Dr. Madden?

21          A     As used by Dr. Madden, exogenous, my interpretation  
22    of her use of that terms is that these are factors that are  
23    either preexisting factors before individuals begin work or  
24    upon when they begin working at Oracle, or otherwise  
25    variables out of the control of Oracle and under the control

1 of the employee only.

2 Q How about endogenous?

3 A Endogenous factors are factors that are potentially  
4 or partially, or could be under the control of Oracle. It's  
5 not entirely clear whether Dr. Madden believes they are  
6 entirely under the control of Oracle, partially under the  
7 control of Oracle, maybe more under the control, actually, of  
8 the employees -- not entirely clear. She treats them as if  
9 they are entirely under the control of Oracle.

10 Q And do you have an understanding, in her initial  
11 report, of her opinion as to whether endogenous  
12 characteristics should be considered in determining whether  
13 pay discrimination has taken place?

14 A Well, she's actually quite unequivocal in her first  
15 report that endogenous factors should not be taken into  
16 account. She says it in a number of places in her first  
17 report.

18 Q And so just so we're clear, the break in this table  
19 between endogenous characteristics and exogenous  
20 characteristics, as described in her initial report, is  
21 between Columns 5 and 6?

22 A Yes.

23 Q You heard Dr. Madden testify, in this case, that  
24 Column 6 in this table could be regarded as exogenous in the  
25 sense that it is a proxy for either the type of education

1 degree that an employee might hold, or the type of prior  
2 experience that the employee may hold. Do you recall that  
3 testimony?

4 A I do.

5 Q What is your reaction to that testimony?

6 A Well, in the A series of tables, it's my  
7 understanding in her first report she looked upon job  
8 descriptor at hire, as potentially proxying for those things.

9 Well, in this particular table, it's not job descriptor at  
10 hire, it's current job descriptor. So, if somebody was hired  
11 15 years earlier, then job descriptor at hire would not be  
12 the variable that's included here. But my review -- my  
13 reaction to the use of job descriptor to proxy for prior  
14 experience or education is that it would appear to be a  
15 pretty inaccurate way of capturing that information when one  
16 could simply look at that prior experience, look at the  
17 resumes, look at the other information these people --  
18 information that's available to be analyzed, and also look at  
19 the actual education, the fields of education that people  
20 have and instead use that information, instead of trying to  
21 proxy for it with a job descriptor.

22 But again, a job descriptor at hire is what she  
23 used in her first report with respect to this issue.

24 Q Do you believe that the results reflected in Column  
25 5 of this table are a reliable basis to infer pay

1 discrimination at Oracle?

2 A No, not as stated, not on their own, at all.

3 Q Do you believe that the results in Column 6 are a  
4 reliable basis to infer pay discrimination at Oracle?

5 A No.

6 Q How about the results in Column 7 or Column 8, do  
7 you believe either of these results provide a reliable basis  
8 to infer discrimination at Oracle?

9 A Ultimately no, for all of them.

10 Q And why do you say that?

11 A Because if one starts with Column 5 and stops  
12 there, there's absolutely nothing about the work the  
13 individuals are doing. And to simply assume that the work  
14 individuals are doing is entirely dictated by decisions made  
15 by Oracle and not by any other factors, or is inappropriately  
16 determined by Oracle, is simply an assumption, it's not a  
17 demonstration and, therefore, the Column 5 results, I don't  
18 believe, could be used at all to infer disparity or  
19 differences in pay on the basis of gender.

20 But even when you get to Column 8, in Column 8, as  
21 I've spent considerable time showing in my reports and we've  
22 discussed a little bit, the job codes have very wide pay  
23 ranges, we've already looked at that. And there's a great  
24 deal of variation within each job code, with respect to the  
25 pay, and in my opinion with respect to the nature of the work

1 being performed. And if you don't fully capture the nature  
2 of the work being performed, or attempt to do so, you could  
3 end up drawing inferences that are incorrect.

4 Q Can you elaborate a little bit more on why, on your  
5 opinion that the broad pay ranges for individual job codes  
6 lead you to the opinion that those employees are not  
7 performing similar work?

8 A Well, if you look -- there are a variety of  
9 reasons. If you look in the materials describing the pay  
10 ranges and how managers should set pay, they discuss where  
11 within a range one would be placed should be determined based  
12 on the skills the person has, the experience people have,  
13 they talk about so-called "hot skills," as particularly  
14 important skills. So, there's a whole variety of factors  
15 that clearly make it -- that clearly relate to the notion  
16 that there's variety within any of these job codes with  
17 respect to the nature of the work that's being done and the  
18 skills possessed by people within those pretty broad ranges.

19 Q Did you review any other material in this case that  
20 further supports that opinion that you just articulated?

21 A Yes. I mentioned earlier the requisitions that  
22 were provided, and there were thousands of requisitions  
23 provided. They were text material, but machine readable,  
24 meaning one could use computer techniques to analyze those  
25 materials. So, in looking at those materials and reviewing

1     them, there was an amazing amount of information in there  
2     described when jobs were being posted, jobs for hire were  
3     being posted. So, what I did was take a look at is there  
4     some way to subset these requisitions, and in particular I  
5     focused on software developer 4 as the single largest number  
6     of hires being brought from the outside labor market into  
7     Oracle. And I looked at those and I noticed that there was a  
8     wide variety, wide variation in the pay of those individuals.

9     And the question was, does it relate in some way to the  
10    nature of these descriptions. So, I performed an analysis  
11    that showed me they did.

12           Q     Okay. And is that your -- we'll get to this a  
13    little bit later, but is that the cluster analysis that you  
14    did?

15           A     Yes, it is.

16           Q     Okay. Going back to Table 1a, and just another  
17    foundational question before moving on. Table 1a is  
18    obviously about gender. Did Dr. Madden use the same model to  
19    study pay differences based on race?

20           A     Yes, she did.

21           Q     And, therefore, are the conclusions and opinions  
22    that you're testifying to now, do those apply to those other  
23    tables based on race, as well?

24           A     That's correct, yes.

25           Q     Okay. Why is it important, in your view, from a

1 statistical -- strike that. Why is it important, in your  
2 view, for a statistical analysis of pay to compare employees  
3 performing similar work?

4 A Because, again, this goes back to a previous point  
5 they made. You want to try to capture the major factors that  
6 influence pay. Now, major factors include the nature of the  
7 work that's being performed. And let's put aside, for the  
8 moment, whether it's endogenous or exogenous, just to deal  
9 with that separately. But if one wants to know what factors  
10 drive pay in a particular company, job code may or may not be  
11 a sufficient control. It may not similarly situate people  
12 with respect to the nature of the work they are doing. So,  
13 if you don't do that and if it turns out there's some sort of  
14 correlation to other variables in your model, like gender or  
15 race, you will get what I refer to earlier as omitted  
16 variable bias. If there are systematic differences in the  
17 backgrounds of these individuals as they come to Oracle, they  
18 have different education, different prior experience and so  
19 on, and that would correlate to what level they would be  
20 working at, once they get into Oracle, and you don't take  
21 that into account, then you could get a bias in the  
22 coefficient or the measured effect of gender and race on pay  
23 that is, in fact, due to leaving out further details about  
24 the nature of the work they are doing.

25 Q I'd like to now look more specifically at the

1 variables that Dr. Madden's model uses. And let's start with  
2 Column 3, age. What is your opinion on the use of age as a  
3 proxy for prior experience in this case?

4 A Yes. So, as I said earlier, Dr. Madden looks at  
5 age and education as the primary variables of similarly  
6 situated individuals, in her view. And the variable age is  
7 intended to capture prior experience. The problem is it  
8 doesn't capture the nature of that prior experience,  
9 differences between individuals with respect to where they  
10 worked, what companies they worked in, what industry they  
11 worked in, whether they had time in and out of the labor  
12 market -- there's a whole broad variety of things in people's  
13 backgrounds that may or may not correlate to gender or race.

14 But as I said earlier, it would be inappropriate to simply  
15 assume that they do not.

16 Q Let's take a look at slide 22. What does slide 22  
17 illustrate?

18 A Well, these are just examples taken from resumes,  
19 just as examples of different kinds of backgrounds of people  
20 within this population had. So, for example, on the left  
21 side there was an individual who was a substitute teacher in  
22 the Spokane public schools, and was also an on-call IT  
23 consultant. Another individual is a sequence associate in  
24 lab tech roles. Those don't look like people who have like  
25 skills core Oracle related skills, nevertheless they did get

1 jobs at Oracle, but their experience is quite different than  
2 the people on the right side of the panel here. You can see  
3 that there's four individuals -- these are all different  
4 individuals and their information taken from their  
5 backgrounds. One person is a director of what's called Azure  
6 Platform Quality Assurance at Microsoft. Another was a  
7 senior software engineer at Google. Another senior director  
8 at Ebay. Another was a global head of Data Architecture and  
9 Infrastructure at PayPal. So, those are sort of the other  
10 extremes. So, you can see there's quite a bit of range  
11 between these. And this is the type of thing that is  
12 obscured by simply measuring age.

13 Q So, to confirm, would Dr. Madden's age variable  
14 treat all of these individuals the same with respect to prior  
15 experience?

16 A If they have the same number of years, if they were  
17 of the same age, yes, it would.

18 Q The next variable that Dr. Madden layered onto her  
19 pay analyses was a control in Column 4 for education. Can  
20 you describe, specifically, what that control is?

21 A Yes. It is the level of -- highest level of  
22 education attained at the time of hire.

23 Q So, does that control include the type of degree?

24 A No, just the level. So, for example, Ph.D. would  
25 be just Ph.D. My understanding, based on review of Dr.

1     Madden's backup, master's degrees were all classified  
2     together whether they were Master's of Science, MBA's or some  
3     other, like Master of Public Health. So, it's just the  
4     level, the highest level attained.

5           Q     And based on your review of Dr. Madden's analyses  
6     and backups, do you have an understanding of the amount or  
7     percentage of the population for which education information  
8     was included?

9           A     Yes. Well, education information, she gathered it  
10    both from electronic sources and databases, but also took  
11    some where she could from resumes. But in the ultimate total  
12    amount of the education information, about 60 percent were  
13    missing education, so about 40 percent had education. It  
14    varied depending on the year, but approximately 60 percent of  
15    the education information is missing in the analysis.

16          Q     And what is your opinion on the use of the  
17    education control used by Dr. Madden?

18          A     Well, again, it just looks -- first of all -- it  
19    looks only at the level of education at hire, but it doesn't  
20    look to the extent that individuals were to obtain additional  
21    education, once hired at Oracle. One would imagine that Dr.  
22    Madden would consider that exogenous or could potentially be  
23    considered as exogenous -- she does not capture that, either.  
24    But the field of study, the specific field of study is not  
25    included in the analysis, she just takes the level of

1 education alone.

2 Q Okay. And just to make sure I understand your  
3 testimony on the first point, if, for example, an individual  
4 Oracle employee obtained his or her master's or Ph.D. degree  
5 while employed at Oracle, her education variable does not  
6 take that into account, is that correct?

7 A That's correct.

8 Q And in your view, is it okay to leave out the  
9 details that you just described, such as type of degree and  
10 additional education information obtained after hire?

11 A No. Because if they vary between groups of  
12 employees, then those factors may matter to the pay analysis.  
13 It's an empirical matter as to whether or not it matters.  
14 You don't know until you put it into your regression model,  
15 but to just assume that there's no difference or that the  
16 differences don't matter would be inappropriate.

17 Q Is there evidence demonstrating that fields of  
18 study do differ by race or gender?

19 A There is.

20 Q And what evidence are you referring to?

21 A Well, the labor -- in the market as a whole, there  
22 are substantial differences in the types of fields  
23 individuals focus on or major in, in their education. And  
24 even within Oracle, with the data that we do have, as limited  
25 as it is, you can see there are differences within Oracle, as

1 well, between groups, meaning between men and women and Asian  
2 and White employees, for example.

3 Q Let's take a look at slide 23. What does this  
4 slide illustrate?

5 A Well, this is looking at data from the National  
6 Center for Education Statistics, and simply looking at what  
7 individuals -- what percentages of individuals obtain  
8 bachelor's degrees in Computer Information Sciences, by  
9 gender and by race. And you can see on the left-hand side  
10 we're looking at men, alone, by race, and you can see White,  
11 Asian and African-Americans obtain bachelor's degrees in  
12 these fields at meaningfully different rates. And if you  
13 look to the right, you'll see the three bars for women and  
14 you'll see the three bars are smaller -- are lower than the  
15 bars on the left, so women tend to major in these fields in  
16 the market as a whole, somewhat less, but also there are  
17 differences by race within female individuals, as well.

18 Q Does the fact that fields of study differ by race  
19 and gender tell you anything about whether other factors, not  
20 included in Dr. Madden's model, might also differ by race or  
21 gender?

22 A Well, it certainly suggests that it would be wrong  
23 to assume that nothing else does matter, that those things  
24 can be assumed not to differ, because they may differ. And  
25 in fact, as I said earlier, when individuals come into

1 Oracle, of course individuals in Computer Science backgrounds  
2 are going to self-select into companies like Oracle. But  
3 nevertheless, as I showed in my report, the major fields of  
4 study do differ, even within Oracle, by gender and by race.

5 Q Column 5 in Dr. Madden's analysis and her pay  
6 analyses, the primary ones that we've been looking at, adds a  
7 control for time at Oracle. What is your opinion on the use  
8 of this variable?

9 A Well, there's several issues with that variable.  
10 First of all, it is time at Oracle America, as I understand  
11 it, that Dr. Madden captures. She did not capture time at  
12 Oracle locations outside of America. So, there's substantial  
13 numbers of individuals who work at headquarters, who spend  
14 time in locations overseas, that's not captured by Dr.  
15 Madden. Also, there are variables in -- Oracle has acquired  
16 many employees over the many years, a number of these  
17 employees -- very few were acquired through acquisition at  
18 headquarters during the period 2013 to '18, but many were  
19 acquired prior to that time and are in the data. And she  
20 does not capture the time that they worked at these acquired  
21 companies, for example at Siebel. But that information is in  
22 the data. And obviously, the time spent at Siebel and then  
23 working in Siebel related work once at Oracle, should be all  
24 brought together.

25 The other problem with the time in job measure is

1 that she doesn't also capture -- sorry -- time at Oracle  
2 measure -- she does not capture time in job, which is highly  
3 relevant to your pay and promotion practices, in particular  
4 time in job is very important.

5 Q Okay. Before asking some follow-up questions on  
6 time in job, why does it matter to not include, in the time  
7 at Oracle variable, time spent at international Oracle  
8 companies or affiliates locations?

9 A Because if you're working at Oracle, just at  
10 another location, you could be doing substantially similar  
11 work to what you do when you come to Oracle America. And to  
12 not count that or credit that for an employee would be  
13 inappropriate, because they're actually -- that tenure does  
14 affect their compensation and it would be quite -- likely it  
15 would influence it quite differently than if they were not at  
16 Oracle at all, or in some other company.

17 Q You also reference time in job. Why is time in job  
18 an important variable to consider?

19 A Well, the labor economists have looked at that  
20 issue, they spent a lot of time looking at what's called a  
21 job specific human capital, firm specific human capital,  
22 general human capital -- there are many ways that human  
23 capital is viewed by labor economists. But job specific  
24 human capital is also considered important. And to the  
25 extent that you were in a particular job for a particular

1 length of time is going to have an influence on your  
2 compensation or promotion likelihood, as compared to somebody  
3 who has a different length of time in the same job, all else  
4 constant.

5 Q Is there economic literature that supports the  
6 notion that time in job matters?

7 A Well, there's a lot of literature on this. I mean  
8 people have studied this very thoroughly in the academic  
9 literature, you know, there are a number of articles, many  
10 articles on this sort of issue.

11 Q Okay. All right. So, sticking with Column 5, I  
12 believe in your reports you did what's referred to as a  
13 "scatter plot" related to Column 5, is that correct?

14 A Yes.

15 Q Can you explain what a "scatter plot" is and what  
16 you did to generate it in this case?

17 A Well, what I did in this particular one, which  
18 we'll get to, but I'll describe it first, is I took Dr.  
19 Madden's model and I asked the question how well does Dr.  
20 Madden's Column 5 model, for gender, for discussion purposes,  
21 how well does it predict the pay of individuals and how do  
22 you -- if you were to compare actual pay of these individuals  
23 to what's predicted by her model, what would that look like?

24 Q Okay. Let's take a look at slide 24. Is this the  
25 "scatter plot" that you created in your report, related to

1 Dr. Madden's Column 5?

2 A Yes, it is. But one thing to notice is that there  
3 are observations that I had to cut out, just because they  
4 would have undo influence on the chart, and that is that  
5 there are 328 observations whose actual pay was above the  
6 maximum number you see here on the chart, and they were cut  
7 out in order to make the charting easier to do.

8 Q Okay. Can you explain, in a little greater detail,  
9 with the benefit of the chart in front of us, what this  
10 shows?

11 A Yes. If you look at the horizontal and the  
12 vertical axis, you will see they have the same scale and the  
13 diagonal, the dotted black line, is the diagonal through  
14 them. So, for any point on the diagonal you have the same  
15 value for actual pay as you have for predicted pay. So, if  
16 you were to imagine, hypothetically, an absolutely perfect  
17 fit of the data, you've explained every single nuance of  
18 individual's pay, and you were to predict their pay and  
19 compare to their actual, they would be right on that line.  
20 Now, of course in reality that would be unlikely to happen,  
21 but you would expect to see them clustered a little closer to  
22 the line.

23 So, here you see that they're not clustered near  
24 the line at all, they're very far, there's substantial  
25 numbers of individuals who are -- whose actual pay far

1 exceeds what's predicted for them and vice versa.

2 Q And so what is your conclusion of Column 5, based  
3 on this "scatter plot"?

4 A That the fit of the model, let's call it -- not fit  
5 in the -- I probably should use a different word, because  
6 I'll use the word "fit" in a different way in a minute --

7 Q Okay. I was going to ask you to define it?

8 A The correspondence of the model to the actual pay  
9 process at Oracle was very poor. You see it does a very poor  
10 job of explaining individual's actual pay. And you can see  
11 that it's got a particular sort of bias in that it tends to  
12 under predict people with especially high pay.

13 Q Does this "scatter plot" illustrate a variation of  
14 what you earlier testified to as specification bias?

15 A Yes. And so I would argue that omitted variable  
16 bias is one of the reasons -- not particularly on the  
17 coefficient -- specifically on the coefficient, but omitted  
18 variables cause this sort of scatter to look the way it does,  
19 things that have caused people's pay to rise significantly,  
20 once they work at Oracle, are simply not in this model. And  
21 that's one reason you see the big sort of movement upward  
22 towards the top of the chart in this scatter.

23 Q And just to make sure that we're reading the  
24 scatter correctly, the green X are males, the blue diamonds  
25 are females, is that correct?

1           A     That's correct, yes.

2           Q     Okay.  Returning to Dr. Madden's Table 1a, I want  
3 to focus now on Column 6, which is her job descriptor  
4 variable.  Can you explain what that job descriptor variable  
5 is?

6           A     Yes.  It's essentially -- it could be regarded as a  
7 job family.  So, there are a number of different job titles  
8 in the Oracle data.  And what Dr. Madden did is to group them  
9 together under what she refers to as job descriptor, which is  
10 not an Oracle variable, it's a variable that Dr. Madden  
11 created from these job codes.

12          Q     And is your -- strike that.  Is your opinion that  
13 individuals who share a job descriptor, as defined by Dr.  
14 Madden, are performing similar work?

15          A     No, no.  So, for example, software developer is one  
16 of the job descriptors, but it includes software development  
17 individuals from entry level to software architects, who are  
18 very high level individuals.

19          Q     And what is the basis for your conclusion that, for  
20 example, software developer 1, I think you said, or someone  
21 who had a career level of six, would not be performing  
22 similar work?

23          A     Well, a variety of things.  First of all, enormous  
24 differences in pay.  There could be a 10 to 1 difference in  
25 the pay of individuals in IC1 versus IC6, who are called

1 software developers. But also, if one looks at the  
2 description, job descriptive materials, you will see very  
3 different terminology used as to what the nature of the tasks  
4 are these individuals are doing, or what level at which they  
5 are doing these tasks.

6 Q And just for explanatory reasons, why would a pay  
7 spread of 10 to 1 indicate to you, as a labor economist, that  
8 those individuals are not performing similar work?

9 A Well, there's no way that the value of the work can  
10 be the same if there's a 10 to 1 difference in pay. That  
11 would be a very large surprise.

12 Q And why is that?

13 A Because the difference is too big. Anybody who was  
14 -- somebody being paid 10 times more -- somebody being paid  
15 1/10th of what others were being paid to do what they viewed  
16 as the same work, would not stay at the company.

17 Q All right. I want to turn now to slides 25 through  
18 28, starting with slide 25. Can you walk us through these  
19 examples and explain what they show, specifically with  
20 respect to the controls that Dr. Madden used in Columns 5 and  
21 6?

22 A Yes. So, what this is, these are two individuals  
23 -- and you can see the person IDs at the top of the second  
24 and third column, and then the employees -- then the  
25 characteristics considered, the characteristics that they

1 have are listed on the left side. So, for example, both of  
2 these individuals, the gender, one is female, one is male,  
3 both are Asian, if you look in the second row down, and these  
4 are exogenous variables, according to Dr. Madden's Column 5  
5 analysis. Their age, at the end of 2017, when this was  
6 measured, is the same, so it obviously would be the same at  
7 the end of the year 2014, roughly 43, 44. The highest  
8 education is exactly the same, master's degree. Their Oracle  
9 tenure in the years measured, as Dr. Madden measures it, is  
10 approximately the same, between 6.2 and 6.7 years. So, these  
11 people are observationally identical in the Column 5 model in  
12 Dr. Madden's Table 1a.

13 Q Is it -- looking down, since they share a job  
14 descriptor, is it also true that they are the same in Column  
15 6?

16 A Yes. If we go down now to the next -- the bottom  
17 pair, you'll see FLSA status, which was also in Column 6 of  
18 Dr. Madden's analysis, which is whether or not you should  
19 receive overtime. So, these are individuals who were  
20 considered exempt. They are both exempt and their job  
21 descriptor is identical, they're in Software Development.

22 Q Okay. And let's take a look at the next slide.  
23 What does this slide illustrate?

24 A Okay. So, here these are now considered as  
25 endogenous variables, by Dr. Madden. But let's take a look

1 here. The global career level or GCL, as it's referred to,  
2 are quite different. If you look at the first one on the  
3 left side, that individual is an M6, which is a high level  
4 managerial employee. And the person on the right is an IC5,  
5 which is a medium high level individual contributor. Then  
6 you look at the job title below, they have different job  
7 titles, but they're both in Software Development, one is  
8 Software Development VP, the other is Software Developer 5.

9           Then you go down a little further, you'll see there  
10 are different organizations, this is what's called the  
11 organization name. Then you look further down, you'll see a  
12 row that says: "Ever received a patent bonus," and I haven't  
13 mentioned that. But at Oracle there's a great deal of  
14 emphasis on people -- on patenting the work that is done by  
15 employees. And Oracle provides a bonus to people who are  
16 involved with patentable work. And so this asks the question  
17 whether or not the individual has received a patent bonus.  
18 The person on the left did, the person on the right did not.

19           There's another interesting difference, total  
20 Oracle years, measured by taking into account the work in  
21 other locations besides Oracle USA, it turns out the person  
22 on the left actually has 15 years, not 6.2 years, and the  
23 other individual was measured correctly at 6.7 years.

24           And finally, time in job title, which is not taken  
25 into account by Dr. Madden, 6.2 years for one, 4 years for

1 the other.

2 Q Okay. And continuing down the slide?

3 A Well, if you go below, you will see some  
4 information taken from resumes. There's something called:  
5 "discretionary job title," which differs, but that's not that  
6 important, it's already covered by some of the other factors  
7 above. These previous roles are taken from the resume. So,  
8 I'm not going to read them --

9 Q Yeah, yeah, that's fine.

10 A -- but you can see that there's differences. If we  
11 go to the next page, I think there's more of this material.  
12 So, okay, the next one, this is actually something from the  
13 requisition job posting materials that these individuals  
14 responded to in getting into their current roles at the time  
15 of measurement, and you can see they're very different, the  
16 description of what they're being asked to do or would do in  
17 the role that this requisition relates to is quite different.

18 Q All right. And then let's take a look at the last  
19 slide?

20 A Okay. So, now you see the pay information. So,  
21 the individual on the left side has a base pay of  
22 \$385,000.00, on the right side the base pay is \$163,000.00.  
23 Bonuses, \$100,000.00 for the person the left, \$2,000.00 for  
24 the person on the right. The big difference really is in the  
25 stock, and you can see there's an enormous difference there.

1       The stock award this particular year was 1.8 million to the  
2 person on the left, zero for the other. And then the  
3 Medicare wages you can see, the Medicare wages look quite  
4 different -- seems a little disconnected from what I just  
5 mentioned for stock, it's quite a bit lower, I'll get to that  
6 later -- but the Medicare wages for the person on the left  
7 are almost 10 times the person on the right. And then the  
8 total compensation, which is the sum of base pay, bonus and  
9 stock, is on the bottom row, highlighted in yellow, and it's  
10 more than 10 times greater for the person on the left than  
11 the person on the right.

12           Q       So, what conclusions, if any, do you draw from this  
13 example, regarding Dr. Madden's model at Column 6?

14           A       Well, for these two individuals, it would certainly  
15 not compare them appropriately to one another. If one wanted  
16 to compare these two individuals, they certainly would not be  
17 captured -- the differences between them would not be  
18 captured by her model. And to the extent that there's any  
19 kind of correlation between gender and race, failing to take  
20 into account those factors and not demonstrating that those  
21 factors are bias themselves, would bias your inference  
22 regarding the differences in pay between men and women.

23           Q       I want to talk a little bit more about Column 8. I  
24 believe that you testified earlier that by the time you get  
25 to Dr. Madden's Column 8, she is effectively controlling for

1 standard job title or job code, is that correct?

2 A Yes.

3 Q And returning now to your earlier testimony about  
4 the basis for your opinion that employees who share a job  
5 code at Oracle do not, necessarily, perform similar work, can  
6 you talk in a little bit more detail about what you did to  
7 arrive at that conclusion?

8 A Yes. As I've said, I've reviewed a bunch of -- a  
9 variety of materials here, including we looked at the ranges  
10 of pay and they're pretty substantial ranges in pay. I  
11 looked at the materials that describe that there are the  
12 ranges in pay are set that way in order that individuals who  
13 have different types of skills and different kinds of  
14 backgrounds could be accommodated by in a single job code  
15 across that whole range. So, that suggested to me that there  
16 are meaningfully different natures of work within a  
17 particular job code. And that's why I looked at the  
18 requisitions that were provided in this case. And as I said,  
19 there were thousands of these requisitions.

20 And one fortunate thing was there's a particular  
21 job code called software developer 4 or SD4, as we've been  
22 referring to it, where the greatest number of hires took  
23 place, in particular in Product Development. So, I looked at  
24 all the requisitions in the relevant time period for software  
25 developer 4 hires, looked at external hires, not re-hires but

1 external hires to those jobs, and there were 521. Those 521  
2 had extensive material, text based material in these  
3 requisitions. Now, it turns out there were about 40 that had  
4 very short descriptions, and I could not subject them to  
5 analysis, but the 521 I could. And I put them through a set  
6 of algorithms leading to a series of clusters of what are  
7 presumed to be subsets of jobs where the differences within  
8 these clusters are much smaller than the differences between  
9 them, in terms of the nature of the terminology and text used  
10 to describe the nature of the job in the requisitions. And  
11 so I arrived upon clusters, and I arrived upon 24. Now,  
12 there's a whole procedure that was gone through as to how I  
13 got to 24, there's some charting techniques that are used  
14 typically in these sorts of analyses, and I evaluated  
15 different numbers of clusters, five, nine, 14, I think 24,  
16 and I think even higher numbers, 30. But the break points,  
17 you can see sort of natural break points when you chart the  
18 information here, and those break points suggested that the  
19 24 might make the most sense. But I did something further.  
20 I also correlated the pay, within these different clusters,  
21 to see whether or not there was greater explanatory power of  
22 24 clusters, let's say, versus nine clusters, with respect to  
23 pay. And I found that the 24 clusters was the most  
24 explanatory.

25 So, I then took those clusters and looked at them

1 and found that there was quite a range, quite a variation in  
2 the average pay from cluster to cluster, all for ostensibly  
3 the same job. And I also saw that the text identified in  
4 these clusters meaningfully differed, at least on a visual  
5 basis.

6 Q Just for clarity, did you, personally, select the  
7 text that would form the basis of the clusters?

8 A No, no. That is selected by the algorithm. These  
9 algorithms are completely -- there's no choice involved in  
10 how the text is handled. It's handled in a mathematical  
11 manner. And then there's something called a Word Cloud and  
12 in software you can create the Word Clouds, and the software  
13 will create them for you, based on the importance of various  
14 text descriptors in a particular cluster.

15 Q Okay. Well, before taking a look at the slide,  
16 just again for clarity purposes, was the purpose of the  
17 cluster analysis to create a variable to add to a statistical  
18 model?

19 A No, it wasn't, because there weren't enough  
20 requisitions to be able to include these in, let's say, the  
21 incumbent pay analyses. So, these were just for people who  
22 were hired during the period of time. But it did allow me to  
23 get the notion of whether or not the single job code --  
24 everybody within a job code is homogenous, it allowed me to  
25 get at that.

1           Q     All right.  Let's take a look at slide 29.  What  
2     does slide 29 illustrate?

3           A     These are three of the clusters.  And there's sort  
4     of a dividing line there, you'll notice the cluster on the  
5     right, Cluster 13, the average pay -- that's the average pay  
6     below the cluster designation -- is quite a bit lower than  
7     the average pay for Clusters 8 and 2, which were on the left  
8     side of the dividing line.  And if you look at the Word  
9     Clouds, there are the words that pop up as most important  
10    and, therefore, most common within the clusters.  They are  
11    different words when you look at each of the clusters,  
12    there's what's called: "Exadata, Storage, Database" -- in the  
13    left-hand Word Cloud, then there's "Cloud" in the middle Word  
14    Cloud, and there's "Testing," in the right-hand Word Cloud.  
15    So, those -- the nature of the activities that are being  
16    described in the requisitions clearly differ, at least from a  
17    descriptive perspective, and there's a correlation to the  
18    level of pay at hire -- this is base pay at hire -- when  
19    individuals come into the same job code, this software  
20    developer job code 4.

21          Q     Dr. Saad, we looked earlier at a scatter plot that  
22    you created based on Dr. Madden's Column 5.  Did you also  
23    create a scatter plot based on Dr. Madden's Column 8?

24          A     Yes.

25          Q     Let's take a look at slide 30, is this the scatter

1 plot that you created based on Dr. Madden's Column 8?

2 A Yes.

3 Q And what does it show?

4 A Again, it shows a pretty wide spread, but you will  
5 notice less of a spread. In fact, what you don't see here,  
6 as much, is the pronounced upward movement in actual pay  
7 dimension. You see a little less of that, because at this  
8 point the nature of the work is partially being taken into  
9 account, because the job code is essentially controlled for  
10 by the combination of Columns 6, 7 and 8.

11 Q So, what conclusions did you draw based on this  
12 scatter plot?

13 A That this is still a very widely spread group of  
14 individuals, both men and women, and that the correspondence  
15 of the model to the data is relatively poor, in terms of its  
16 ability to predict individual pay and it makes one think to  
17 what extent is something else missing here.

18 Q Dr. Saad, are you familiar with the term: "R  
19 squared"?

20 A Yes.

21 Q Can you explain what "R squared" means?

22 A Yes. "R squared" is the proportion of variation in  
23 a dependent variable that is accounted for or explained --  
24 some people use the word "explained" -- by the independent  
25 variables in the model.

1           Q     Does every regression analysis -- strike that. Is  
2 every regression analysis accompanied by an R squared?

3           A     Well, typically, in most computer programs -- and  
4 any computer program I know of -- they all produce and  
5 provide to you the R squared measures in the types of  
6 regressions we're discussing here.

7           Q     Are you also familiar with a concept known as  
8 "adjusted R squared"?

9           A     Yes.

10          Q     How does "adjusted R squared" relate to R squared?

11          A     It takes into account the number of variables in  
12 the model and adjusts for the addition of variables in the  
13 model, and adjusted R squared is typically what people do  
14 rely on.

15          Q     And do all regression analyses have an adjusted R  
16 squared?

17          A     Typically, most good software programs will provide  
18 both R squared and adjusted R squared.

19          Q     Okay. For purposes of today, I'll refer to R  
20 squared generally, but let me know if there's at any point if  
21 there's a meaningful difference between adjusted an  
22 unadjusted R squared.

23          A     Okay.

24          Q     Is an R squared typically reported as a numeric  
25 value?

1           A     Yes. R squared ranges from zero to one. It's the  
2     portion of variation, so if there's no explanatory power  
3     whatsoever, R squared would be, theoretically, zero. If  
4     there's a perfect explanation, R squared would be one.  
5     People will often convert R squares to percentages, so then  
6     you would range from zero percent to 100 percent.

7           Q     And what values of R squared are typical in studies  
8     of pay data?

9           A     Well, it depends on what pay data you're looking  
10    at. If you look at economy wide data or census data, for  
11    example, you may get R squares in the .3 range or, you know,  
12    .25 range, that might be considered a decent result using  
13    that sort of data.

14          Q     What about if you're analyzing data within a single  
15    company?

16          A     Well, the company, you have a lot more detail as to  
17    what people are doing and so you can control a lot more and  
18    be able to explain more of the variation in pay. And in  
19    company data that I've analyzed over the years, you  
20    frequently will see R squares, typically, no less than 70  
21    percent, and you'll often see into the 80, almost 90 percent  
22    range, depending on the occupation and the nature of the data  
23    you have to study.

24          Q     Dr. Saad, did you evaluate the R squared values for  
25    Dr. Madden's models?

1           A     I did.

2           Q     Let's take a look at slide 31. Can you describe  
3 what slide 31 illustrates?

4           A     Yes. These are -- this is material that's taken  
5 from Dr. Madden's backup, and I do discuss this in my  
6 rebuttal report. So, I'm looking at, in this case, the A  
7 Series of tables, so 1a, 2a, 3a. So, in the top panel, Table  
8 1a, the first row, this is gender differences in Medicare  
9 earnings for 2014. If you look at Column 5 of Dr. Madden's  
10 analyses, you'll see the top row adds time in Oracle. The R  
11 squared or adjusted R squared for that particular regression  
12 model is .21, .2167. So, one can derive, from that, that's  
13 the proportion of variation explained by that Column 5 model.  
14 The proportion unexplained is 78.33 percent.

15                     And then the next two rows look at two additional  
16 models, the Column 6 model, which adds job descriptor and  
17 exempt code. You'll see that the R squared is .38, leaving  
18 about 62 percent of the variation in compensation  
19 unexplained.

20                     Finally, Column 8 model is adding global career  
21 level. And .67 or .68 is the R squared, leaving unexplained  
22 about 32 percent of the variation of pay.

23           Q     And just for now, sticking with the year 2014, what  
24 conclusions, if any, did you draw from these R squared  
25 values, as illustrated on slide 31?

1           A     Well, they do leave a fair amount -- especially  
2 model Column 5 leaves most of the variation unexplained.  And  
3 Column 6 is the same.  Column 8 leaves less unexplained, but  
4 still does leave over 30 percent unexplained, raising the  
5 prospect that something else -- something is missing from the  
6 model and whatever is missing from the model maybe correlated  
7 to gender and may change your conclusion with respect to  
8 gender, if you were to put it the model.

9           Q     And I believe you testified that Dr. Madden's R  
10 squared for her pay models were found in her backup files, is  
11 that correct?

12          A     Yes.

13          Q     And did you review those backup files -- well, did  
14 you review those backup files?

15          A     Yes, I did.

16          Q     And did you specifically review those backup files  
17 in order to find the R squared values for the pay models  
18 beyond the year 2014?

19          A     Yes.

20          Q     Can you describe the size of the files that you  
21 reviewed?

22          A     Well, the output -- it's from the output files from  
23 the data programs that Dr. Madden ran and there are several  
24 hundred pages, I think it's over 200 pages of output that are  
25 -- upon which the various R squares are found.

1           Q     And are those backup files written in plain  
2 English?

3           A     No. They're actually -- it's computer output, it's  
4 the output of the regression analyses, showing all of the  
5 different coefficients, but in addition to that also showing  
6 the R squared values.

7           Q     Okay. Dr. Saad, I want to show you what's been  
8 marked for identification as Defendant's Exhibit 450.

9           MS. CONNELL: May I approach, Your Honor?

10          JUDGE CLARK: Yes, thank you. So, what is this?

11          MS. CONNELL: It's what's been marked as  
12 identification as Defendant's Exhibit 450, a document that we  
13 provided to OFCCP last night.

14          JUDGE CLARK: Okay. So, Ms. Connell, when you get  
15 closer to a microphone. So, when we mark something in Court,  
16 I have to know what it is so the record is clear. So, I  
17 would normally mark it. So, you would asked to have this  
18 marked as Defense 450, and then you tell me what it is so  
19 that I have an accurate note about what's in the record. So,  
20 Defense 450 would be?

21          MS. CONNELL: Defense 450 -- well, I was going to  
22 have Dr. Saad explain what it is, but it is a summary of his  
23 summary that he created of the R squared values for Dr.  
24 Madden's pay values.

25          JUDGE CLARK: And at the top it says: "R Squared

1 Values for Dr. Madden's Pay Model."

2 MS. CONNELL: Yeah.

3 JUDGE CLARK: Go ahead.

4 (Defendant Exhibit No.

5 450 was marked for

6 identification.)

7 MS. CONNELL: Okay.

8 BY MS. CONNELL:

9 Q Dr. Saad, do you recognize what's been marked as  
10 Defendant's 450?

11 A Yes.

12 Q What do you recognize it to be?

13 A Yes. This is a compilation of all of the R squares  
14 for Tables 1a, 2a, and 3a, for each of the years covered,  
15 2013 to 2018, for each of the models represented by Columns  
16 5, 6 and 8, in Dr. Madden's initial report.

17 Q And who created this document?

18 A My staff created this document.

19 Q Did they create this document at your direction?

20 A Yes, they did.

21 MS. CONNELL: Your Honor, we would like to move  
22 into evidence Defendant's Exhibit 450, as a summary to prove  
23 content under Federal Rule of Evidence 1006. The underlying  
24 backup file is already in evidence as part of Defendant's  
25 Okay. 336.

1 JUDGE CLARK: Mr. Song, would you care to be heard?

2 MR. SONG: Yes, Your Honor. We would object to  
3 this, because when they sent -- Defendants sent this to us  
4 last night. We were under the impression that this was just  
5 another demonstrative and that it was not an exhibit. This  
6 is not an exhibit that they're using for impeachment or  
7 anything like that they're using for impeachment or anything  
8 like that. They had an opportunity to enter in exhibits, you  
9 know, at the exhibit deadline, but they're submitting this  
10 now.

11 JUDGE CLARK: Ms. Connell?

12 MS. CONNELL: Well, it is an accurate summary of  
13 the backup file that is already in evidence. And --

14 JUDGE CLARK: So, why now and not prior to the  
15 hearing?

16 MS. CONNELL: Because it was created -- it wasn't  
17 created prior to the hearing.

18 JUDGE CLARK: Okay. And it helps explain the  
19 testimony that Dr. Saad is giving here today?

20 MS. CONNELL: It does help explain Dr. Saad's  
21 testimony. It was created for that purpose by Dr. Saad's  
22 team at his direction.

23 MR. SONG: Your Honor, may I --

24 JUDGE CLARK: Yes, Mr. Song, go ahead.

25 MR. SONG: One more objection is that we believe

1 that this is a new analysis, similar to Dr. Madden's  
2 analysis, based on the -- so this was existing data that they  
3 certainly could have -- Dr. Saad could have had his staff run  
4 this analysis and create these charts well before the exhibit  
5 deadline, and gave us an opportunity to review it, to see the  
6 backup data. This is clearly prejudicial to the secretary,  
7 because we're just seeing this. And we don't see how this is  
8 very difficult than Dr. Madden's exhibits and charts that the  
9 Court excluded, because it was based on existing data and she  
10 just ran analyses, and that's exactly what's happened here.  
11 This is not new data, as Ms. Connell mentioned, this is  
12 existing data that they could have used before. And it looks  
13 to us like a supplemental new analysis that would prejudice  
14 the secretary.

15 JUDGE CLARK: Ms. Connell?

16 MS. CONNELL: It's not a new analysis, Your Honor,  
17 it's just a summary of the R squared values that are found in  
18 the backup material, there's no analysis.

19 JUDGE CLARK: Okay. I'm not going to receive it  
20 into evidence at this point. I'm going to take it under  
21 submission, but you can ask questions.

22 MS. CONNELL: Okay. Great. Thank you, Your Honor.

23 BY MS. CONNELL:

24 Q Dr. Saad, what conclusions, if any, did you draw  
25 based on the R squared values reflected in Defendant's

1 Exhibit 450?

2 A Well it's very similar to the conclusions for the  
3 year 2014, alone. Here you can see that each of the -- if we  
4 look at the Table 1a page here, and look at the yellow block  
5 at the top, it simply reproduces each of the years that are  
6 in Dr. Madden's analysis, not just 2014. So, all I've done  
7 here is just add the other years. And I have the same  
8 conclusion, which is that Model 5 omits most or fails to  
9 explain most of the variation in Medical compensation for the  
10 employees in those studies. The same is true of -- in the  
11 blue panel below, the Column 6 model has somewhat higher R  
12 squared, but still most --

13 MR. SONG: Objection, Your Honor. We don't see how  
14 this is proper as the witness is just reading this exhibit  
15 into the record.

16 JUDGE CLARK: Ms. Connell?

17 MS. CONNELL: He's explaining what conclusions he  
18 drew and because the actual document, that already is in  
19 evidence as Defendant's Exhibit 336, as he explained, is a  
20 several hundred page document of computer code that's already  
21 in evidence. He's simply using this to facilitate his  
22 testimony. I mean these R squared values are in evidence,  
23 whether or not this document ever is received in evidence or  
24 not.

25 JUDGE CLARK: The objection is overruled.

1           You can answer the question.

2           THE WITNESS: Yes, I think I know where I was.

3           JUDGE CLARK: Do you need the question asked again?

4           THE WITNESS: No, I think I'm okay.

5           JUDGE CLARK: Okay.

6           THE WITNESS: Again, the majority of the variation  
7 in compensation remains unexplained. And finally, even when  
8 adding global career level and essentially adding job code,  
9 there's still, approximately, 30 percent of variation  
10 unexplained by Dr. Madden's models. And that is true, this  
11 Table 1a is for gender. Table 2a is for Asian status and  
12 comes to a similar conclusion. But most, in fact an  
13 identical conclusion with respect to whether or not most of  
14 the variations unexplained for models, Column 5 and Column 6,  
15 and finally, for African-Americans, the analysis here is,  
16 again, similar in terms of the conclusions, is that most of  
17 the variations unexplained by the model in Column 5 -- and in  
18 fact even more of it is left unexplained -- so the  
19 conclusions are very similar across all three of the Series A  
20 table analyses.

21 BY MS. CONNELL:

22           Q     Going back to your earlier testimony about how  
23 discrimination is something that cannot be directly observed,  
24 but instead can only be inferred, how does that testimony  
25 relate to the concept of R squared, if at all?

1           A     Well, in particular, if we look at the yellow block  
2 where the variables in the model are the variables that Dr.  
3 Madden claimed were the exogenous variables in her first  
4 report, if you have 80 percent, approximately 80 percent of  
5 the variation in compensation unexplained, it gives rise to  
6 the concern that something that's not in the model, and it's  
7 appropriate to include in the model, would completely change  
8 the result of the analysis you have. So, to the extent that  
9 Dr. Madden finds a difference in pay between men and women  
10 of, approximately, 20 percent in those analyses, that  
11 difference in pay may, in fact, be explained by variables  
12 that remain out of this model. And the higher your  
13 unexplained variation, the more likely something that's not  
14 in the model would have changed the measured effects of the  
15 variables that are in the model, including gender, or race,  
16 as the case may be.

17           Q     Do you have those same concerns with regards to the  
18 R squared results as to Column 6 and Column 8?

19           A     Yes. The same concerns exist. For Column 8 the  
20 concerns are somewhat less, but they're not non-existent,  
21 they're still 30 percent unexplained. And if one could  
22 explain more of that variation, it's possible that the  
23 relationships between gender or race and pay might change,  
24 due to the inclusion of what is now an omitted variable.

25           Q     Dr. Saad, did you hear Dr. Madden's testimony

1 articulating her view that R squared values do not matter?

2 A I did.

3 Q What is your response to that opinion?

4 A I disagree with that. I don't think that is true.

5 Q And why?

6 A Because R squared to the exclusion of other things  
7 I don't disagree with that, you should not pursue R squared  
8 for R squared sake, and there have been a number of instances  
9 and controversies over time where -- in econometrics -- where  
10 individuals became a little too concerned about R squared or  
11 generally what are called: "goodness of fit measures," in  
12 their statistical modeling, but to say that R squared doesn't  
13 matter at all is simply false.

14 Q Did you also hear Dr. Madden's opportunity that R  
15 squared values are typically not found in published economic  
16 literature?

17 A Yes, I heard her say that.

18 Q And what is your response to that testimony?

19 A Well, that's completely false. I mean I went back  
20 to my office and picked up the July 2019 American Economic  
21 Review, the leading journal on Economics, and paged through  
22 it. Every single one of the empirical articles in there were  
23 reported R squared. In fact, I think most of the articles  
24 that are empirical, that are in Dr. Madden's cites, also  
25 include R squared.

1           Q     Dr. Saad, in your rebuttal report, you presented a  
2 series of tables, correct?

3           A     Yes.

4           Q     Are those tables labeled as Tables 1 through 5 in  
5 your report?

6           A     Yes.

7           Q     And do those tables reflect your own independent  
8 analysis of compensation at Oracle?

9           A     These were similar to what I did in my initial  
10 report. These were tables that were intended to respond to  
11 Dr. Madden's model, and to test the findings of Dr. Madden's  
12 model with respect to modifications to various elements of  
13 it, including the measurement of variables that re in the  
14 model, addition of other variables to the model and so on.

15          Q     Okay. Let's take a look at slide 32. Do you  
16 recognize this slide?

17          A     Yes, I do.

18          Q     What is it?

19          A     This is the, essentially, the test of Dr. Madden's  
20 approach to modeling pay differences for women. This one  
21 particularly focuses on Product Development alone, partly  
22 because that's the way the Second Amended Complaint was  
23 styled, it was looked at separate, at the job functions  
24 separately. It turns out Product Development is 90 percent  
25 of the people or the vast majority of the individuals working

1 in the three job functions. So, this, you can see,  
2 structures similarly to Dr. Madden's table, but modifies in  
3 particular ways and reaches a very different conclusion.

4 Q All right. Can you walk us through the table and  
5 explain what it shows?

6 A Okay. So, again, it starts with women in Product  
7 Development. So, the number of works is in the left-hand  
8 column and the percentage of women among those workers is  
9 indicated. Those numbers are somewhat different than when  
10 you lump the three job functions together. Then I start the  
11 way Dr. Madden did by putting in just the variable for  
12 gender, and I see an effect on gender. And the way to  
13 interpret these coefficients is the first one is .239, is  
14 approximately, if one were to multiply that by 100, it's  
15 approximately 23.9 percent difference. Now, it turns out to  
16 properly transform that it's actually going to be slightly  
17 less than the coefficient. So, the 23.9, it might be  
18 actually 21 percent. But it's approximate, it works to  
19 approximate, we use it as an approximation.

20 Then if you look at the T value, that's the number  
21 of standard deviations. So, this is a very highly  
22 significantly difference, but it's just gender, there's  
23 nothing else in this model. So, whatever differences there  
24 are between men and woman, group differences, there's nothing  
25 in Column 1.

1           Column 2 adds race and ethnicity, just as Dr.  
2 Madden did, like they did in the same way.

3           Column 3 has what's called a "refined age  
4 variable." It actually -- and there are some footnotes  
5 below, you can see -- it's estimated as age minus 22, minus  
6 Oracle years. So, it's just a different way of -- Dr. Madden  
7 just used age straight, and you could do it that way, it  
8 doesn't make a huge difference, but I refined it in the way  
9 that I indicate here. And you see it doesn't make much of  
10 any difference to the difference in pay between women and  
11 men. In Column 3 it's still, approximately, 22.6 percent  
12 different in year 2013.

13           Column 4 then adds education, the same way that Dr.  
14 Madden does. In fact, I used Dr. Madden's education  
15 variables directly, or measures variables, in Column 4. And  
16 again, not much of a change, in fact virtually no change, in  
17 the first row it makes no difference at all, 22.6 percent is  
18 the difference you had in Column 3 and it's still in Column  
19 4.

20           Finally, we add what's called: "refined 10-year  
21 variables." Now, the refined 10-year variables get into what  
22 I discussed earlier, which is looking at time in company,  
23 Oracle America, but also looking at time in other Oracle  
24 locations and, also, I add in acquisitions of Oracle, so I  
25 take that into account. I also take into account the leave

1 of absence in the variable called: "cumulative time spent on  
2 leave of absence." I also take into account whether there  
3 was a leave of absence in the current year, because given  
4 that I am studying total compensation or bonuses, and stock,  
5 maybe based on time -- percentage of time you were there, I  
6 want to take account of that.

7 Then I take into account a variable called "time in  
8 job," as I described earlier. And finally, I take into  
9 account whether the employee arrived in Oracle as an  
10 experienced hire or through an acquisition.

11 So, all of those things go into the refined tenure  
12 variables category, and they reduce the difference, somewhat,  
13 from 22.6 to, approximately, 18.4 percent.

14 Finally, I add work related variables, in Column 6.

15 And these are -- I add in job title, so it's essentially the  
16 same thing that Column 8 represents for Dr. Madden. But then  
17 I add in organization and I add in whether the employee ever  
18 had a patent bonus over the period 2003 to 2018, which is the  
19 longest time period I could observe Oracle employees.

20 Q Okay. And I want to dig into the specific  
21 variables that you added, in greater detail, in a moment, but  
22 before doing that, did you also make adjustments to the  
23 measure of total compensation used in this model?

24 A Yes. I neglected to say I do have a different  
25 total compensation measure. Dr. Madden uses Medicare wages,

1 which is what would appear on your W-2 statement, as wages or  
2 earnings, or income received in a particular year from a  
3 particular employer. Instead, what I did was compute total  
4 compensation from its base elements. I took base pay, I took  
5 bonuses received, and the one I took was annual bonus. And  
6 then I took -- sorry -- stock.

7 Q That's okay.

8 A I took compensation received in the form of stock,  
9 standardized and valued as if it were restricted stock units,  
10 which it turns out virtually everybody, most people, we  
11 receiving restricted stock units. Very few received options.

12 And by the end of the period, I think 100 percent were  
13 actually receiving restricted stock units.

14 Q Okay. And we'll get into a little bit greater  
15 detail about the changes you made to the measure of total  
16 compensation. But again, just to underscore, so if I'm  
17 understanding your testimony correctly, you changed the  
18 measure of total compensation and added additional variables,  
19 but otherwise kept the overall structure of Dr. Madden's  
20 model the same, with the exception of breaking it out by job  
21 functions, is that correct?

22 A Yes. It is fully aggregated within Product  
23 Development, it's not dis-aggregated within Product  
24 Development at all, it's all the employees in Product  
25 Development, almost 4,000 employees.

1 Q Okay. And did your conclusions differ from those  
2 of Dr. Madden's, with your refinements?

3 A Yes. If you look at the coefficient on gender in  
4 Column 6, it's dramatically different than Dr. Madden's  
5 Column 8 gender coefficient. In the first row, 2013, you see  
6 it's minus .017, or 1.7 percent. That particular year the T  
7 value of standard deviation was 2.05. So, in that year, it's  
8 statistically significant, but just barely.

9 But in the other five years, 2014 through 2018, the  
10 gender coefficient is smaller, 1.3 percent, roughly, and  
11 2014, down to 9/10th of one percent in years 2017 and 2018.  
12 And the number of standard deviations is below 2 and,  
13 therefore, none of those years show a statistically  
14 difference in total compensation for women in Product  
15 Development.

16 Q Dr. Saad, did you run this revised analysis that  
17 you've described, on Dr. Madden's analyses of base pay?

18 A No, I did not.

19 Q Why not?

20 A Because total compensation is what people are paid  
21 at Oracle, and we looked at those charts earlier, and there  
22 are large numbers of individuals at Oracle who make  
23 substantial amounts of compensation, in forms other than base  
24 pay. So, total compensation is what I focused on.

25 In addition, if you look at the Oracle materials on

1 pay that are associated with recruiting and placing -- and  
2 making offers to people, they discuss that those individuals  
3 using those materials should emphasize to those candidates  
4 the notion of emphasized total comp. In fact, they even tell  
5 them to, you know, throw in benefits, as well, emphasize  
6 total comp. So -- and total comp is what people are paid,  
7 they're not paid base pay, they're paid total comp.

8 Q What is your understanding of the -- well, you read  
9 the Second Amended Complaint, correct?

10 A Yes.

11 Q And what is your understanding of the measure of  
12 compensation that forms the basis for the allegations in the  
13 Second Amended Complaint?

14 A Well, it's total compensation. In fact, they use  
15 Medicare wages.

16 Q Is that another reason why you ran your revised  
17 analyses on Dr. Madden's total compensation analyses and not  
18 base pay?

19 A Yes. Well, Dr. Madden also used W-2 total  
20 compensation, as well, so I was directly responding to that,  
21 as well.

22 Q Okay. With the exception of the correction that  
23 you made or that -- strike that. With the exception of the  
24 changes that you made in the way that Dr. Madden measured  
25 total compensation, do the critiques you make of her total

1 compensation analysis apply equally to her base pay models?

2 A They would. If one were to analyze base pay, one  
3 would have to take into account all of these same factors,  
4 and maybe additional factors, too. If one were to model base  
5 pay, there may be other things that one would want to model  
6 that may not apply to total compensation, I don't know. If  
7 one were to model that, one would have to consider.

8 Q Okay. All right. So, want to talk a little bit,  
9 in a little bit more detail, about the changes you made to  
10 her total compensation measure. Dr. Madden used Medicare  
11 earnings, is that correct?

12 A Yes.

13 Q And do you believe that that is an appropriate  
14 measure of an employee's total compensation in a given year?

15 A Well, I don't think it's the best measure, for  
16 purposes of what this analysis seeks to identify, which is  
17 what was pay, in a particular year, associated with the work  
18 performed in that year?

19 Q Why, can you explain why you don't think it's the  
20 best measure?

21 A Well, in the context of Oracle and companies  
22 awarding stock options and restricted stock units to  
23 employees, what you get in the W-2 earnings is the exercise  
24 and sale proceeds that happen in that particular year. Now,  
25 those may be exercise and sale relative to stock awards made

1 in previous years. What I wanted to do is, instead, measure  
2 the value of the awards made today or in the year in which I  
3 am measuring the work and the attributes of the individual.

4 Q Let's take a look at slide 33. What does this  
5 slide show?

6 A So, this is just one example, just picked out of  
7 many possible examples. There's an individual who is a  
8 senior vice president in 2014, their base pay was  
9 \$398,000.00, over \$800,000.00 in stock was awarded. However,  
10 the Medicare wages, that is found in Dr. Madden's data set,  
11 is a very large number, many millions of dollars. It turns  
12 out this individual exercised many millions of dollars of  
13 stock in that particular year, and took receipt of the  
14 proceeds in that year, but it really came from work performed  
15 in prior years. So, it really doesn't reflect the pay or the  
16 compensation in the year in question, relative to this  
17 person.

18 Q And does this slide illustrate what you had earlier  
19 testified to as your concern about Dr. Madden's measure of  
20 total compensation using Medicare wages?

21 A Yes.

22 Q At deposition you were asked some questions about  
23 whether the way -- your way of measuring total compensation  
24 might improperly treat stock awards as having been earned by  
25 employees who were terminated before the awards had vested.

1 Do you recall those questions?

2 A Yes, I do.

3 Q And you're aware that OFCCP has criticized your  
4 method of calculating total compensation as including stock  
5 that is not yet vested and, therefore, is only a promise to  
6 pay compensation in the future. Are you aware of that  
7 criticism?

8 A Yes.

9 Q And what is your response to that line of  
10 questioning and the critique that I just articulated?

11 A Well, the goal of the statistical analysis is to  
12 look at what compensation was awarded in a particular year,  
13 in connection with work performed in a particular year, and  
14 the attributes held in a particular year. So, you want to  
15 measure everything at the same point in time. So, if I award  
16 \$10,000.00 worth of stock in a particular year, that was a  
17 decision Oracle made in that year. The decision to take  
18 custody of that money at some future point in time is not  
19 Oracle's decision, that is the employee's decision, so it  
20 does not capture the relationship between pay decisions and  
21 Oracle's pay decisions. And it also is disconnected in time.

22 What if an individual waits 10 years to take custody -- to  
23 cash in on stock options awarded many years before? Well,  
24 you're measuring their characteristics 10 years later -- or  
25 you're measuring your characteristics completely out of line

1 with when they got the money that Oracle decided they should  
2 get paid in a particular year.

3 Q All right. I want to talk now in a little more  
4 detail about the additional variables that you added,  
5 starting with leaves of absence. Now, did Dr. Madden control  
6 for leaves of absence in her pay models?

7 A Not specifically, no.

8 Q Why do you say not specifically? Can you elaborate  
9 what you mean by that?

10 A What she did was, instead, take the measure of  
11 experience and reduce it by whatever amounts of leave time  
12 she found for individuals in the data.

13 Q What did you do instead, how does your approach  
14 differ?

15 A I looked at leave as it's own entity and I looked  
16 at the cumulative amount of leave that individuals took, and  
17 I controlled for that. I did not reduce their experience by  
18 that, I instead measured it separately, because it's leave,  
19 it's not just reduced experience, it's a separate phenomenon.

20 Q And did you apply your -- I'll call it your "leave  
21 variable" -- did you apply your leave variable equally to  
22 both men and women who took leave?

23 A Well, it applied to everybody in the analysis, yes,  
24 both men and women, and all the races, would get treated  
25 exactly the same way.

1           Q     Why did you believe that it was appropriate to  
2 account for leave in a different way than cumulative years of  
3 experience?

4           A     Because differences in the amount of experience can  
5 occur for many different reasons, having nothing to do with  
6 the phenomenon of leave. So, for example, somebody who  
7 arrived at Oracle six months later than another individual,  
8 let's say somebody arrived at Oracle five and a half years  
9 ago. And a second individual arrived six years ago, but at  
10 some point in time took six months time out. They would  
11 appear to be two individuals with five and a half years of  
12 experience under Dr. Madden's measure. However, the person  
13 who arrived five and a half years ago, may have come from  
14 another company and had been working at that company. So, it  
15 would be inappropriate to treat reduced or different amounts  
16 of experience identically to taking leave. And in any event,  
17 it's an empirical question as to whether it matters.

18          Q     What do you mean by it's an empirical question as  
19 to whether it matters?

20          A     One measures it and then sees whether there's a  
21 statistical relationship between cumulative leave and  
22 compensation, generally.

23          Q     Let's take a look at slide 34. Does this slide  
24 explain why you used the approach that you did?

25          A     Yes.

1 Q And the final bullet: "Economic Literature Supports  
2 an Alternative Approach," you heard a different opinion  
3 expressed by Dr. Madden in her testimony?

4 A Yeah. I heard her say that in her view nobody does  
5 it the way I did.

6 Q What is your response to that critique?

7 A Well, that's not correct.

8 Q So, your position is that economic literature does  
9 support doing it the way you did it?

10 A Well, there's a very prominent article in this area  
11 that specifically was studying gender differences in pay,  
12 written by Marianne Bertrand, Claudia Golden and Lawrence  
13 Katz, that studied gender pay differences over time, and they  
14 modeled the leave of absence phenomenon in a very similar  
15 manner to the way I modeled it.

16 Q And is that article cited in your report?

17 A Yes, it is.

18 Q All right. I want to now look at the next variable  
19 that you added, which was a different way of measuring time  
20 in job. And why did you introduce -- strike that. You  
21 introduced a variable for time in job, why did you introduce  
22 that variable?

23 A Because, as I said earlier, that job specific  
24 capital or human capital, job specific skills, job specific  
25 knowledge, is something that ought to be measured in order to

1 better understand what the compensation level individuals are  
2 at.

3 Q And are you aware that Dr. Madden has critiqued  
4 your use of time in job?

5 A Yes.

6 Q What do you understand her critique to be?

7 A Her critique was that time in job may be the case  
8 that individuals, women for example, or Asians, are promoted  
9 more slowly and, therefore, time in job is an endogenous and  
10 so-called tainted variable.

11 Q And what is your response to that critique?

12 A Well, it's interesting that Dr. Madden repeatedly  
13 stated that it makes no difference, whatsoever, which would  
14 imply that in fact it must not be tainted. But in any event,  
15 to the extent, again, going back to my testimony much  
16 earlier, to simply assume that there is taint in time in job  
17 without testing to see if it's the case, I believe would be  
18 inappropriate. And Dr. Madden assumed that, but then  
19 actually demonstrated that it didn't matter.

20 Q And did this critique by Dr. Madden cause you to  
21 change your opinion about the use of time in job as an  
22 appropriate variable in this case?

23 A No.

24 Q The next variable that you testified -- well, the  
25 next variable that I want to discuss in greater detail is the

1 variable that you added, controlling for whether or not the  
2 employee had received a patent bonus at Oracle?

3 A Yes.

4 Q Why did you add this control?

5 A Well, I saw this variable in the data, and I  
6 studied it with respect to its frequency, how often  
7 individuals patented, and I was a little surprised to learn  
8 that at the headquarters location substantial proportion of  
9 employees had received a patent bonus. And so it occurred to  
10 me that this is -- in cases like this, and Dr. Madden  
11 discussed this the other day, we don't frequently get  
12 measures of productivity, direct measures. We get proxies  
13 against which we compare individuals that may relate to that  
14 productivity. But interestingly, receiving a patent bonus  
15 does relate more directly to productivity itself, because it  
16 indicates that individuals receiving the patent bonus were  
17 involved with particularly innovative work. So, that's why I  
18 thought that variable would be an interesting one to put in  
19 the model, to see whether it better explains pay, and to see  
20 whether it has any relationship to gender or race.

21 Q Did you review any documents about how patent  
22 bonuses are awarded at Oracle in formulating this variable?

23 A Yes, I did.

24 Q And what, if anything, did you learn from your  
25 review of those materials?

1           A     Well, there's a lot of material that's available  
2 regarding patents. I don't know whether it's true outside  
3 the headquarters location, but certainly with respect to the  
4 headquarters location. It's apparently a very common  
5 situation that people are involved with patents. For  
6 example, in the IC6 level, something like 70 percent of those  
7 individuals have had one or more patents, which is very  
8 interesting, I found very interesting. So, there's an  
9 internal website that allows employees to examine what kinds  
10 of patents people at Oracle have been involved in, to see how  
11 their work might relate to it. There is a Patent Review  
12 Board within Oracle, that actually has an outside patent  
13 attorney participating. And there's a bit of infrastructure  
14 around this process.

15           Q     You're aware that -- so again, before moving on to  
16 the criticisms of this variable, your use of the patent  
17 variable that you used, you said it was a proxy, is that  
18 correct?

19           A     I think the patent variable is a little bit more  
20 directly related to productivity, it's less of a proxy than  
21 some of the other variables that are being used. It is a --  
22 it is a direct variable on whether or not you created --  
23 whether or not you generated a patent. But then you could  
24 regard it as a proxy or being associated with somebody who is  
25 more productive, all else constant. So, take somebody with

1 all other characteristics the same, doesn't have a patent,  
2 and one who does have a patent, one would presume that the  
3 one with the patent might be more productive, in general.

4 Q You're aware that Dr. Madden has criticized your  
5 use of patent bonus as a variable in your analysis?

6 A Yes.

7 Q And what is your understanding of her criticism?

8 A Well, she did not critique the notion of the patent  
9 itself, she thought that was a reasonable sort of variable  
10 one might consider. She believed it may be endogenous or  
11 somehow tainted in the sense of perhaps access to patent  
12 worthy work might be restricted on the basis of gender or  
13 race. But again, that was an assumption of her, as she did  
14 not test that assumption.

15 Q All right. You partially anticipated my next  
16 question, which is what is your response to that critique?

17 A Well, what I just said, I guess. That there was no  
18 test of that assumption by Dr. Madden, it was simply an  
19 assumption that such a variable might be or could be tainted.

20 Q And did anything about that criticism cause you to  
21 change your opinion about whether it was appropriate to use  
22 the patent variable that you did?

23 A No.

24 Q Let's take a look at slide 35. What does this  
25 slide illustrate?

1           A       Well, I actually did take a look at the issue of  
2 whether there could be potential taint in the patent -- their  
3 use of the patent variable. So, I looked to see the  
4 incidents of patent activity for both women and Asians, in  
5 benchmark external information. So, what I did is I obtained  
6 the U.S. Patent Database, which is a gigantic, messy  
7 database, and sorted through that database -- this was an  
8 extensive project to generate four numbers -- but what I did  
9 was I looked in that database to associate individuals where  
10 the patents were assigned to Oracle. And typically, for  
11 people who work at companies, they have to assign the patent  
12 to the company they work for, but you can see the  
13 individual's name on the patent, you can see the company to  
14 whom it was assigned.

15                 So, I found all the patents assigned to Oracle. I  
16 then had to create both -- I had to identify the individuals  
17 by gender and race, and that's not an easy task, because  
18 there's no data in the patent database. So, I used the  
19 Social Security Administration Dictionary of Gender Names,  
20 names by gender, and names by Asian status. And it's  
21 approximately 80 percent of the people could be identified  
22 using that approach.

23                 And then I did -- the second thing I did was take  
24 all patents in the relevant fields of the Oracle patents, and  
25 the field that the patent is identified in this database at

1 all other companies, and identified the proportion of those  
2 associated with women and Asians. And so the four -- the two  
3 variables, the two numbers on the right side of the top row  
4 are the Oracle, women at Oracle is 11.8 percent, women at  
5 other locations 12.6 percent, those numbers are relatively  
6 close to one another. And for Asians I did the same thing,  
7 patent assigned to Oracle 42.6 percent in the U.S. Patent  
8 Database, and 40.3 percent for those not in Oracle. Again,  
9 those two numbers are close to one another.

10 I then next compared to the proportion of women and  
11 Asians ever receiving a patent bonus at Oracle. And I found  
12 17.8 percent of women and 67.1 percent of Asians had received  
13 a patent at some point in time.

14 Q So, what conclusions do you draw from the results  
15 illustrated on slide 35?

16 A Well, these results are not consistent with the  
17 notion that there is a restriction on women or Asians in  
18 whether or not they get access to patentable types of work.

19 Q Is it your opinion that these results undermine Dr.  
20 Madden's criticism of your use of the patent variable?

21 A Well, they're certainly inconsistent with her  
22 critique that the patent variable is tainted by Oracle, and  
23 is, therefore, endogenous and should not be included in the  
24 analysis.

25 Q I next want to turn, Dr. Saad, to a control that

1 you introduced and testified about for organization. We  
2 talked about this a little bit, but can you explain why you  
3 added this control?

4 A Yes. In order to -- I talked a lot about the broad  
5 range of pay within a job code, and the question is, is there  
6 anything in the data that would allow me to narrow that down  
7 a bit? Well, I looked at the clusters, but the clusters  
8 cannot be used across the whole database, because it's just  
9 for the requisitions of new hires during the period. But the  
10 organization that people are in, that may be a variable that  
11 is associated with the nature of the work that people are  
12 doing. So, I used that variable based partly on testimony of  
13 Mr. Miranda, as I think I said earlier, and partly on the  
14 basis of examining the requisitions and getting a feel and a  
15 sense for the relationship between organizations and the  
16 nature of the work people are doing.

17 Q Let's take a look at slide 36, please. What does  
18 slide 36 illustrate?

19 A Well, these are three snippets that were taken out  
20 of very extensive requisition materials. And those  
21 requisition materials are referred to in the bottom here. I  
22 had an attachment to my rebuttal report that gave a whole  
23 bunch of examples from those requisitions. So, these are  
24 excerpts from three particular requisitions, and if you look  
25 at them they do at least sound like they're relating to

1 different types of work.

2 Q Did you believe that the organization variable was  
3 a perfect proxy for the product on which employees work?

4 A No, I didn't. And in fact, Mr. Miranda said he did  
5 not believe it was a perfect proxy, but that it had a rough  
6 correspondence to products, as I think he put it. I like to  
7 think of it from a labor economics perspective as to the  
8 nature of the work.

9 Q And so even knowing that it wasn't a perfect proxy,  
10 why did you include this control, nonetheless?

11 A Well, in most proxies and most variables in the  
12 real world data are not perfect. For example, the education  
13 data Dr. Madden used is not a perfect proxy. Most of these  
14 variables are not going to be perfect proxies. But the  
15 question is, did it add substantially to the explanation of  
16 differences in pay or variations in pay, and did it relate in  
17 any way to gender or race?

18 Q And what did you find?

19 A I found that it did substantially increase the  
20 explanatory power of the regression model, the use of the  
21 organization variable, and that it did have an affect on the  
22 gender and race relationships found with respect to pay.

23 Q You discussed earlier how tenure may matter  
24 differently for employees performing different types of jobs,  
25 do you recall that testimony?

1           A     Yes.

2           Q     Did you do any analysis like that with respect to  
3 organization?

4           A     Well, I did look within -- it's interesting, if you  
5 look within organizations you can see very different  
6 relationships of compensation to tenure.

7           Q     All right. Let's take a look at slide 37. What  
8 does this slide illustrate?

9           A     Well, slide 37 is actually taken from two pages of  
10 my report and they're just superimposed on the same chart.  
11 So, pages 46 and 47 of my initial report, the blue dots and  
12 the line for the blue dots comes from page 46, and the red  
13 squares, with their line, come from page 47, they're just  
14 placed on the same chart.

15          Q     And what does this slide illustrate?

16          A     It shows that for an organization labeled as BG-41,  
17 Oracle Labs-Rapid-Oracle USA, you see a negative relationship  
18 between compensation and the individuals in that  
19 organization. And then for the other organization that has  
20 the red squares, with the designation of OEF-1, et cetera,  
21 you see a relatively flat, slightly positive relationship  
22 between time in company and, in this case, base pay. So,  
23 very different tenure relationships.

24          Q     Do these different tenure relationship matter for  
25 purposes of a study of gender or race base differences in

1 pay?

2 A They could, to the extent that they correlate to  
3 gender or race, not estimating these relationships correctly  
4 could matter and could alter the relationship to the gender  
5 or race coefficients themselves.

6 Q Is this an example of aggregation bias, with  
7 respect to organization that we discussed earlier?

8 A Well, if you were to aggregate these two together  
9 and take the average of these two organizations, you're going  
10 to get a statistical relationship that is not representative  
11 of either one of these organizations, alone.

12 Q Dr. Saad, did you review Dr. Madden's discussion of  
13 the organization variable that you used in her rebuttal  
14 report?

15 A Yes.

16 Q And did anything in that discussion cause you to  
17 change your opinion about whether it was appropriate to  
18 control for organization in the pay models?

19 A No.

20 Q Okay. I want to walk through some of Dr. Madden's  
21 points and your response. Do you recall reading Dr. Madden's  
22 criticism that there should be no difference by race or  
23 gender in the organizations in which employees work, and that  
24 any differences would be due to Oracle placing employees in  
25 organizations where pay is lower?

1           A     I recall that.

2           Q     And what is your response to that criticism?

3           A     Well, she starts off in that passage assuming that  
4     there should be no differences and that any differences that  
5     are observed are entirely due to bias decisions by Oracle and  
6     not due to the characteristics of the workers themselves.

7           Q     Let's take a look at slide 38.  What does this  
8     particular slide show?

9           A     Well, in my rebuttal report, I did look at initial  
10    assignments to organization, again using the requisition  
11    data.  So, not only could you look at -- so you could look at  
12    -- people apply to particular organizations, pursuant to a  
13    particular requisition.  The question is did they end up in  
14    the organization to which they applied, yes or no, and how  
15    does that differ by gender or race?  And so if you look at  
16    this, this looks at all of the subsets, demographic subsets  
17    of employees, women, men, African-American, Asian and White.  
18    And the red portion of each of the pies is the proportion who  
19    received or who ended up in the organization to which they  
20    applied.  And those numbers are all essentially the same,  
21    they're all around 80 percent, slightly more or right at 80  
22    percent.  So, there's basically no difference here between  
23    the organization people applied to go to and the organization  
24    that they ended up in.

25          Q     And so what conclusions did you reach based on this

1 study, with respect to your use of the organization variable  
2 in your revised models -- in your revisions to the models  
3 created by Dr. Madden?

4 A Well, these results here are when these individuals  
5 are outside of Oracle and they're applying to Oracle, so they  
6 are in an exogenous state of applying. And these results are  
7 inconsistent with the notion that Oracle is assigning, in  
8 some bias manner, individuals to different organizations.

9 Q Do you also recall reading Dr. Madden's criticism  
10 that it is a truism of labor economics that employees with  
11 the same skills will not accept less pay, simply because they  
12 are working on a product that is less profitable?

13 A Yes, I heard that.

14 Q And what is your response to that point?

15 A Well, it would be a truism if they're exactly the  
16 same employees working on two different products at different  
17 levels of profitability. Yes, then they would be expected to  
18 earn the same amount. However, in the context here, the fact  
19 that employees are working on different -- in different  
20 organizations and earning very different amounts of pay, the  
21 premise that employees are similar is probably incorrect. In  
22 fact, those employees are likely to have different skills.

23 Q Dr. Saad, do you recall Dr. Madden's criticism that  
24 individuals regularly move across organizations, such that it  
25 doesn't serve to meaningfully track the skills that any of

1       them have?

2           A       Yes.

3           Q       And what is your response to that criticism?

4           A       Well, it's partially based on an incorrect analysis  
5       that she did, I think it was Table R-5 was a table that had a  
6       programming error in it, which I think she alluded to in her  
7       testimony. So, it made it look like there was much more  
8       movement than there really was.

9           Q       once the table was corrected -- well, did you see  
10       the corrected table?

11          A       Yes, I did.

12          Q       And once the table was corrected, did it show that  
13       approximately half of the individuals at issue earned --  
14       worked in only a single organization across all years?

15          A       Yes.

16          Q       Did it also show that approximately another quarter  
17       worked in only one organization across all of the years  
18       studied?

19          A       Well --

20          Q       Excuse me -- two -- sorry -- strike that. Let me  
21       try it again.

22                    Did it also show that, approximately, another  
23       quarter of the employees at issue worked in only two  
24       organizations across all the years that were studied?

25          A       Yes.

1 Q And so what is your response to those findings in  
2 the revised table?

3 A Well, there's much less movement than Dr. Madden  
4 was presuming, initially. And furthermore, that's over the  
5 period of 2013 to 2018. If you look within any one year,  
6 it's going to be more than 80 percent, maybe 90 percent who  
7 are not moving between organizations.

8 Q Do you recall Dr. Madden's critique that adding  
9 organization results adds too many controls to her pay  
10 models?

11 A Yes, I do.

12 Q And what is your response to that criticism?

13 A If it added too many controls -- first of all, if  
14 it added literally too many controls, your regression model  
15 wouldn't run at all.

16 Q Do you have any other responses to that criticism?

17 A Yes. If you add a relatively large number of  
18 variables and that relatively large number of variables has a  
19 meaningful impact on the explanatory power of your model,  
20 meaning that it does explain pay and it relates in a  
21 significant manner to pay, then there's much less of an  
22 effect of adding a lot of variables.

23 What Dr. Madden is talking about is adding a number  
24 of variables that may not have a meaningful relationship to  
25 the thing you're studying, such as pay. If you add what are

1 called spurious variables or unrelated variables, that can  
2 create the sort of problems she's describing. But the  
3 organization variables as a set have a meaningful and a  
4 substantial explanatory relationship to pay.

5 Q Relatedly, do you recall Dr. Madden's critique that  
6 the introduction of the organizational variable violates the  
7 principle that at least 50 employees need to share a control  
8 variable in a model?

9 A Yes, I recall that.

10 Q Do you agree with that point?

11 A No, that is incorrect as she stated it.

12 Q Why do you say it is incorrect?

13 A Because there's no comparisons going on within an  
14 organization between, let's say, men and women. You're not  
15 looking -- that's not the nature of that control. It's the  
16 same as the job title control, there's no comparisons of men  
17 and women within jobs, there's on comparison of differences  
18 in pay between men and women, taking into account the jobs  
19 they hold. That's a very different question, so it's  
20 completely false to state it the way she did, that any  
21 variable in your model, that you place in, should have 50  
22 individuals of the two types that you are studying within  
23 them. That is not the purpose. The purpose of the  
24 organization control is to take into account the distribution  
25 of men and women, or Asians and whites, across these

1 organizations. If that distribution differs in some way that  
2 is correlated to pay, that should be taken into account and  
3 adjusted for, then you can observe whether it has an impact  
4 on gender or race. You're not looking within any  
5 organization to determine whether or not men and women are  
6 paid differently within an organization.

7 Q And finally, do you recall Dr. Madden's criticism  
8 that introducing controls for organization slices and dices  
9 the data and, thus, undermines precision?

10 A Yes.

11 Q And what is your response to that criticism?

12 A Well, it doesn't slice and dice the data. Slicing  
13 and dicing of the data refers to having smaller  
14 sub-populations and analyzing them separately. All of the  
15 same -- a number of observations are in my analyses, I simply  
16 add more variables. And again, you are not trying to compare  
17 within those relatively small buckets. Some of them are  
18 larger buckets, there are organizations with almost 200  
19 people in them, but some of them are quite small. But you're  
20 not trying to compare within them. You're simply trying to  
21 take into account differences in pay as a function of  
22 organization in general.

23 Q And so having gone through, in greater details, all  
24 of the variable -- all of the -- strike that.

25 Having gone through, in greater detail, the

1 variables that you did add, what ultimate conclusions did you  
2 reach regarding Dr. Madden's models, once your revisions were  
3 taken into account?

4 A Yes. With the refinements that I proposed, again  
5 staying with the aggregated format and so on, I find that  
6 there's no statistically significant pattern or systemic  
7 pattern with respect to the compensation of women, Asians or  
8 African-Americans.

9 Q And you noted in the answer that you just gave,  
10 staying with the aggregated format, why did you think that  
11 that was an important point to make?

12 A Because it may not be the case that these  
13 aggregations are the correct aggregations to study this data,  
14 I took them for granted. But I said earlier, for example,  
15 college hires and experienced hires are quite distinct,  
16 acquired individuals, quite distinct. Maybe that's a better  
17 way to study them, but my assignment was to respond to Dr.  
18 Madden and propose refinements. There could be additional  
19 refinements I could propose, but the refinements I proposed  
20 were sufficient to call into question her conclusions.

21 Q Okay. I want to take a look now at slides 39  
22 through 43, starting with slide 39. Can you tell us what --  
23 well, first of all, what is this slide?

24 A So, this is similar to a slide that we looked at  
25 earlier. This is the refinement of Dr. Madden's model for

1 women in Info Tech, and it just shows, of the years 2013 to  
2 '18, the same thing that we discussed earlier, building up by  
3 adding variable sequentially all the way to Column 6, which  
4 is there the ultimate conclusion resides.

5 Q And what conclusions did you draw from this table,  
6 with regard to women in Info Tech, once your revisions were  
7 added to Dr. Madden's model?

8 A Well, if you look at the T values, which are the  
9 standard deviations, only one out of those six years has a  
10 statistically significant and negative relationship between  
11 gender and compensation, and the other five years are not  
12 statistically significantly different.

13 Q And now let's take a look at slide 40. We already  
14 looked at this slide, so I won't ask you, but just for  
15 identification purposes, this is the same slide that we  
16 looked at earlier, correct?

17 A Yes, yes, it is.

18 Q All right. Let's then take a look at slide 41.  
19 What does this slide illustrate?

20 A This is looking at women in the support job  
21 function and conducting the same analysis. Now, the number  
22 of workers here is very small, so if you look at 2013 you  
23 only have 233 workers in this analysis. So, it's going to be  
24 tough to do much with this. However, the T value is slightly  
25 over 2, but again it's 233 individuals, so it's not something

1 you can necessarily be that confident of. 2014 is also  
2 statistically significant by the measure of standard  
3 deviations. But then when you go to years 2015 through '18,  
4 you can see the substantial drop-off in the number of workers  
5 in those analyses, and the number of workers there really  
6 drops down very low, such that none of the results are  
7 statistically significant.

8 Q And what conclusions, if any, did you draw from the  
9 results reflected in Table 3?

10 A Well, it's not clear. And actually, if you look at  
11 -- there's actually -- I forgot to mention there are three  
12 years with a positive coefficient on gender, although none of  
13 them are significant, those are 2014, '15, '16 and '18.  
14 There's no pattern that one can discern here between pay and  
15 gender in the Support function, when looked at by itself.

16 Q Now, let's look at the next slide, what does slide  
17 42 illustrate?

18 A This looks at Product Development and looks at the  
19 compensation of Asians relative to Whites.

20 Q Okay. And I think it's already clear, but just to  
21 confirm, the revisions that you made in Table 1, those are  
22 the same across all of these tables, correct?

23 A That's correct.

24 Q Okay. And what conclusions do you draw based on  
25 the results of Table 4?

1           A     Well, again, going to Column 6, you can see that  
2     the T values there, only one year has a statistically  
3     significant result, and that's 2018, a value of 2.08 is  
4     statistically significant relative to the benchmark of  
5     approximately 2, but in each of the other five years there's  
6     no statistically significant difference in compensation of  
7     Asians and White employees.

8           Q     So, what conclusion do you draw from those results?

9           A     That there's no evidence that they're statistically  
10    significant shortfalls in pay of Asians, in Product  
11    Development, over the period 2013 to '18.

12          Q     All right. And then let's take a look at slide 43,  
13    please. What does slide 43 show?

14          A     This is looking at African-American employees in  
15    Product Development, and if you look at the number of  
16    workers, the number of workers drops, and that's primarily  
17    because the percentage of African-Americans in Product  
18    Development is lower than for either the Asian or the female  
19    analyses. And if you look at the Column 6 results, there are  
20    no statistically significant differences in pay for  
21    African-Americans in Product Development.

22          Q     And so what conclusion do you draw from those  
23    results?

24          A     That the refinements in Dr. Madden's model suggests  
25    that there's no shortfall in the pay to African-Americans who

1 are similarly situated with respect to the work that they do.

2 Q You talked earlier about R squared values for Dr.  
3 Madden's models. What happened to those values when your  
4 refinements to her models were added?

5 A They go up considerably.

6 Q Without going through all the specific R squared  
7 values, can you give us an estimate of how they changed?

8 A I think they're almost all above 80 percent, 85  
9 percent. There's some in the smaller organization, the  
10 smaller job function, that actually get into the mid 90s,  
11 just because of the nature of that particular data set. But  
12 in general they're in the mid 80 percent range.

13 Q And in every case did your refinements increase the  
14 R squared values of Dr. Madden's models?

15 A Yes, they did.

16 Q And what did those values, as compared to the R  
17 squared values of Dr. Madden's analysis mean to you, if  
18 anything?

19 A Well, that I've identified more of the variation in  
20 pay with factors that are associated with these employees.  
21 So, there's less omitted at the end of the day in the  
22 analyses I've done, relative to what Dr. Madden has done in,  
23 certainly in her Column 5 and 6 models, but also in her  
24 Column 8 models.

25 MS. CONNELL: Your Honor, I am going to now pivot

1 to assignments, but I also note that it's 12:25 o'clock p.m.

2 I can certainly get started on this topic, although it is  
3 somewhat of a natural breaking point.

4 JUDGE CLARK: Yeah, it seems like a good breaking  
5 point then. I'm just going to call it 12:30 o'clock p.m.,  
6 we'll go ahead and take our lunch recess, we'll be back at  
7 1:30 o'clock p.m.

8 So, we'll be off the record until 1:30 o'clock p.m.

9 (Whereupon, at 12:30 o'clock p.m., the hearing was  
10 recessed for lunch.)

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1 AFTERNOON SESSION

1:30 O'CLOCK P.M.

2 JUDGE CLARK: Okay. We are back on the record, all  
3 parties are present. Dr. Saad is back on the stand.

4 Ms. Connell, you may continue.

5 MS. CONNELL: Thank you.

6 DIRECT EXAMINATION RESUMED

7 BY MS. CONNELL:

8 Q Dr. Saad, as I indicated before the break, I'd now  
9 like to shift our focus to the evidence in this case related  
10 to OFCCP's allegation of discriminatory job assignments. As  
11 an initial matter, how does one study whether there is  
12 evidence of discriminatory job assignments from a statistical  
13 perspective?

14 A Well, in general terms you would look at to see  
15 whether the selection decisions made in terms of where people  
16 end up in their initial assignments in a company, whether  
17 those are related to factors that are in their backgrounds  
18 and so on, and whether there's some relationship to gender or  
19 race. But you would look at the decisions, themselves.

20 Q All right. Is that another way of saying that you  
21 need to study how employees came to hold the jobs they do?

22 A Yes.

23 Q Both you and Dr. Madden have testified about the  
24 concept of a dependent variable in a regression model. In a  
25 study of whether there is evidence of discriminatory job

1 assignments, what should the dependent variable be?

2 A Well, whatever type of analysis it is, a dependent  
3 variable should be the event that you're studying, which is  
4 assignment decisions.

5 Q So, in a study of whether there is evidence of  
6 discriminatory job assignments, should the dependent variable  
7 be pay?

8 A Generally speaking, no. It would be better to  
9 focus directly on the variable, the process of interest,  
10 which is decision assignments.

11 Q I want to focus first on assignments at the time of  
12 hire. I'm going to refer to those as initial assignments.  
13 Did Dr. Madden do a study of initial assignment outcomes in  
14 her initial report in this case?

15 A No, she didn't.

16 Q Are you familiar with Tables 5 through 7 of her  
17 initial report?

18 A Yes.

19 Q And is it your opinion that those are not a study  
20 of initial assignment outcomes?

21 A They are not.

22 Q Why do you say that?

23 A Because they don't directly look at the initial  
24 assignment, the process of initial assignment and the  
25 selection decisions involved.

1           Q     Did you do a study of initial assignments in your  
2 initial report in this case?

3           A     I did.

4           Q     And can you explain to us that analysis and what  
5 your findings were?

6           A     Well, there were two parts to it. One was to look  
7 to see the positions to which, by level, the positions to  
8 which women, Asians and African-Americans applied. So, I did  
9 observe the, essentially, the distribution of the  
10 applications to the various levels. And then I took,  
11 conditional on the application to levels, whether or not  
12 individuals of different race and gender received the level  
13 that they applied to.

14          Q     Okay. And -- all right. Let's take a look at  
15 slide 44. What does this slide illustrate?

16          A     Well, this is the first part of what I did. I  
17 simply took a look at what the composition was of the  
18 applications to the different IC and M level positions. And  
19 the blue bars represent, in this case, women, and the red  
20 bars represent men. And this is simply a distribution of the  
21 applications that were made by men and women to jobs at  
22 different levels, whether IC or M.

23          Q     And what does this slide show?

24          A     It shows there are statistically significant  
25 differences in the application of women to IC jobs, the

1 composition is statistically significantly different in terms  
2 of what they are choosing to apply to. And it is not  
3 statistically significantly different in terms of the manager  
4 jobs, despite the differences in the heights of the bars, the  
5 result is not statistically significant.

6 Q Okay. And what employee -- what was the scope of  
7 the employee population that you studied in this analysis?

8 A These are people who applied -- I believe this is  
9 just to Product Development jobs.

10 Q And do you recall the time period at issue?

11 A Yes. This was -- I believe it's from 2010 to 2018.

12 This was responsive to the Second Amended Complaint review  
13 of the same process with respect to Product Development in  
14 particular.

15 Q Okay. So, you anticipated part of my next  
16 question, which is why was it that you were focused on this  
17 particular population, when doing this analysis?

18 A Again, it was because I was responding to what the  
19 Second Amended Complaint -- what the OFCCP had proposed in  
20 the Second Amended Complaint.

21 Q Okay. So, if I'm understanding your testimony,  
22 this was the population that OFCCP analyzed --

23 A Yes.

24 Q -- with regard to job assignments in the Second  
25 Amended Complaint?

1           A     That's correct.

2           Q     Okay.  And let's take a look at slide 45 and what  
3 does this slide illustrate?

4           A     It does the same exercise for Asians as compared to  
5 Whites.

6           Q     And what does it show?

7           A     It shows that for both individual contributors and  
8 for managers there are statistically significant differences  
9 in the levels to which Asians and White applicants applied,  
10 from the external labor market.

11          Q     Okay.  And again, is the population that you  
12 studied in this analyses the same population that was studied  
13 by OFCCP in the Second Amended Complaint, with regard to  
14 initial job assignments?

15          A     Yes.

16          Q     And is that why you studied this particular  
17 employee population in doing this analysis?

18          A     Yes, it is.

19          Q     Was this the -- what conclusions, if any, did you  
20 form based on the results that we reviewed in slides 45 and  
21 -- 44 and 45?

22          A     That with the exception of application to different  
23 levels of managerial levels, for women there is a  
24 statistically significant difference in the patterns of  
25 application of both women and Asians, as compared to their

1 comparators.

2 Q Okay. And if I'm understanding you, these two  
3 slides are analyzing only the jobs to which people applied,  
4 not the jobs into which they are hired, is that correct?

5 A That's correct.

6 Q Was that the end of your analysis of jobs at hire?

7 A No.

8 Q What else did you analyze?

9 A Well, the next thing that I did was to ask the  
10 question were women or Asians, or African-Americans, leveled  
11 up or leveled down? My understanding is that when  
12 individuals are being hired, pursuant to a requisition, at a  
13 particular level, let's say IC4, that depending on the nature  
14 of the job and the nature of the skills and qualifications of  
15 the individual applicant, that the decision maker or hiring  
16 manager has the opportunity to say we'd like to hire you, but  
17 we think you should be hired in at IC3, or, correspondingly,  
18 they could say we think you should be hired in as IC5, they  
19 can level up or level down, my understanding is, one level.

20 Q Okay. And what did your analysis with regard to  
21 that show?

22 A Well, what I did is I tested the -- there are three  
23 possible outcomes, in other words, when somebody applies.  
24 One outcome is you get a job -- you get the job at the level  
25 that you applied for and it was posted in the requisition,

1 you get one level below or you get one level above. So, I  
2 looked at the composition of the level up, level down, stay  
3 the same, for women as compared to men and Asians as compared  
4 to Whites.

5 Q All right. And let's take a look at slide 46, and  
6 what does this slide illustrate?

7 A Well, this is a starting point just looking at the  
8 "got the level applied to," in other words level being the  
9 same result. So, for women, 72.3 percent of the women who  
10 applied to a particular level ended up at that level when  
11 they came on the job, 72.5 percent of women applying to M  
12 level positions ended up at the level they applied to. And  
13 so on. You see for men, 66 percent ended up at the same  
14 level they applied to for IC focal review, 81 percent of men  
15 ended up at the level they applied to for M positions. For  
16 African-Americans, there wasn't sufficient data to analyze M  
17 level applications, but for IC level positions, 71.4 percent  
18 of them got the levels that they applied to. Finally, for  
19 Asians, the IC and M level percentages are 65.2 and 81.1  
20 percent, respectively. Finally, the benchmark, White, for  
21 the Asian and African-American analysis, is 72.6 and 82.4  
22 percent respectively.

23 Q And so what conclusions did you draw from the  
24 results illustrated on slide 46?

25 A That the majority of people ended up in positions

1 at the level they applied to.

2 Q All right. Let's take a look at slide 47. What  
3 does this slide indicate?

4 A This is an analysis of looking at women whether  
5 they were leveled up or leveled down. And you can see the  
6 three pairs of bars -- there's higher/leveled up, same/not  
7 changed and lower/leveled down. And it conducts a  
8 statistical test called a "KAI Score Test," asking if there's  
9 a statistically significant difference in the allocation of  
10 men and women across these buckets of higher, same and lower.

11 And the conclusion was that there's no statistically  
12 significant difference, because the P value is greater than  
13 .05, in fact it's .1063, as you can see in the upper left of  
14 the chart.

15 Q And so what conclusions did you draw based on the  
16 results illustrated on slide 47?

17 A That there's no difference with respect to the  
18 level outcome of women who are applying to Oracle, given what  
19 level they have applied for. So, there's no basis to assume  
20 that there's some sort of steering to lower positions, for  
21 example, relative to the positions that they applied to for  
22 women.

23 Q Okay. So, if I'm understanding, this is just a  
24 comparison of the job applied to and then the job hired into,  
25 is that correct?

1 A Correct.

2 Q All right. Let's take a look at slide 48. What  
3 does this slide illustrate?

4 A This is looking again at women, but this time into  
5 M level positions. And it's similar construction, the  
6 higher, same and lower, or the same three outcomes. And once  
7 again, the statistical test concludes that there's no  
8 statistically significant difference between the outcomes  
9 relative to what women applied to with respect to the M level  
10 jobs.

11 Q And so what conclusions did you reach, based on the  
12 results illustrated in slide 48?

13 A That the levels to which women were applying, when  
14 they were applying for M level, M career levels, are in line  
15 with what they were requesting.

16 Q Let's take a look at slide 49. What does this  
17 slide illustrate?

18 A This does the same analysis, this time IC career  
19 levels and considered the experiences of Asians relative to  
20 Whites.

21 Q And what does it show?

22 A This shows that there is a statistically  
23 significant difference with respect to the leveling of Asians  
24 relative to Whites, and in particular, if you look at the  
25 pairs of bars on the far right, you can see that the lower

1 bar -- the lower pairs of bars --

2 Q Yes.

3 A -- there's what visually appears to be a higher  
4 proportion of Asians leveled lower, with respect to the level  
5 to which they applied.

6 Q And on the right-hand side of this slide, there's a  
7 box referencing age. Do you see where I'm looking?

8 A Yes.

9 Q Can you explain what that is communicating?

10 A Yes. You may recall that Dr. Madden testified the  
11 other day -- I also observed the same thing -- that the  
12 Asians are considerably younger than the other subsets of  
13 individuals, other races at Oracle. So, to the extent that  
14 age may factor into this process of leveling, I conducted a  
15 further analysis where I took into account both age and what  
16 you applied for, in what's called an "Ordered Logit  
17 Analysis," a type of regression analysis that asks for these  
18 three different outcomes, whether there's a relationship  
19 between Asian and where you end up, taking into account age.

20 And it turns out that once age is taken into account, the  
21 statistically significant result is no longer found, and then  
22 turns out that Asians are receiving the levels to which they  
23 applied.

24 Q Okay. So, you somewhat anticipated my next  
25 question. What did you conclude, based on the results of the

1 analyses you just described?

2 A That taking age into account, in the analysis of  
3 application to IC career levels, Asians received the IC  
4 career levels to which they applied.

5 Q Okay. And just for clarity on the record, this  
6 additional analysis that you reference, with regard to age,  
7 that's in your report, correct?

8 A Yes, it is.

9 Q Okay. All right. Let's take a look at slide 50.  
10 What does this slide show?

11 A Finally, this is looking at Asians relative to  
12 application to M career levels. And once again, it has the  
13 same construction and conclusion here is that there's no  
14 statistically significant relationship between Asian status  
15 and application to M career levels. And in this case age is  
16 not a factor, because these M career levels are considerably  
17 higher level positions, generally, and all the individuals  
18 applying to them tend to be somewhat older.

19 Q And what conclusions did you draw, based on the  
20 results illustrated in slide 50?

21 A That Asians received the M level positions to which  
22 they applied.

23 Q All right. And finally, let's take a look at slide  
24 51. Can you explain to us what this slide is illustrating?

25 A Yes. This is showing the application to IC career

1 levels, comparing African-Americans to Whites and looking at  
2 the proportions who are receiving the same level to which  
3 they applied, the proportions receiving a higher level, and  
4 the proportions receiving a lower level. And this analysis  
5 finds that there's no statistically significant difference  
6 between African-Americans and Whites who are applying in  
7 terms of the IC career level they receive, compared to the IC  
8 level they applied to.

9 Q And just for purposes of the record, this slide  
10 indicates that the years at issue here were 2013 to 2018, do  
11 you see where I'm looking?

12 A Yes.

13 Q You earlier, I believe, testified that the time  
14 period at issue in these analyses was 2010 to 2018?

15 A You're right.

16 Q Does this refresh your recollection as to the time  
17 period analyzed?

18 A Yes. It's -- all of these charts are 2013 to 2018.

19 Q Okay. And all of that is reflected in your report,  
20 correct?

21 A That's correct.

22 Q Okay. What conclusions -- what ultimate  
23 conclusions did you draw based on the collection of analyses  
24 that we've reviewed in slides 47 through 51?

25 A Taken collectively, they do not support any

1 inference that there's some sort of taint or bias in the way  
2 in which Oracle handles the initial assignments that  
3 individuals receive at Oracle.

4 Q Dr. Saad, do you recall Dr. Madden's criticism, in  
5 her rebuttal report, that your analysis regarding job  
6 assignment and hire analyzed too small of a subset of the  
7 employees at issue?

8 A Yes.

9 Q And what is your response to that criticism?

10 A Well, what I did -- this, I believe, is one of the  
11 tables in her rebuttal report, but the denominators that she  
12 uses are incorrect. What I have done is analyzed all  
13 applications, again for Product Development over this period  
14 2013 to 2018. Now, it turns out there were about 1,800  
15 requisitions in total, of which 1,661 could be matched to an  
16 employee. That is over 90 percent, it's about 91 percent.  
17 So, I actually did analyze 91 percent of all requisitions and  
18 initial assignment information that I could, with respect to  
19 Product Development.

20 Q And again, the reason that you were focused on  
21 Product Development, for those years that you articulated, is  
22 because you were responding to an analysis that OFCCP had  
23 done, and OFCCP analyzed that population, is that correct?

24 A That is correct.

25 Q Okay. Next, Dr. Saad, do you recall Dr. Madden's

1 criticism that you failed to control for so-called exogenous  
2 characteristics in this analysis regarding global career  
3 level at hire?

4 A Yes.

5 Q And what is your response to that criticism?

6 A My response is what I'm looking at is exogenous  
7 characteristics by which I would take to mean education, for  
8 example, or age as to exogenous characteristics she looked  
9 at. In one analysis I did control for age, and that was  
10 Asians with respect to IC levels. But in the others, the  
11 point was, if you assume that if you were taking the  
12 individuals and they are seeking particular levels, they're  
13 asking -- I would like IC3, I would like IC4 -- the question  
14 is whether or not they get those, what is the outcome. And I  
15 viewed that as somewhat independent of background  
16 qualifications. Now, if you were asking as to who actually  
17 got hired, versus who didn't get hired, then I would  
18 definitely want to take an extensive look at background  
19 qualifications in order to conduct such an analysis. But  
20 here, I was looking at a simple allocation analysis to see  
21 whether there was a relationship to gender or race.

22 Q Okay. Is that somewhat a different way of saying  
23 that you would take those things into account if you were  
24 doing a hiring analysis?

25 A Yes.

1           Q     Finally, Dr. Saad, do you recall Dr. Madden's  
2 criticism that in conducting this analysis you failed to  
3 control for global career level in this analysis, when you  
4 didn't break it up by global career level?

5           A     Yes, I recall that.

6           Q     And what is your response to that criticism?

7           A     Well, I was looking overall whether individuals  
8 were leveled up or leveled down. What Dr. Madden did was to  
9 break it apart and look at subsets of the data separately.

10          Q     And are those subsets, is the ways in which Dr.  
11 Madden broke it apart, are those analyses reflected in Charts  
12 R-1 and R-2 of her rebuttal report?

13          A     Yes, they are.

14          Q     And did those analyses and their conclusions change  
15 your opinion?

16          A     No.

17          Q     Why not?

18          A     Because it only showed there were a couple of  
19 instances, once you looked at it level by level, where the  
20 individuals were leveled up or leveled down differently. It's  
21 only a handful of instances across all of the different  
22 possible levels at both the IC and the M level. And that  
23 certainly would not suggest to me that there would be a  
24 pattern, of any kind, that would be revealed by breaking  
25 apart the IC or M levels, as opposed to considering the ICs

1 together or the Ms together.

2 Q All right. Let's take a look at slide 52. What  
3 does this slide show?

4 A What this shows, for the IC levels that were shown  
5 in Dr. Madden's report, I think in Charts R-1 and R-2, as you  
6 can see in the footnote, the Xs are instances where there was  
7 no statistical significance found, so therefore women  
8 applying to IC3 positions, there's no statistically  
9 significant difference conducting the analysis the way that I  
10 did for IC3 alone. There is for IC4. There isn't for women  
11 applying to IC5. And no other IC or M levels were presented  
12 by Dr. Madden.

13 Then for Asians, it turns out that there was, from  
14 IC3, there was no difference between the leveling of Asians  
15 applying to IC3 positions, and there was statistically  
16 significant differences if you restricted her view to just  
17 IC4 or just IC5. But then there were no differences or no  
18 information presented for any of the M levels for the Asians,  
19 and not for the other IC levels for the Asians, either.

20 Q And did she conduct analyses for women for the  
21 other IC levels or M levels?

22 A Nothing else other than these three IC levels are  
23 presented in her report.

24 Q Okay. And so what was your conclusion in reviewing  
25 the results, as summarized, on slide 52?

1           A     Again, if one is just looking at this handful, half  
2 of them are statistically significant, the other half are  
3 not. And all the other M and IC levels not analyzed are  
4 simply not analyzed by Dr. Madden, presumably because none of  
5 them are statistically significant.

6           Q     In summary, Dr. Saad, what is your opinion as to  
7 evidence of initial assignment discrimination in this case?

8           A     That I see no evidence that there is anything --  
9 any pattern of systemic imbalance in the proportions of  
10 women, Asians or African-Americans receiving different levels  
11 than those that they applied to.

12          Q     I want to turn your attention now to promotions.  
13 Did Dr. Madden present an analysis of promotions in her  
14 initial report?

15          A     She did, yes.

16          Q     And do you recall where that is located?

17          A     Yes. It's in an appendix to her report, it's not  
18 in the body of the report.

19          Q     And do you recall what she claimed that analysis  
20 showed?

21          A     Yes. I think it was called Appendix B. I believe  
22 what she found was that there were, according to her  
23 analysis, that individuals -- women in IC3 level positions  
24 were promoted at a rate less than expected, and women in IC4  
25 positions were promoted at a rate less than expected. I

1 think that's what she concluded.

2 Q And do you know if she ran analyses regarding other  
3 IC levels or M levels?

4 A I don't think she -- there were -- she did run  
5 analyses for women for IC and M levels, yes. And those were  
6 contained in her backup.

7 Q But they were not reflected in Appendix B, is that  
8 correct?

9 A They were not in Appendix B, just in the backup.

10 Q Let's take a look at slide 53. What does slide 53  
11 illustrate? Well, first of all, do you recognize slide 53?

12 A Yes, I do.

13 Q Is this -- what is it?

14 A This is a table that was in my rebuttal report.

15 Q And what does it show?

16 A What it does is it highlights, in grey, the results  
17 that Dr. Madden presented in Appendix B of her analysis, but  
18 then it shows all of the other results in applying the same  
19 model that Dr. Madden applied for IC3 and IC4 for women, to  
20 all the other IC and M levels.

21 Q And can you summarize for us what these results  
22 show?

23 A Yes. If you look at the standard deviation column  
24 on the far right, you'll see that there are no other  
25 statistically significant negative standard deviations

1 indicated. There's one statistically significant positive  
2 standard deviation, which is that women being -- women in  
3 five positions were, according to Dr. Madden's model,  
4 statistically significantly promoted at greater rate --  
5 promoted at rates greater than men to a statistically  
6 significant degree.

7 Q Do you recall testimony from Dr. Madden that the  
8 results for M5 were not meaningful, because there were too  
9 few women at the M5 level?

10 A Yes, I heard that testimony.

11 Q Do you agree with it?

12 A No.

13 Q Why not?

14 A Because there are probably between 200 and 300  
15 women in that population of 1,746 individuals in the M5  
16 analysis.

17 Q And what's your basis for that estimate?

18 A Just based on the fact that the proportion of women  
19 at Oracle is approximately in the 25 to 30 percent range, and  
20 to the extent that M5 -- if women were even a smaller  
21 proportion there, they would still be 200 to 300 individuals.

22 Q And what conclusions, if any, do you draw from the  
23 results illustrated on slide 53?

24 A That this does not show any pattern of disparities  
25 in promotions for women at Oracle.

1 Q Let's take a look at slide 54, what does -- well,  
2 first of all, do you recognize slide 54?

3 A Yes. This is from my rebuttal report.

4 Q And what does slide 54 show?

5 A Slide 54 is taking the same model that -- same  
6 statistical model that Dr. Madden applied to women, for her  
7 Appendix B results, and applying it, instead, to Asians. She  
8 did not do this, but I took her model and applied it to  
9 Asians, and presented it in my rebuttal report.

10 Q And what did the results show?

11 A That there are no statistically significant  
12 shortfalls in promotion, using Dr. Madden's approach to  
13 promotion, but there are two instances of statistically  
14 significant excesses of promotions of Asians relative to  
15 Whites.

16 Q And so what conclusions, if any, do you draw from  
17 the results illustrated on slide 54?

18 A That there are no adverse outcomes with respect to  
19 promotion, based on Dr. Madden's model for Asians at Oracle,  
20 in either IC or M levels.

21 Q Okay. Let's take a look at slide 55. Do you  
22 recognize slide 55?

23 A Yes.

24 Q What is it?

25 A It is, again, the same approach that Dr. Madden

1 used with respect to women at Oracle applied to  
2 African-Americans as compared to Whites in Product  
3 Development.

4 Q And is this a table that's found in your rebuttal  
5 report, page 60?

6 A Yes, it is.

7 Q Okay. And can you describe for us what this -- the  
8 results of this analysis?

9 A Well, what it shows is that there are no  
10 statistically significant shortfalls in the promotion of  
11 African-Americans from IC or M levels. There's one  
12 statistically significant excess in promotions from IC2.  
13 There are several positive coefficients and there's a  
14 negative coefficient.

15 Q So, what conclusions, if any, do you draw from the  
16 results illustrated on slide 55?

17 A That there's no pattern of promotions adverse to  
18 African-Americans from IC or M levels, given Dr. Madden's  
19 approach to promotions.

20 Q Turning now to Dr. Madden's rebuttal report, did  
21 she present any analysis of promotions in her rebuttal  
22 report?

23 A No, she didn't.

24 Q Did she present any analysis in her rebuttal report  
25 of job assignments post hire?

1 A Not to post hire, no.

2 Q Are you familiar with the analysis that she  
3 presented at Table R-10?

4 A Yes, I am.

5 Q And what did she claim that analysis showed?

6 A As I recall, R-10 is her analysis of pay growth.

7 MS. CONNELL: Okay. Can we actually pull up Table  
8 R-10, please?

9 BY MS. CONNELL:

10 Q And does her Table R-10 show differences in pay  
11 growth for Asians?

12 A No, it does not.

13 Q Does Table R-10 show any differences in pay growth  
14 for women?

15 A In four of the six years it purports to show  
16 statistically significant smaller pay growth for women.

17 Q And do you believe that the results illustrated in  
18 Table R-10 are reliable?

19 A No, I do not.

20 Q Why not?

21 A Because for several reasons, the econometric  
22 specification is an odd one in which the change in pay on the  
23 left-hand side, meaning the deep ended variables in change in  
24 pay. So, it's the change of the pay this year, relative to  
25 the pay last year. Dr. Madden puts the pay last year on the

1 right-hand side of the model and that creates particular  
2 econometric problems when you have one of the variables that  
3 constructs your deep ended variable also on the right-hand  
4 side of the equation.

5 Q And so can you explain why what you just described  
6 supports your conclusion that the results reflected in Table  
7 R-10 are not reliable?

8 A Because she's got -- on the right-hand side -- a  
9 variable that she also has on the left-hand side.

10 Q And so what are the implications of that?

11 A That's just incorrect econometrically. And so you  
12 cannot rely on the results of this table. I approached  
13 exactly the same problem and computed the percentage change  
14 in pay in adjacent years directly and found different  
15 results. Now, something else that Dr. Madden did in this  
16 analysis, she took out change in job and arguing that taking  
17 out change in job would understate the differences in pay  
18 growth. But the fact is, if you're looking at raise  
19 practices and you want to know by how much are individuals  
20 pay raised in the same job, that's the analysis that I was  
21 doing.

22 I should also add that there are many individuals  
23 here who do not get changes in pay in any given year. So,  
24 there are many instances of essentially zeroes in the  
25 dependent variable, and it may call into question whether

1 this was the appropriate econometric technique to use in the  
2 first place. Dr. Madden did use a different technique when  
3 she encountered a number of zeroes in some of the other  
4 analyses she did, as she described the other day.

5 Q Okay. And when you described the analyses that you  
6 did, those are analyses that you did and that are reflected  
7 in your report, correct?

8 A Yes.

9 Q Okay. So, in summary, Dr. Saad, do you believe  
10 that Dr. Madden has presented any reliable evidence of bias  
11 in pay growth with respect to women?

12 A No, I don't.

13 Q I'd like to end by asking you questions regarding  
14 Dr. Madden's analysis of starting salary at Oracle and its  
15 relationship to prior pay. In her initial report did Dr.  
16 Madden perform a regression of starting pay on prior pay?

17 A No, she did not.

18 Q Did she perform a regression of prior pay on  
19 starting pay?

20 A Oh -- sorry -- sorry. I was thinking of the wrong  
21 report.

22 Q Okay.

23 A Yes, she did.

24 Q Okay.

25 A Yes. I'm sorry.

1 Q Okay. And what did she find?

2 A Yes. She did a regression, as I understand it.  
3 It's described in the text. But there is backup material  
4 that supports what she writes in the text, that she did a  
5 regression of starting pay -- well, she writes a regression  
6 of prior pay on starting pay, but the backup actually shows  
7 the other way around. It doesn't matter as to the numerical  
8 outcome, but the backup shows that it's actually starting pay  
9 on prior pay.

10 Q Okay.

11 A And she reports on that in the text of her report.

12 Q Okay. Let's take a look -- just so we're all on  
13 the same page -- let's look at page 49 of Dr. Madden's  
14 initial report. And that first paragraph under "Base Salary  
15 at Hire," is this the text to which you're referring?

16 A Yes, it's the last sentence here. "A progression  
17 of prior salary on starting salary."

18 Q Okay. And if I understand your testimony -- well  
19 -- you said in reviewing the backup material it was actually  
20 the other way around, is that correct?

21 A Yes, yes.

22 Q Okay. And then she says that:

23 "The regression explains most, 61 percent, of  
24 the variation in starting base pay rates  
25 at Oracle."

1           Can you explain what that means?

2           A     Yes.  In looking at the backup I assumed, when I  
3     read this, that that was essentially the R squared figured in  
4     a regression of prior salary on starting salary.  Then I  
5     looked at the backup, saw it was actually a regression of  
6     starting salary on prior salary, but that in fact I saw the R  
7     squared figures.  It's different year by year, so I'm not  
8     sure if Dr. Madden is reporting one particular year, but I  
9     saw .61 for R squared in several places in that series of  
10    analyses.

11          Q     Okay.  So, if I'm understanding your testimony  
12    correctly then, the factor, the 61 percent, that's the R  
13    squared of this analysis?

14          A     Correct.

15          Q     And from this R squared value, can you calculate  
16    the correlation coefficient between prior pay and starting  
17    pay?

18          A     Yes, you can.

19          Q     How do you do that?

20          A     Well, in a two variable regression -- and this is  
21    just two variables, one variable on another -- the  
22    correlation coefficient is the square root of the R squared  
23    figure.

24          Q     Okay.  And did you do that math --

25          A     Yes.

1 Q -- to determine what the correlation coefficient  
2 is?

3 A Yes, I did.

4 Q And what is it?

5 A It's .78.

6 Q And so what does that mean?

7 A It means that the correlation, if you were to run a  
8 simple straight -- just a simple correlation analysis of the  
9 two variables on each other, you would obtain a correlation  
10 coefficient of positive .78.

11 Q Is that another way of saying that Dr. Madden's  
12 analysis shows a 78 percent correlation between prior pay and  
13 starting pay?

14 A No, that wouldn't be the phrasing.

15 Q Okay.

16 A The phrasing would be that there's a .78  
17 correlation between starting pay and prior pay.

18 Q Okay. Thank you. Did Dr. Madden do anything else  
19 to study the relationship between starting pay and prior pay?

20 A She did in a table in her report.

21 Q Was that Table 4?

22 A Yes.

23 Q And Table 4 is up on the screen. What does Table 4  
24 show?

25 A Well, as I understand it, it shows -- well, I can

1 just describe what it is. It has three different panels and  
2 there's a top panel, middle and bottom, each of those panels  
3 uses different control variables in regressions to explain  
4 starting pay and prior pay, and a couple of other things,  
5 with different subsets of the data.

6 Q And what is your understanding of the conclusions  
7 or the results that Table 4 shows?

8 A Well, for example, if you take the top panel and  
9 look at the result for women, and you look into, for example,  
10 let's look at Columns 2 and 3. In Column 2 you have a  
11 coefficient of negative .2, okay, negative .12 of regression  
12 on starting pay, taking into account gender, race, age,  
13 education and hire year. Dr. Madden then runs a similar  
14 analysis, but uses, this time, prior pay as the dependent  
15 variable, minus .123 is what she obtains. She then goes to  
16 Column 4 and takes starting pay minus prior pay, creates the  
17 difference between them, and runs a regression in that  
18 instance and finds no difference on the basis of gender in  
19 that result.

20 Q Okay. And if we can zoom out again and just look  
21 at the table. So, if you -- you mentioned that there were  
22 three panels?

23 A Yes.

24 Q And over on the top right, above each of the  
25 panels, there's a number of factors listed, do you see where

1 I'm -- excuse me -- on the left?

2 A Top left, yes.

3 Q Are those the factors that were considered in each  
4 of the analyses run in the three panels?

5 A Well, it's sequential. So, the second panel adds  
6 job descriptor to the variables that were utilized in the  
7 panel above, the first panel. And then the bottom panel adds  
8 starting global career level to the variables that are added  
9 in the two panels above.

10 Q But then moving across the table from left to  
11 right, the explanation that you gave as to the first row  
12 applies down the table, correct?

13 A Correct.

14 Q Okay. Do these findings in Table 4 demonstrate to  
15 you any causal relation ship between prior pay and starting  
16 pay?

17 A No, they don't.

18 Q Why not?

19 A Because whatever fact -- there may be factors that  
20 explain both the difference in starting pay -- for example,  
21 take the top row, the minus .12 and .123, you see the two  
22 numbers look to be the same. There can be factors that are  
23 left out of the model that explain both, such as the skills  
24 of the employee -- the specific skills of the employee. For  
25 example, when you go to the bottom panel, you see that when

1 you control for global career level you see a dramatic  
2 difference. Both of those coefficients fall considerably to  
3 minus .027, minus .019. Again, both of those could be  
4 explained by variables that continue not to be in the model.  
5 So, there's nothing that causally relates prior pay to  
6 starting pay.

7 Q Does Table 4 compute a correlation coefficient, at  
8 all, between prior pay and starting pay?

9 A No, it does not.

10 Q Let's take a look at slide 56. What does this  
11 slide show?

12 A This contrasts the .78 or 78 percent, I guess is  
13 on this slide. So, I guess one could use that. I prefer to  
14 use correlation coefficients being .78.

15 Q Okay.

16 A So, I will convert it, for purposes of discussion,  
17 to .78, and it compares that to a correlation I found in my  
18 initial report, between prior pay and starting pay for all  
19 jobs utilizing the National Longitudinal Survey, which I  
20 described earlier today.

21 Q Okay. And so what conclusions, if any, do you draw  
22 from the results shown on slide 56?

23 A Well, as I wrote in my initial report, it's not  
24 surprising that there's a high correlation in prior pay and  
25 starting pay for individuals changing jobs in the same

1 industry or in the same general industry, it's not a big  
2 surprise. So, it doesn't surprise me to see a high  
3 correlation between prior pay and starting pay at Oracle,  
4 that's really no different than what is found elsewhere in  
5 the economy.

6 Q And in a company that did not ask about prior pay,  
7 would you expect to see a correlation between prior pay and  
8 starting pay?

9 A Of course I would.

10 Q Why?

11 A Because if the prior company and the subsequent  
12 company are both evaluating the skill of the employees and  
13 paying them according to the skills that they have for the  
14 work they're going to ask them to do, I would expect that  
15 their pay would be in the same general range and, therefore,  
16 to be highly correlated.

17 Q Do you believe that correlation demonstrates  
18 causation?

19 A Well, not causation per se from the prior pay  
20 itself, but certainly there's an external, a third factor, an  
21 additional factor, which is the skills the employees have,  
22 those would be causal to both observations of prior pay and  
23 starting pay.

24 Q Just as a general principle, though, do you believe  
25 that correlation proves causation?

1 A No.

2 Q Why?

3 A Because there are many things that are correlated  
4 together, which are not at all causal. A very well known  
5 example people like to give is in the summertime one notices  
6 that forest fires and consumption of ice cream are very high.  
7 Now, is it true that forest fires cause additional ice cream  
8 eating or vice versa? Not likely, there's a third thing that  
9 causes them both, hot days.

10 Q Dr. Saad, without discussing specifics or specific  
11 numbers, are you familiar with the damages analysis that Dr.  
12 Madden conducted in her reports?

13 A Yes.

14 Q Do you agree with those conclusions?

15 A No, I don't.

16 Q Why not?

17 A Because if the model is wrong and does not support  
18 computation of damages, then I don't believe there's any  
19 basis for damages, at all.

20 Q So, you anticipated my next question, in part.  
21 What is your conclusion regarding whether damages are owed in  
22 this case?

23 A Well, again, I have not analyzed the issue of  
24 damages, myself, but based on my review and my analysis of  
25 Dr. Madden's work, I don't find that Dr. Madden's work would

1 support the computation of damages and, therefore, based on  
2 that review of her information I would conclude that there  
3 are no damages.

4 Q Have you seen any other statistical analyses in  
5 this case that would warrant damages?

6 A No, I have not.

7 Q Dr. Saad, did Dr. Madden conduct any analyses in  
8 either of her reports based on salary grade?

9 A No.

10 Q Did she conduct any analyses in either -- well -- a  
11 foundational question first. Are you familiar with a term at  
12 Oracle called "COMPA Ratio"?

13 A Yes, I am.

14 Q And did Dr. Madden conduct any analyses in either  
15 of her reports based on COMPA Ratio?

16 A No.

17 Q Did Dr. Madden conduct any analyses in either of  
18 her reports that specifically analyzed the pay of Oracle  
19 employees hired through Oracle's College Recruiting Program?

20 A Not that I saw, no.

21 Q And did Dr. Madden conduct any analyses in either  
22 of her reports that specifically analyzed the job assignments  
23 of Oracle employees hired through Oracle's College Recruiting  
24 Program?

25 A No.

1           Q     I want to end, Dr. Saad, with your conclusions in  
2     this case.  So, having discussed in detail the different  
3     aspects of the different analyses that we reviewed today, did  
4     you form some conclusion in this case?

5           A     Yes, I did.

6           Q     Okay.  Let's take a look at slide 58.  What does  
7     this slide illustrate?

8           A     It just lists my general conclusions, my overall  
9     conclusions.

10          Q     And one of those conclusions was that Dr. Madden's  
11     analyses do not support OFCCP's allegations?

12          A     Correct.

13          Q     You also concluded that Dr. Madden's analyses rely  
14     on unsupported assumptions instead of empirical research?

15          A     Yes.

16          Q     You also concluded that Dr. Madden's analyses  
17     utilized mis-specified models?

18          A     That's correct.

19          Q     You also concluded that Dr. Madden's analyses rely  
20     upon incorrectly measured variables?

21          A     Yes.

22          Q     You also concluded that Dr. Madden's analyses  
23     suffer from omitted variable bias?

24          A     Yes.

25          Q     You also concluded that there's no evidence of bias

1 in the process by which job applicants are hired into the  
2 positions they apply for, both career level and organization?

3 A That's correct.

4 Q You also concluded that there's no evidence of bias  
5 in promotions or pay growth?

6 A That's correct.

7 Q And you also concluded that there's no evidence of  
8 prior pay causing starting pay?

9 A That's correct.

10 Q In your expert opinion, do Dr. Madden's analyses  
11 support any inference of pay discrimination by Oracle?

12 A Not in my opinion, no.

13 Q And can you briefly explain the basis for that  
14 conclusion?

15 A Because in my opinion they do not compare people  
16 who are doing similar work and there's no basis to exclude  
17 the variables that would permit one to identify individuals  
18 doing similar work, based on the analyses that Dr. Madden  
19 did. In some cases she did analyses purporting to justify  
20 the exclusion of certain variables, those analyses do not  
21 justify, they do not conclude that one should leave those  
22 variables out. And in other cases she simply assumed that  
23 certain variables should not be included in analyses, and did  
24 not include them.

25 Q In your expert opinion, did Dr. Madden's analyses

1 support any inference of systemic assignments discrimination  
2 at Oracle?

3 A No.

4 Q Why do you say that?

5 A Because there's no -- it's a patchwork quilt as to  
6 whether or not individual assignments upon hire, which is the  
7 data that we have here to analyze. In some instances there  
8 appear to be slight up-leveling and in some instances slight  
9 down-leveling, but there's no pattern, there's no systemic  
10 overall pattern.

11 Q In your expert opinion, did Dr. Madden's analyses  
12 demonstrate that there was a causal relationship between  
13 prior pay and starting pay?

14 A No, it does not establish that.

15 Q And just one more time for the record, what is the  
16 basis for that conclusion?

17 A That the analysis that both prior pay and starting  
18 pay could just as easily be explained by other factors  
19 because the skills and qualifications and credentials, and  
20 various attributes of employees can be completely consistent  
21 with being paid the same amount at a prior employer as a  
22 subsequent employer.

23 Q Okay.

24 MS. CONNELL: Thank you, Dr. Saad. I have no  
25 further questions at this time.

1 JUDGE CLARK: Thank you, Ms. Connell.

2 Mr. Song?

3 MR. SONG: Your Honor, OFCCP is prepared to  
4 proceed, but I do want to note that it's almost 2:20 o'clock  
5 p.m., and maybe a natural break point.

6 JUDGE CLARK: Do you want to take a 10-minute break  
7 then start?

8 MR. SONG: Rather than start 10 minutes and then  
9 have to break or something.

10 JUDGE CLARK: That's fine. We'll take a 10-minute  
11 recess, we'll start at 2:30 o'clock p.m.

12 Dr. Saad, fee free to step down.

13 THE WITNESS: Thank you.

14 JUDGE CLARK: We're off the record.

15 (Off the record at 2:20 o'clock p.m.)

16 JUDGE CLARK: Okay. We are back on the record.  
17 All parties are present.

18 Dr. Saad is on the stand. Mr. Song?

19 CROSS-EXAMINATION

20 BY MR. SONG:

21 Q Good afternoon, Dr. Saad.

22 A Good afternoon.

23 Q You prepared an expert report in the matter of this  
24 present litigation, OFCCP v. Oracle America, Incorporated,  
25 correct?

1           A     Yes, I did, two reports.

2           JUDGE CLARK:  And Mr. Song, if possible, could you  
3 pull that microphone just a little closer to you?

4           MR. SONG:  Sure.

5           JUDGE CLARK:  Thank you.

6           MR. SONG:  Is that better?

7           JUDGE CLARK:  Yes.

8           MR. SONG:  Okay.

9   BY MR. SONG:

10          Q     And you provided that report on July 19th, 2019,  
11 correct?

12          A     The initial report, that's correct.

13          Q     And that report has been marked as J-103 today?

14          A     I think I recall that.

15          Q     It's in front of you as J-103.

16          A     I'll take your word for it.

17          Q     Okay.  And Professor Madden also submitted her  
18 expert report, initial report, simultaneously, correct?

19          A     That's correct.

20          Q     And you then submitted a rebuttal report in the  
21 matter -- in this matter -- on August 16th, 2019, correct?

22          A     That's correct.

23          Q     And you were deposed in your capacity as an expert  
24 on October 11th, 2019, correct?

25          A     I think that is correct.

1 Q Okay. You were at the City University of New York  
2 for six years, correct?

3 A That is correct.

4 Q And tenure is usually granted within six years of  
5 an academic appointment, correct?

6 A It can be, it depends on the circumstances.

7 Q Okay. And you were not tenured at the City  
8 University of New York, correct?

9 A No, I left before a tenure decision was to be made  
10 on my case.

11 Q And your name isn't listed as adjunct faculty at  
12 UCLA, correct?

13 A Not anymore, no.

14 Q And your name isn't listed as adjunct faculty at  
15 USC, correct?

16 A Not at the present time, that's correct.

17 Q You're aware that there's more than one pay  
18 discrimination case against Oracle in California, correct?

19 A Yes, I am.

20 Q And you're aware of the lawsuit Jewett v. Oracle  
21 America, Incorporated?

22 A Yes.

23 MS. CONNELL: I'll object as beyond the scope of  
24 direct.

25 JUDGE CLARK: What's the purpose of asking about

1 another lawsuit, Mr. Song?

2 MR. SONG: I'm just trying to lay the foundation  
3 for questions that I have regarding Dr. Saad's testimony.

4 JUDGE CLARK: Okay. I'll allow some latitude, but  
5 it's really not relevant here. But go ahead and ask a few  
6 more questions.

7 BY MR. SONG:

8 Q And you're also serving as an expert in the Jewett  
9 case?

10 MS. CONNELL: Same objections.

11 JUDGE CLARK: Overruled.

12 THE WITNESS: That is correct.

13 BY MR. SONG:

14 Q And you were deposed in the Jewett matter on or  
15 about March 19th, 2019?

16 A I don't recall the exact date, but I'll take your  
17 representation.

18 Q Okay. And you also provided an expert report in  
19 the Jewett case, correct?

20 A I did, yes.

21 Q Okay. And are you aware that it's been marked as  
22 Exhibit P-439?

23 A In which case?

24 Q In this case?

25 A No, I'm not aware of that.

1 Q Okay. And you also provided a rebuttal report in  
2 that case, correct?

3 A I think so, yes.

4 Q And the class of people involved in the Jewett  
5 matter would cover some of the people -- cover some of the  
6 people --

7 A Let me just -- my report was a rebuttal report. I  
8 was responding to a report prepared by Plaintiff's expert in  
9 that case.

10 Q Okay. And the class of people involved in the  
11 Jewett case covers Oracle's headquarters at Redwood Shores,  
12 correct?

13 A I believe that the headquarters employees are a  
14 subset of the employees in the Jewett matter.

15 Q Okay. But the Jewett case only addresses pay  
16 inequity for women, correct?

17 A It addresses pay claims with respect to gender,  
18 that is correct.

19 Q And you're the managing partner of Resolution  
20 Economics?

21 A Yes, I am.

22 Q Okay. And you co-founded Resolution Economics in  
23 1998?

24 A That is correct.

25 Q What percentage of Resolution Economics work is in

1 litigation consulting?

2 A At the present time probably 60 percent, 50 to 60  
3 percent, I'm not sure. It does change and it's actually an  
4 evolving percentage.

5 Q Okay. If I represented to you that you testified,  
6 in your deposition, 70 to 75 percent, would you have any  
7 reason to doubt that?

8 A Well, maybe over the longer period of time it might  
9 be. At the present time I think it's a little bit less  
10 litigation than over the longer period of time. As I said,  
11 it's an evolving number, given the work our firm is engaged  
12 in.

13 Q Okay. And in the labor and employment litigation  
14 consulting space, Resolution Economics mostly assists  
15 defendants, correct?

16 A Mostly, that is correct.

17 Q Would it be fair to estimate 80 percent of  
18 Resolution Economics work is on behalf of defendants?

19 A That -- over the long haul, that would be an  
20 appropriate breakdown.

21 Q And do you recall the last four years of testimony  
22 in cases that you listed on page A-9 of your expert report?

23 A I haven't memorized it, but if I saw it, I would  
24 recall it.

25 Q Okay. Do you recall how many cases are

1 discrimination cases there?

2 A No, I don't, not without looking at it.

3 Q Okay.

4 A And refreshing my memory.

5 Q All right. Let's take a look at page 96 of -- I'm  
6 sorry -- of A-9, of your expert report.

7 A This is the initial report, first report?

8 Q Yes, initial report, correct.

9 JUDGE CLARK: So, we're looking at Joint Exhibit  
10 103, page 96, is that what you said, Mr. Song?

11 MR. SONG: No. I'm sorry. Page A-9.

12 JUDGE CLARK: A-9, thank you.

13 MR. SONG: It just says: "Last Four Years of  
14 Testimony."

15 THE WITNESS: Okay. I'm there.

16 BY MR. SONG:

17 Q Okay. And it should be on your monitor, as well,  
18 Dr. Saad.

19 A Oh. Well that would have been easier, okay. You  
20 should have told me before.

21 Q After you take a look at that, can you tell me how  
22 many cases are discrimination cases?

23 MS. CONNELL: Just for the record, the list  
24 continues onto the other pages.

25 JUDGE CLARK: So, Mr. Song, have you shown him the

1 entire exhibit or you just want him to say how many  
2 discrimination on page A-9?

3 MR. SONG: I want him to -- well, he has a hard  
4 copy in front of him, but I want him to look at the entire  
5 list to see how many, in total, discrimination cases there  
6 are.

7 THE WITNESS: Then I'll look at the hard copy, it  
8 will be easier.

9 MR. SONG: We can move to the next page, if you're  
10 finished with the first page.

11 THE WITNESS: I'd prefer to do it from the hard  
12 copy, if you don't mind.

13 MR. SONG: Okay. Sure.

14 THE WITNESS: There are 12 cases on this listing  
15 that are employment discrimination cases.

16 BY MR. SONG:

17 Q Okay. Do you recall testifying in your deposition  
18 that there were nine discrimination cases?

19 A Well, unless I miscounted then or miscounted now.  
20 I can go through and enumerate them, if you would like.

21 Q Well --

22 A Unless you narrowed the question in my deposition  
23 regarding the nature of the case, I don't know, this is out  
24 of context.

25 JUDGE CLARK: So, Dr. Saad, let's just let Mr. Song

1 ask you questions, okay.

2 THE WITNESS: Okay.

3 JUDGE CLARK: Thank you.

4 BY MR. SONG:

5 Q Can you list the cases then, please?

6 A Yes. Jewett versus Oracle, starting with the first  
7 page. EEOC versus Jackson National. Delgado versus  
8 California Commerce Club. Harris versus Union Pacific, is  
9 sort of employment discrimination. Mousouris versus  
10 Microsoft. Bradwell Sledge versus Blue Cross of California.  
11 Truitt versus Atlanta Independent School System. EEOC  
12 versus GMRI. Romero versus Allstate. EEOC versus Texas  
13 Roadhouse. Scott versus Family Dollar. And that was it.  
14 And I was not counting as I went along.

15 Q Okay. And each of those were on behalf of  
16 defendants, correct?

17 A That is correct.

18 Q And over the years law firms have invited you to  
19 give presentations to their staff, correct?

20 A Periodically, that is correct.

21 Q And these firms' clients were typically defendants?

22 A I don't know whether they were or not.

23 Q All right. Let me turn to page 79 of your OFCCP  
24 deposition.

25 JUDGE CLARK: Does he have that up here?

1 MR. SONG: I'm putting it on the screen, Your  
2 Honor.

3 JUDGE CLARK: Okay. So, it's Plaintiff's Exhibit  
4 7, page 79?

5 MR. SONG: Yes.

6 JUDGE CLARK: Okay.

7 MR. SONG: That's correct, Your Honor.

8 BY MR. SONG:

9 Q If you look at lines 4 through 18, it says:

10 "Question: Which law firms have you  
11 presented to?"

12 "Answer: There's been quite a few  
13 over the years, I remember a few, it's  
14 been awhile since I've done that.

15 "Question: Which few do you remember?

16 "Answer: Seyfarth Shaw, Skadden Arps,  
17 Epstein Becker and Green, Jackson Lewis,  
18 Littler, Paul Hasting, those are the ones  
19 that come to mind now, there may be  
20 others, but like I say it's been awhile.

21 "Question: Have they typically been  
22 defense firms?

23 "Ms. Mantoan: Objection.

24 "Answer: The lawyers who invited me  
25 to speak at these firms, my experience

1           with them had been working on behalf of  
2           their clients, who were defendants."

3           Does that refresh your recollection?

4           A     No. That's not inconsistent with what I said. I  
5     don't know whether, as I said here, my experience with them  
6     was working on behalf of their clients who were defendants.  
7     Whether or not there were other clients. I don't know and I  
8     don't think that this is -- it's probably not a full list of  
9     all the places that I have given presentations, so I can't  
10    speak to those other firms.

11          Q     Okay. And you didn't get paid for these  
12    presentations, correct?

13          A     No, I didn't.

14          Q     Okay. And you did these presentations to  
15    potentially receive work from these firms?

16          A     Well, it was twofold. One, there are CLE  
17    requirements that involve the use of statistics and the use  
18    of experts in cases, and CLE credits are sometimes sought by  
19    attorneys. Most of the presentations, back in that  
20    time-frame, were given where CLE credit was provided to the  
21    lawyers. So, they were inviting me partly to receive that,  
22    and I did it for them in that regard.

23          Q     Yeah, but my question was did you do these  
24    presentations to potentially receive work from the firms?

25          A     Well, that may be a byproduct of that, certainly it

1 would not be surprising. But the intention for most of those  
2 was really CLE credit for the lawyers involved.

3 Q Okay. Can we turn to page 81 of your deposition,  
4 lines 5 through 7?

5 A Yes, I see that.

6 Q Okay. And it says:

7 "And for us, of course it's a good  
8 thing for us to speak to them and meet  
9 people that we might ultimately want to  
10 work with."

11 Does that refresh your recollection?

12 A Well, if I may, the context here is exactly what I  
13 think I just said. These three lines above those lines  
14 relate to my discussing the CLE credit situation and the  
15 byproduct issues mentioned in lines 5 to 7.

16 Q Well, I don't --

17 A So, I guess it sounds to me like what I just said.

18 Q Okay. Well, we'll just have to agree to disagree  
19 on that.

20 You did these presentations as a form of marketing,  
21 correct?

22 A Well, as I said, yes. The byproduct, of course, as  
23 I think I said then, as I did now, would not be surprising if  
24 this led to being retained by these law firms and in some  
25 instances it did.

1 Q Okay. You're a member of the ABA, correct?

2 A An associate member, I'm not a lawyer.

3 Q And Resolution Economics recently sponsored a panel  
4 at the ABA conference last month, which you attended,  
5 correct?

6 A No.

7 Q Okay.

8 MR. SONG: Your Honor, may I approach?

9 JUDGE CLARK: Yes.

10 MR. SONG: I'll mark this as -- I can't remember --  
11 Plaintiff's -- what's the latest exhibit?

12 JUDGE CLARK: It looks like yours is going to be  
13 Plaintiff's 505, maybe. Did you give it to Ms. Connell?

14 MR. SONG: Okay.

15 JUDGE CLARK: Hang on a second before you show it  
16 to him.

17 So, this is marked -- it's Plaintiff's 506.

18 (Plaintiff Exhibit No.

19 506 was marked for

20 identification.)

21 MS. CONNELL: I'm going to object as hearsay, and  
22 to the extent that this is going to be used as impeachment  
23 material, it looks like the third time that it will likely be  
24 ineffective in that regard, but --

25 JUDGE CLARK: Overruled. You can show the witness.

1 THE WITNESS: Yeah, I have the document.

2 MR. SONG: Okay.

3 BY MR. SONG:

4 Q Do you recognize this document?

5 A Yes, I do.

6 Q Okay. And do you see where it says:

7 "Partners Ali Saad, Ph.D. and Robert

8 Crandall M.B.A., of our Labor and

9 Employment Practice in Los Angeles, will

10 be attending the conference at the Hilton

11 San Francisco Union Square from November

12 7th through 10th."

13 A Yes, I see that.

14 Q Okay. So, did you attend this ABA conference?

15 A I'm not sure I did, actually. This is for which  
16 year? It's San Francisco, it doesn't say which year this is.

17 Q Well, it's --

18 A And I don't recall.

19 Q -- currently on your website dated 12/16/2019.

20 A Well, there was no --

21 MS. CONNELL: Objection, that misstates the  
22 document.

23 JUDGE CLARK: Overruled.

24 So, Mr. Song, just get to the point. Do you know  
25 the specific date of this conference or not? It is it 2019

1 or is it 2018?

2 MR. SONG: It's 2019, Your Honor.

3 JUDGE CLARK: Okay.

4 Do you recall being at a conference for the ABA in  
5 San Francisco in November of this year?

6 THE WITNESS: No, I was not.

7 JUDGE CLARK: Okay.

8 Mr. Song, anything else?

9 MR. SONG: No, Your Honor.

10 JUDGE CLARK: Okay.

11 BY MR. SONG:

12 Q You're also scheduled to speak with Oracle's lead  
13 counsel, Ms. Connell, next month, regarding OFCCP compliance,  
14 correct?

15 MS. CONNELL: Objection, lacks foundation.

16 JUDGE CLARK: Overruled.

17 You can answer the question, if you can.

18 THE WITNESS: Not to my knowledge. That's news to  
19 me.

20 MR. SONG: May I approach, Your Honor?

21 JUDGE CLARK: Yes.

22 MS. CONNELL: Same objections, hearsay, lacks  
23 foundation.

24 JUDGE CLARK: So, you're going to mark this as your  
25 next in order?

1 MR. SONG: Yes, Your Honor.

2 JUDGE CLARK: P-507. And the objection is  
3 overruled. You can show it to him.

4 (Plaintiff Exhibit No.  
5 507 was marked for  
6 identification.)

7 BY MR. SONG:

8 Q Do you recognize this document, Dr. Saad?

9 A It looks familiar, yes.

10 Q Okay. And do you see where it says:

11 "Ali Saad, Managing Partner in our  
12 Labor and Employment Practice in Los  
13 Angeles, is participating in a webinar  
14 with the Washington Metro ILG on  
15 Thursday, January 17th at 11:00 o'clock  
16 a.m., Eastern Standard Time. Dr. Saad  
17 will be joined by Erin M. Connell of  
18 Orrick, Herrington and Sutcliffe, LLP, as  
19 they discuss the topic 'OFCCP's New  
20 Compensation Directive Implications for  
21 2019."

22 A I see that.

23 Q So, is this a panel that you will be participating  
24 in, or that you have participated in?

25 A I think this refers to something in the past, not

1 something in the future. Your question was about the future,  
2 so that's what was confusing to me.

3 Q Okay. So, you did participate in a panel with Ms.  
4 Connell this year, on OFCCP compliance?

5 A Yes, that's correct.

6 Q Thank you. Your current hourly rate is \$750.00 per  
7 hour, is that correct?

8 A That is correct.

9 Q And during your deposition in October, you  
10 testified that you received between \$1 million to \$2 million  
11 for your testimony in Jewett v. Oracle, correct?

12 MS. CONNELL: Objection, lacks foundation.

13 JUDGE CLARK: Rephrase your question. And why  
14 would you -- did you ask him about Jewett?

15 MR. SONG: Yes, Your Honor.

16 MS. CONNELL: Yeah, so --

17 JUDGE CLARK: So, why would that be relevant here?

18 MR. SONG: Because it's regarding the same client,  
19 Oracle, and also the same counsel, and it shows bias, in our  
20 view.

21 JUDGE CLARK: Okay. I'll let you ask the question.  
22 Go ahead.

23 MR. SONG: Okay.

24 JUDGE CLARK: So, rephrase your question.

25 MR. SONG: Okay.

1 BY MR. SONG:

2 Q Were you deposed as an expert in October of this  
3 year, regarding this matter?

4 A In this case?

5 Q Yes.

6 A Yes, I was.

7 Q Okay. And were you asked about how much money you  
8 had billed for your testimony in Jewett v. Oracle?

9 A I'm not sure that that phrasing is exactly what I  
10 was asked. I think I did say that our firm billed for the  
11 services provided in connection with that case, not me,  
12 personally, but my firm.

13 Q Okay. But you're serving as the expert in the  
14 Jewett v. Oracle matter, correct?

15 A That is correct.

16 Q And do you recall how much you testified that you  
17 had billed for the Jewett v. Oracle matter?

18 A I think at the time I testified it was somewhere --  
19 our firm's work had been in the range of \$1 million to \$2  
20 million.

21 Q And as of today has your firm billed over \$2  
22 million?

23 A For what?

24 Q I'm sorry. For the Jewett v. Oracle matter?

25 MS. CONNELL: Objection, relevance.

1 JUDGE CLARK: Overruled.

2 THE WITNESS: I'm not sure there's been any  
3 additional work in that case since the time that I was  
4 deposed in this case.

5 MR. SONG: Okay.

6 BY MR. SONG:

7 Q During your deposition in October, did you also  
8 testify how much money you had billed for your expert  
9 services in this matter?

10 A I recall receiving some questions in that regard.

11 Q Okay. And do you remember how much you testified  
12 that you had received for your testimony in this matter?

13 A Again, my firm billed a certain amount. What I  
14 receive for testimony is just the time spent during  
15 testimony, so that would be a small amount of the work that  
16 my firm billed for. I think I testified that the fees had  
17 been above \$1 million for this case, at that time.

18 Q Okay. And as of today, would the amount your firm  
19 has billed, would that be over \$2 million?

20 A Probably not, no.

21 Q In your Jewett expert report, you identified 38  
22 matters in which you have testified, correct?

23 A I don't recall that, as I sit here.

24 Q Okay.

25 MR. SONG: Can we pull up the Jewett deposition,

1 page 10, please?

2 JUDGE CLARK: So, what exhibit number is it?

3 MR. SONG: The exhibit number is -- yeah -- is it  
4 P-9 -- yeah. I'm sorry, Your Honor, I can't remember --

5 JUDGE CLARK: The exhibit number?

6 MR. SONG: Yeah -- the exhibit number.

7 MS. CONNELL: I don't believe that this deposition  
8 transcript is in evidence in this case.

9 MR. SONG: It's been marked as an exhibit, at  
10 least.

11 JUDGE CLARK: So, all of your exhibits, except for  
12 one -- is it Plaintiff's Exhibit 93? Because all of your  
13 other exhibits for Plaintiffs, as far as I understand, have  
14 all been admitted, except -- well, I guess the deposition  
15 transcripts have not been.

16 MR. SONG: Yeah.

17 JUDGE CLARK: You're saying it's one of those?

18 MR. SONG: Yes, that's correct, Your Honor.

19 JUDGE CLARK: Okay.

20 MS. CONNELL: I don't believe that's correct.

21 JUDGE CLARK: Okay. Ask your question, Mr. Song,  
22 go ahead.

23 MS. CONNELL: Our team has confirmed this  
24 deposition transcript is not on the exhibit list.

25 JUDGE CLARK: Okay. Thank you, Ms. Connell.

1 BY MR. SONG:

2 Q The question is:

3 "Question: Okay. And how many total are there  
4 on these pages?

5 "Answer: Thirty-eight."

6 Does that refresh your recollection?

7 MS. CONNELL: Objection, vague and ambiguous.

8 JUDGE CLARK: Overruled.

9 Did you say -- it doesn't really do much here, Mr.  
10 Song, I mean the objection is well taken. I just was going  
11 to let it stand that he did say "38," but it doesn't really  
12 give us any context in what he's answering there.

13 MR. SONG: Well, that was specifically about his  
14 CV. I didn't want to read the entire page, but I can do  
15 that.

16 JUDGE CLARK: Well, I'm not telling you to read the  
17 whole page. You asked him if he testified, at the other  
18 hearing, or his deposition, if he appeared in 38  
19 discrimination cases, and that doesn't appear to say that. I  
20 thought that's what your question was.

21 MR. SONG: No, it was 38 matters that he had  
22 testified in, so it wasn't total.

23 JUDGE CLARK: Okay. So, why don't you just ask  
24 your question again, then?

25 MR. SONG: Okay.

1 BY MR. SONG:

2 Q Do you recall how many cases that you had  
3 identified, that you had testified in the last four years, in  
4 your Jewett report?

5 A Well, my memory has been refreshed by all this  
6 discussion, so I'll just say 38.

7 Q Thank you. You further stated that in 36 out of  
8 those 38 matters you testified for defendants, correct?

9 A If I recall what was on that page, just before it  
10 blinked off, it looks like that's what I said, but I don't  
11 recall, as I sit here, what I said in that deposition.

12 Q Okay. And one of the plaintiffs cases you worked  
13 on was a marital dissolution case, correct?

14 A Yes, it was.

15 Q And the other case you worked on was an employee  
16 theft or departure case, correct?

17 A Yes.

18 Q And it's been at least 10 years since you testified  
19 in an employment law case on behalf of plaintiffs, correct?

20 A I don't know -- probably that's true, yeah.

21 Q Okay. And you only -- you've only published one  
22 academic publication, correct?

23 A One publication appeared in an traditional academic  
24 journal, that is correct.

25 Q And this one publication is a summary of your

1 dissertation, correct?

2 A Yes, it is.

3 Q Okay. And it's listed as P-323, and it's entitled:  
4 "Schooling and Occupational Choice in 19th Century America."

5 Is that correct?

6 A I think that's correct. I thought that there was  
7 the word "Urban" before "America" in the title.

8 Q And your dissertation sought to explain why German  
9 families in the 1860s to 1880s sent their kids to public  
10 school less often than Irish families in Philadelphia?

11 A That was a stylized fact that I sought to  
12 investigate, yes.

13 Q And your conclusion was that German families use an  
14 apprentice system in skilled crafts to increase kids' human  
15 capital, whereas Irish families used public school to do so?

16 A Very broadly one could draw that inference from  
17 what my research showed.

18 Q And from a --

19 A In proportional terms, put it that way.

20 Q Thank you. From a labor economic standpoint, your  
21 dissertation analysis relied, in part, on Human Capital  
22 Theory, correct?

23 A Partially, yes.

24 Q In the summary of your dissertation, you did not  
25 discuss endogeneity or exogeneity, correct?

1           A     Not that I recall, no.

2           Q     And is that because you didn't publish any tables  
3 of regression results?

4           A     I don't recall whether -- well, in that summary  
5 there may not have been any, but certainly in the larger  
6 dissertation there were tables.

7           Q     Okay. But in the summary of your dissertation,  
8 there were no regression results reported?

9           A     I actually don't recall.

10          Q     Okay.

11                 MR. SONG: Can we pull out 323, please?

12 BY MR. SONG:

13          Q     Would it refresh your recollection if I showed you  
14 your article, your summary of your dissertation?

15          A     I assume it would.

16                 MR. SONG: All right. I'm sorry, Your Honor, we're  
17 having technical difficulties, so I'll skip that question and  
18 move on.

19                 JUDGE CLARK: Okay. Thank you, Mr. Song.

20 BY MR. SONG:

21          Q     Regarding your publication, you've previously  
22 testified that you never liked your own work, correct?

23          A     I had a period of time in my life where I was a  
24 little overly critical of my own work, that is correct. That  
25 time was during academia.

1 Q You have another publication entitled: Financial  
2 Success and Business Ownership Among Vietnam and Other  
3 Veterans," correct?

4 A Yes.

5 Q Did your study include an examination of  
6 discrimination in pay among veterans and non-veterans?

7 A Well, it didn't look at the issue of whether there  
8 was impact on veterans' pay, holding other things constant,  
9 and it looked into the effect, in particular, of Vietnam era  
10 war veterans and how they fared in the labor market, post  
11 serving in the military.

12 Q Did you run a pay regression to evaluate  
13 differences in pay?

14 A Pardon? I didn't hear the last part of your  
15 question.

16 Q Oh. Did you run a pay regression to evaluate  
17 differences in pay?

18 A Yes, I did run pay regressions.

19 Q Okay. And you used Human Capital Theory to  
20 determine which variables to include in your regression?

21 A Well, I used an approach that is based on Human  
22 Capital Theory, yes, I did.

23 Q Okay. Thank you. The variables you included were  
24 veteran status, years of school, experience and marital  
25 status, correct?

1           A     Among other things.  There were a lot of other  
2 variables in the analysis, as I recall.

3           Q     Okay.  You didn't include any job or occupation  
4 controls in your regressions, did you?

5           A     No.  I think there were job and occupational  
6 controls and industry controls, I think there were controls  
7 for a whole variety of different things.

8           Q     And you relied on the 1980 POMS from the US Census  
9 to conduct the statistical analysis in this report?

10          A     As I recall it was based on the census data, the  
11 detailed long form census data from the 1980 census.

12          Q     And you didn't include any endogenous variables in  
13 the regression, correct?

14          A     That context really would be -- there's no context  
15 for that sort of an inquiry in the analysis that was done in  
16 that case.

17          Q     Okay.  But can you answer yes or no, whether you  
18 included any endogenous variables in your regression?

19                MS. CONNELL:  Objection, lacks foundation,  
20 argumentative.

21                JUDGE CLARK:  Overruled.  You can answer the  
22 question.

23                THE WITNESS:  It's not clear that there's any  
24 context there within which one could determine whether a  
25 variable was endogenous or exogenous, so the answer would be

1 there's no way to give you an answer to that. That would  
2 depend on many things. This was an economy wide study, it  
3 was not a study within a company.

4 BY MR. SONG:

5 Q So, would your answer be no, you did not include  
6 any endogenous variables in your regression?

7 MS. CONNELL: Objection, asked and answered.

8 JUDGE CLARK: Overruled.

9 THE WITNESS: I would say from the perspective of  
10 what that study's population was, that the variables were all  
11 essentially exogenous.

12 MR. SONG: Okay. Let me ask my question again.

13 BY MR. SONG:

14 Q So, you did not include any endogenous variables in  
15 your regressions, correct?

16 A I would say none of the variables, given the  
17 purpose of that study and the data on which it was conducted,  
18 none of those variables would be considered as endogenous  
19 from the perspective of asking the question whether veteran  
20 pay is influenced by their having served in the military,  
21 specifically the Vietnam era.

22 Q Thank you. And did you make any conclusions about  
23 pay differentials between Whites and non-Whites?

24 A That I don't recall, I don't know if I looked at  
25 that issue. I haven't looked at this study probably since I

1 wrote it.

2 Q And you previously testified that statistical  
3 significance measures the likelihood that a finding is due to  
4 chance, correct?

5 A Not exactly in those words, but I did testify about  
6 the relationship between statistical significance and the  
7 concept of things occurring by chance.

8 JUDGE CLARK: So, Mr. Song, I'm wondering if you  
9 move the microphone maybe to the side of your notebook.

10 MR. SONG: Sorry.

11 JUDGE CLARK: I'm trying to keep your space there,  
12 but it would be easier to hear if you could just get a little  
13 -- there you go -- maybe a little closer. Thank you.

14 MR. SONG: Sorry.

15 JUDGE CLARK: No, no problem.

16 BY MR. SONG:

17 Q Isn't it true that labor economists use 1.6  
18 standard deviations to measure statistical significance?

19 A Generally they don't, but it's not -- it is  
20 typically in journal articles you will see references to the  
21 one percent, five percent and 10 percent levels of  
22 significance. The 10 percent is typically associated with  
23 1.65 standard deviations. So, you will see references to the  
24 10 percent level of significance on occasion.

25 Q Isn't it true that the higher your standard

1 deviation means that an exponentially smaller -- there's an  
2 exponentially smaller likelihood that a finding is due to  
3 chance?

4 A There's definitely -- the higher it is, correct,  
5 that the higher the number of standard deviations, the  
6 greater the degree of statistical significance, that is  
7 correct.

8 Q In a hypothetical model that would control for all  
9 the key or important variables, a statistically significant  
10 result would give rise to an inference of discrimination?

11 MS. CONNELL: Objection, incomplete hypothetical.

12 JUDGE CLARK: Rephrase your question, Mr. Song.

13 MR. SONG: Okay.

14 BY MR. SONG:

15 Q In a hypothetical discrimination model that  
16 controls for all the key variables or important variables  
17 that you believe need to be included, a statistically  
18 significant result would give rise to inference of  
19 discrimination, correct?

20 MS. CONNELL: Same objection, also calls for a  
21 legal conclusion.

22 JUDGE CLARK: Overruled.

23 You can answer that question.

24 THE WITNESS: So, I just want to make sure I  
25 understand the hypothetical. So, if I have all -- if I have

1 identified all factors that relate to pay -- and I assume  
2 we're talking about pay -- and I properly measure them and  
3 include them in the appropriately structured regression  
4 analysis.

5 MR. SONG: Yes.

6 THE WITNESS: Would I be able to infer, from a  
7 statistically significant relationship between particular  
8 characteristics in pay that there might be discrimination, or  
9 could it give rise to the inference of discrimination? I  
10 would say if the model is properly structured with all the  
11 variables in it, you haven't missed anything, I think that  
12 probably would be an inference that most people would agree  
13 was an appropriate one.

14 MR. SONG: Thank you.

15 BY MR. SONG:

16 Q And you're familiar with the labor economics term:  
17 "endogenous variable," correct?

18 A Yes.

19 Q And an endogenous variable is a variable whose  
20 value may be biased or influenced by the phenomena you are  
21 studying, correct?

22 MS. CONNELL: Objection, lacks foundation.

23 JUDGE CLARK: Overruled.

24 THE WITNESS: I don't know if I would phrase it  
25 quite that way. Maybe you can ask your question again, I can

1 see if I agree with that or not.

2 MR. SONG: Okay.

3 BY MR. SONG:

4 Q You don't recall previously testifying that an  
5 endogenous variable is a variable whose value may be biased  
6 or influenced by the phenomena you are studying?

7 A Well, it's the word "biased" that I have the  
8 concern about. Influenced, a variable that is influenced by  
9 the phenomenon under study, one way the other, I would say  
10 has characteristics of endogeneity, but it may not be  
11 entirely so.

12 Q Okay.

13 A Because it depends who is influencing it. And it  
14 can be influenced by more than one actor in a typical  
15 economic circumstance, not just let's say an employee, but  
16 also an employer.

17 Q Further, isn't it true that endogenous variables  
18 should not be used unless they are corrected for possible  
19 bias?

20 A I'm not sure what that means. You've have to  
21 repeat -- you'd have to rephrase that question.

22 Q Okay. Should endogenous variables be used in  
23 regression analyses?

24 MS. CONNELL: Objection, vague.

25 JUDGE CLARK: Overruled.

1           If you can answer it.

2           THE WITNESS: It depends on the circumstances.

3           MR. SONG: Okay.

4 BY MR. SONG:

5           Q     If they're corrected for possible bias, should --  
6 let me rephrase that -- strike that.

7           Unless they are corrected for possible bias,  
8 endogenous variables should not be used in a regression  
9 analysis, correct?

10          MS. CONNELL: Objection, assumes facts.

11          JUDGE CLARK: Overruled.

12          THE WITNESS: It depends on the purpose to which  
13 you are -- for which you would like to use those variables.

14          MR. SONG: Okay. I'm going to move on.

15 BY MR. SONG:

16          Q     You're familiar with the labor economics term  
17 "exogenous variable," correct?

18          A     I am.

19          Q     And you previously testified that an promoted  
20 variable is an external factor not created by or directly  
21 related to the phenomena being studied, correct?

22          A     I'm assuming you're saying I testified to that in  
23 my deposition.

24          Q     That's correct.

25          A     I don't recall that exact phrasing, but if you're

1 asking if I agree with that statement, I do.

2 Q Okay. I want to next turn to a discussion of the  
3 right and left sides of a regression equation. There are two  
4 sides to a regression equation, correct, Dr. Saad?

5 A Yes.

6 Q All right. The left side of the regression  
7 equation measures the outcome you are trying to study,  
8 correct?

9 A It measures the dependent variable, correct.

10 Q Dependent variable. The right side of the equation  
11 contains variables that you are using to understand a  
12 particular outcome, correct?

13 A Yes.

14 Q And if you include a variable on the right side of  
15 the equation, that is determined by the phenomena you're  
16 trying to study, that may give you a biased result when you  
17 measure the outcome, correct?

18 A Depending on the circumstances, that is correct.

19 Q The variables on the right side of the equation  
20 should be independent from the outcome variable on the left  
21 side of the equation, correct?

22 MS. CONNELL: Objection, incomplete hypothetical.

23 JUDGE CLARK: Overruled.

24 THE WITNESS: Well, they can't be independent of  
25 it, otherwise they wouldn't be explanatory of it.

1 BY MR. SONG:

2 Q Not from the variable, but from the outcome?

3 MS. CONNELL: Objection, vague.

4 JUDGE CLARK: Sustained. Rephrase your question.

5 MR. SONG: I'll just move on, Your Honor.

6 BY MR. SONG:

7 Q In the current litigation here, the left side of  
8 the equation reflects compensation at Oracle, correct?

9 A Are you referring to the pay analyses?

10 Q Yes.

11 A Yes, that is correct.

12 Q And the right side of the equation contain the  
13 variables used to measure whether there is compensation  
14 equity at Oracle, correct?

15 MS. CONNELL: Objection, incomplete hypothetical.

16 THE WITNESS: I wouldn't characterize them --

17 JUDGE CLARK: Well, you can answer the question.

18 Overruled.

19 THE WITNESS: I wouldn't characterize it that way,  
20 no.

21 BY MR. SONG:

22 Q How would you characterize it, then?

23 A The variables on the right-hand side will be the  
24 variables that you would like to use to explain variations in  
25 pay that are on the left-hand side?

1           Q     Okay. Thank you. If you include a variable on the  
2 right side of the equation that is determined by Oracle, this  
3 variable may improperly bias the outcome variable on the left  
4 side of the equation, correct?

5           A     It may or may not. It depends on how, in fact,  
6 Oracle -- the manner in which Oracle influences that  
7 variable.

8           Q     Okay. Let me give you another hypothetical or  
9 example. If you're trying to measure bias in pay and you  
10 include a variable in your equation that reflects decisions  
11 Oracle makes that lead to pay bias, this variable will reduce  
12 findings of bias in the outcome variable?

13           MS. CONNELL: Objection, incomplete hypothetical  
14 and vague.

15           JUDGE CLARK: Overruled.

16           THE WITNESS: That question assumes its  
17 conclusions, that's completely circular logic there. So, the  
18 answer is that is a confused hypothetical.

19 BY MR. SONG:

20           Q     Okay. So, that's a no?

21           MS. CONNELL: Objection, misstates testimony.

22           JUDGE CLARK: Sustained.

23           Move on, Mr. Song, or ask another question.

24 BY MR. SONG:

25           Q     Are you familiar with the term: "over specification

1 bias"?

2 A I'm familiar with the term: "over specification,"  
3 yes.

4 Q Isn't it true that over specification bias occurs  
5 when your model contains too many variables?

6 A It occurs when you include too many variables that  
7 do not relate to the variable of interest.

8 Q And isn't it true that if your model contains too  
9 many variables, it can be come difficult to draw conclusions  
10 about the relationship between the dependent variables and  
11 the outcome variable?

12 A It depends on what dependent variables -- what  
13 independent variables you wished to draw inferences on. If  
14 there are independent variables that you wish to draw  
15 specific inferences on their influence, specifically, you  
16 want to identify the quantitative measures for those  
17 variables, then you have to be careful on the way in which  
18 you put those variables into the model. But if you're  
19 seeking to control, and only to control for the influence of  
20 a set of independent variables, it may make no difference, at  
21 all, whether you can interpret the effects of those variables  
22 or not.

23 Q Dr. Saad, in your report you rely on R squared,  
24 correct?

25 A I discuss R squared, yes.

1 Q And R squared represents the variation between your  
2 actual outcomes and your predicted outcomes, correct?

3 A No.

4 Q And there's always some unexplained variation in a  
5 model, correct?

6 MS. CONNELL: Objection, vague and incomplete  
7 hypothetical.

8 JUDGE CLARK: Do you understand the question,  
9 doctor?

10 THE WITNESS: In very broad terms I understand the  
11 question and the answer is yes.

12 MR. SONG: Thank you.

13 BY MR. SONG:

14 Q And the R squared can be high for multiple reasons,  
15 correct?

16 JUDGE CLARK: I'm sorry, say your question again?

17 MR. SONG: I'm sorry, maybe I'm not close enough.

18 JUDGE CLARK: That's okay.

19 BY MR. SONG:

20 Q The R squared can be high for multiple reasons,  
21 correct?

22 A As a general matter, yes. There are many different  
23 types of data, many different types of application of  
24 regression, and there are circumstances that have certain  
25 types of data that will give rise to very high R squares and

1 other types of data that give rise to very low R squares.

2 Q You anticipated my next question. The R squared  
3 can also be low for multiple reasons, correct?

4 A It can be, yes, depending on the nature of the data  
5 and the phenomenon you're studying.

6 Q If you have an R squared of 1, this could mean that  
7 you have a perfect fit between your actual and predicted  
8 data, correct?

9 A Well, mechanically that's what that would mean.

10 Q Okay.

11 A Arithmetically.

12 Q And R squared is typically less than one in most  
13 empirical studies of cross-sectional data, correct?

14 A I would say typically is not strong enough. I  
15 don't think I've ever seen an R squared of one in a  
16 cross-section of data.

17 Q And there are many studies about discrimination  
18 with R squared less than one published in peer review  
19 journals, correct?

20 A As I said, I believe you probably will find that  
21 every single publication on this subject has an R squared  
22 less than one. By definition it's really not possible to  
23 have an R squared equal to one, in general, in a  
24 cross-sectional analysis.

25 Q And the range of R squared values in peer reviewed

1 published articles about discrimination can fall close to  
2 zero, correct?

3 A I'm not sure I've seen any close to zero, but it  
4 would depend on the data that was being studied, the  
5 circumstances, the variables available to study, a whole host  
6 of things. But I'd be surprised if there was a study in this  
7 area where the R squared was close to zero -- depending on  
8 what you mean by close to zero.

9 Q I'd like to turn to the Jewett deposition, page  
10 172, if we have that?

11 MS. CONNELL: Are you pulling it -- I'll assert an  
12 objection.

13 MR. SONG: Yeah, we're pulling it on the screen.

14 MS. CONNELL: Well, I don't know what the purpose  
15 of showing him the --

16 JUDGE CLARK: What's the --

17 MS. CONNELL: -- yeah -- of the Jewett --

18 JUDGE CLARK: -- what's the purpose of this?

19 THE WITNESS: To refresh his recollection, Your  
20 Honor.

21 JUDGE CLARK: About? Yeah, I haven't heard him say  
22 his recollection wasn't -- that he needed to be refreshed.

23 MR. SONG: Or inconsistent statement, either one.

24 JUDGE CLARK: Okay. Overruled.

25 You can ask the question. Not either one. He

1 didn't say his recollection needed refreshing, as I recall.

2 MR. SONG: I'm sorry, Your Honor.

3 JUDGE CLARK: Okay. So, you're impeaching him?

4 MR. SONG: Yes.

5 JUDGE CLARK: Okay.

6 BY MR. SONG:

7 Q If you look at 172, lines -- beginning line 6 to  
8 page 173, 2. And it says:

9 "Question: Okay. This is the typical that peer  
10 review journals are published with  
11 regressions with R squares that are way  
12 less than one."

13 And after an objection, Dr. Saad, you said:

14 "Answer: There's a range of R squares one will  
15 observe in journal articles.

16 "Question: Now, turn to Table 3, the R squares  
17 range from .15 to .54, right?

18 "Answer: Yes, they do, but in that" -- it  
19 looks like maybe, "context" -- "let's be  
20 careful on the context. The idea here is  
21 that they have no control variables in  
22 Column 1, or just it looks like one set  
23 other than gender, but then successively  
24 I control variables down to Column 8,  
25 where all -- it looks like the

1 specifications and all variables are  
2 included in Specification 8."

3 Does that accurately reflect your testimony?

4 A It looks like you just read it correctly.

5 Q Thank you.

6 MS. CONNELL: Well, I'm going to object, that this  
7 is like the fourth time that they put deposition testimony in  
8 front of him that doesn't actually impeach the testimony.

9 JUDGE CLARK: I understand. Overruled.

10 Mr. Song, we're not here to read his deposition in  
11 Jewett. Ask him questions. If he says something  
12 inconsistent, ask him a specific question that's  
13 inconsistent, not just to read his answers at a prior  
14 deposition. I didn't see anything here that appeared to be  
15 inconsistent with anything he said in this proceeding, so  
16 far. So, go ahead and move on, ask another question or  
17 whatever you need to do, but I don't want to just read his  
18 deposition.

19 MR. SONG: Okay. Thank you, Your Honor.

20 BY MR. SONG:

21 Q And you should look at all the details about a  
22 model, not just the R squared value, to determine if a model  
23 specification is valid, correct?

24 A I agree with that statement.

25 Q And isn't it true that you can have a high R

1 squared even when your variables don't accurately measure  
2 what you're seeking to measure?

3 A That could happen.

4 Q And isn't it true that the R squared criterion  
5 alone is not sufficient to tell you whether your variables  
6 competently explain the data?

7 A I think I actually did say that a little while ago,  
8 yeah, so I agree with that.

9 Q And you cited A Guide to Econometrics by Peter  
10 Kennedy, to support your expert report, correct?

11 A Yes, I did.

12 Q And A Guide to Econometrics, by Peter Kennedy, is a  
13 reliable source?

14 A It's a well known book in the econometrics  
15 literature.

16 Q On page 47 of your report, footnote 56, you quoted  
17 from page 27 of his book, correct?

18 A Let me verify that. It's my initial report?

19 Q Yes, that's correct. I'll give you a second to  
20 look at that.

21 A Okay. I've just reviewed the footnote 56.

22 Q Okay. And you quoted from his book that:

23 "R squared is sensitive to the range of  
24 variation of the dependent variable."

25 A Yes, I did.

1           Q     Okay. Do you recall that in the very next  
2 paragraph Kennedy states that: "These measures of goodness of  
3 fit have a fatal attraction?"

4           A     He used some colorful language in the next  
5 paragraph, that's correct.

6           Q     Do you also recall that Mr. Kennedy states that:  
7 "In general, econometricians are interested in  
8                 obtaining good parameters estimates where  
9                 'good' is not defined in terms of R  
10                squared. Consequently, the measure of R  
11                squared is not of much importance in  
12                econometrics."

13          A     Yes. Holding constant your -- the measures of the  
14 estimates that you get, you should not let R squared hold up  
15 interpretation of estimates that you get that agree with  
16 theory that you are testing with your econometric procedure.  
17 I completely agree with that.

18          Q     And do you recall that he also writes:  
19 "Unfortunately, however, many practitioners act  
20                 as though it is important for reasons  
21                 that are not entirely clear, as noted by  
22                 Cramer."

23                 Do you recall Mr. Kennedy writing that?

24          A     Yes, I do.

25          Q     Do you also recall:

1           "Although it is generally conceded among  
2           insiders that they do not mean a thing,  
3           high values are still a source of pride  
4           and satisfaction to their authors,  
5           however hard they may try to conceal  
6           these feelings."

7           A     Yes, I see that.

8           Q     Okay.

9           A     I know that that's -- because I think you read this  
10          to me at my deposition and I recall this.

11          Q     Good memory.

12          A     Not word for word, but in general.

13          Q     And in Human Capital Theory, the main proxies for  
14          skill level and productivity are education and experience?

15          A     No, I don't agree with that.

16          Q     Okay. I'd like to talk to you about the data that  
17          you testified earlier that you reviewed. The pay appraisals  
18          -- the pay appraisals were not done by Oracle, correct?

19          A     I can't hear what you said. Can you speak a little  
20          louder?

21          Q     Oh, I'm sorry. I thought I was close enough.  
22          Oracle did not conduct pay appraisals, correct?

23          MS. CONNELL: Objection, lacks foundation.

24          JUDGE CLARK: Ask him how he might know that.

25          Sustained. Lay a foundation.

1 BY MR. SONG:

2 Q Well, you previously testified that you reviewed  
3 Oracle's compensation documents, correct?

4 A What I reviewed were some materials that were  
5 presumably, I believe, provided to managers in connection  
6 with their reviewing pay or setting pay, or giving raises and  
7 so on and so forth. So, they were illustrative and  
8 explanatory materials regarding the pay structure and certain  
9 aspects of pay at Oracle. There were a series of  
10 PowerPoints, is what I reviewed.

11 Q Okay. And did you see any -- in the documents that  
12 you reviewed, did you see any documents showing that Oracle  
13 had conducted pay appraisals?

14 MS. CONNELL: Objection, lacks foundation.

15 JUDGE CLARK: Sustained.

16 Does he know what a pay appraisal is? Maybe you  
17 could ask him that.

18 MR. SONG: I'm sorry.

19 BY MR. SONG:

20 Q Do you know what a pay appraisal is, Dr. Saad?

21 A I have no idea what that means in the way that  
22 you're using it.

23 Q What about a pay equity analysis?

24 A Well, I've heard of a pay equity analysis, yes.  
25 And I do understand what that means, in general terms.

1 Q Okay. Because I believe you previously testified  
2 that you did pay equity analyses for employers?

3 A Yes, my firm has done pay equity studies.

4 Q As part of your consulting work, correct?

5 A That's correct.

6 Q And so you've been commissioned to do pay equity  
7 analyses by employers as part of your consulting work,  
8 correct?

9 A That's correct.

10 Q And when you're doing a gender pay equity analysis,  
11 would you have to control -- you would have to control for  
12 gender, correct?

13 A Pardon? Control for?

14 Q Gender. If you're doing a gender pay equity  
15 analysis, you would have to control for gender, correct?

16 A Well, typically, yes, you would.

17 Q And if you were conducting a general pay equity  
18 analysis, you would have to have data about gender, correct?

19 A Yes.

20 MS. CONNELL: Objection, incomplete hypothetical,  
21 lacks foundation.

22 JUDGE CLARK: Overruled, overruled.

23 BY MR. SONG:

24 Q Now, when you're doing a racial pay equity  
25 analysis, you would have to control for race, correct?

1           A     I think that's correct.

2           Q     Thank you. Do you know what a performance  
3 evaluation is, Dr. Saad?

4           A     Say that again?

5           Q     As a labor economist, do you know what an employee  
6 performance evaluation is?

7           A     I know what one is, yes.

8           Q     Okay. And did you review any performance  
9 evaluations from the documents that Oracle gave you?

10          A     I did review quite a few of the performance  
11 appraisal material. It was among the text based material  
12 that I referred to in my direct testimony.

13          Q     Okay. And do you know if performance appraisals  
14 were required by Oracle?

15          A     It's my understanding they were not required. But  
16 again, I did not -- I was not asked to look at performance  
17 appraisals, per se, but it's my general understanding that  
18 they were not required.

19          Q     And do you know if all employees at Oracle did  
20 self-evaluations?

21          A     I don't know if all did. I know some employees,  
22 and quite a few employees, because I did review many  
23 self-appraisals, as well, but I don't know if all employees  
24 conducted self-appraisals of their own work.

25          Q     And do you know if all manager do performance

1 evaluations for their directs?

2 A No, I don't know if they do or not.

3 Q Okay. All managers don't do performance  
4 evaluations, correct?

5 A Well, I don't know that one way or the other.  
6 Again, as I said, I did not study, in any systematic manner,  
7 the performance materials. I did review quite a bit of it,  
8 but I did not engage in any systematic analysis of those  
9 materials.

10 Q Since performance evaluations are not required by  
11 Oracle, when they do happen, this is a decision left up to  
12 the managers, correct?

13 MS. CONNELL: Objection, lacks foundation.

14 JUDGE CLARK: Overruled. If you know, you can  
15 answer that question.

16 THE WITNESS: Yeah, I don't know who it's up to,  
17 whether a performance appraisal is done or not.

18 BY MR. SONG:

19 Q As to the self-evaluations, this would include or  
20 require thousands of different employees completing these  
21 evaluations, correct?

22 A I'm not sure I understand that question. Can you  
23 repeat the question or rephrase it? I don't understand it.

24 Q Yeah. Okay. So, for the self-evaluations,  
25 self-performance evaluations that Oracle employees do or have

1 done, this would include thousands of different individuals  
2 completing those evaluations, correct?

3 A I don't know one way or the other. It could. I  
4 don't know.

5 Q AS you reviewed those narratives, those narratives  
6 vary widely as to the sort of information they included,  
7 correct?

8 A There was a lot of variety in terms of the nature  
9 of the material in those evaluation materials, that's  
10 correct.

11 Q And do you know who writes Oracle's job  
12 requisitions?

13 A No, I don't.

14 Q And you testified that you did not have enough  
15 requisitions to identify uniform controls for a regression  
16 analysis, correct?

17 MS. CONNELL: Objection, misstates testimony.

18 JUDGE CLARK: Overruled.

19 THE WITNESS: I don't recall any such statement by  
20 me. Can you repeat that and maybe I missed something there.

21 MR. SONG: Okay.

22 BY MR. SONG:

23 Q You testified that you did not have enough  
24 requisitions to identify uniform controls for a regression  
25 analysis, correct?

1           A     I didn't say any such thing, no.

2           Q     Okay.  And have you reviewed -- you previously  
3 testified that you reviewed resumes of Oracle employees,  
4 correct?

5           A     Yes.

6           Q     And those resumes were written by different  
7 applicants, correct?

8           A     I would assume that they prepared -- each applicant  
9 would prepare their own resume.

10          Q     And each of those applicants made different choices  
11 as to what information to include in their resumes, correct?

12          A     Well, I assume what they did is make the choice to  
13 include their own work experience on their resume and not  
14 somebody else's.  So, if you're saying that putting your own  
15 information on your resume is a choice relative to somebody  
16 else's information, I don't think that's a very -- it's not a  
17 choice.  I would think everybody chose to put on their resume  
18 the information that describes their background.  And  
19 everybody would engage in the same process of doing that, but  
20 of course every resume will be different, because each  
21 person's background is different.

22          Q     Okay.  Thank you.  Evaluations of an applicant's  
23 experience is subjective by nature, correct?

24                   MS. CONNELL:  Objection, lacks foundation.

25                   JUDGE CLARK:  Overruled.

1 THE WITNESS: Not necessarily. It depends how --  
2 what material on the resume you're referring to.

3 BY MR. SONG:

4 Q Okay. In your comparator example, you list the  
5 prior experience of a few individuals. You assert that those  
6 individuals' experience are very different, right?

7 A Which comparator examples are you referring to?

8 Q I believe it was in one of your slides, but I don't  
9 remember the slide.

10 A Well, if you could point me to some comparison I  
11 made, I might be able to answer the question more accurately.

12 Q Well, if you were --

13 MR. SONG: It's slides 25 through 29 of their  
14 demonstratives, can you pull that out? I think it starts on  
15 25 -- yeah.

16 THE WITNESS: Yes, I recall this comparison.

17 JUDGE CLARK: For the record, we're looking at page  
18 25 of Oracle's demonstrative exhibit.

19 MR. SONG: Yes, Your Honor.

20 JUDGE CLARK: Okay.

21 BY MR. SONG:

22 Q In this example you list the prior experience of a  
23 few individuals. Are you asserting that those individuals'  
24 experience are very different, correct?

25 A Well, it's not a few individuals, it's just two --

1 Q Two.

2 A -- in this case. And I am simply listing their  
3 experience on these pages, their prior experience, as well as  
4 other characteristics that they have.

5 Q But you believe that these individuals' experience  
6 are very different, correct?

7 MS. CONNELL: Objection, misstates testimony.

8 JUDGE CLARK: Overruled. You can answer that  
9 question.

10 THE WITNESS: Yes, it would appear that they are  
11 quite different.

12 BY MR. SONG:

13 Q But you're not an expert in the software industry,  
14 correct?

15 A That is correct.

16 Q So, you don't know, in fact, how or whether their  
17 experience is different, correct?

18 A Well, as I think I indicated in my direct  
19 testimony, you can see there are differences in the way in  
20 which their prior experiences are described. They appear to  
21 be discovering different kinds of activities. But you are  
22 correct, I'm not an expert, nor am I purporting to be, in the  
23 details of software tasks or technology tasks, you might say.

24 Q You also testified earlier today that you reviewed  
25 new hire and promotion narratives, correct?

1           A     Yes. I think I referred to them as justifications  
2 in my testimony.

3           Q     Justifications, okay. And these new hire and  
4 promotions narratives would have been completed by hundreds  
5 of different managers, correct?

6           A     Presumably, yes. Well, I don't know if it's  
7 hundreds or how many it is, but it would have been different  
8 individuals preparing those materials, that is correct.

9           Q     And these different managers would have had  
10 different styles, correct?

11          A     They might have.

12          Q     And the information that they included is not  
13 uniform, correct?

14          A     Well, it would depend on what information you are  
15 referring to. There are some very specific kinds of  
16 information that is referred to in these justifications, and  
17 the way in which that's expressed is probably fairly  
18 consistent, although I have not done an analysis of that.  
19 There may be other things that they describe that are unique  
20 to one individual and not to another individual, so there's  
21 certainly going to be differences and similarities in the  
22 kinds of verbiage you would find in these justifications.

23          Q     In constructing a statistical analysis, it's  
24 important that you frame the question you're studying in a  
25 neutral manner, correct?

1           A     I'm not sure what neutral manner means.

2           Q     How about using a word it sounds like you like to  
3 use, how about "unbiased"?

4                   MS. CONNELL:  Objection, vague.

5 BY MR. SONG:

6           Q     Not biased?

7           A     I'm not sure what you mean by bias, with respect to  
8 constructing a statistical analysis.

9           Q     Can you give neutral the ordinary meaning of  
10 neutral?

11          A     In this context, no --

12                   MS. CONNELL:  Objection.

13                   THE WITNESS:  -- I believe know what you're  
14 referring to.  Maybe you could try another way of asking me.

15                   MR. SONG:  Your Honor, I don't know how much  
16 simpler I can make "neutral."  It seems like a very obvious  
17 every day word that everyone uses.

18                   JUDGE CLARK:  But he's not prepared to answer the  
19 question because of the nature of his testimony, as I  
20 understood it.  So, ask him a different question or phrase it  
21 a different way.

22 BY MR. SONG:

23           Q     You don't want to assume an outcome in your  
24 research question, correct?

25           A     That's correct.

1 Q And you want to frame a question neutrally, so that  
2 you can avoid introducing bias into the model, correct?

3 MS. CONNELL: Objection, vague.

4 JUDGE CLARK: Overruled.

5 Can you -- answer the question, if you can?

6 THE WITNESS: I have to rephrase it a little bit  
7 into something that I can understand. I agree that you don't  
8 want to assume conclusions, I agree with that. I think that  
9 was your first statement. I agree that when you're  
10 structuring an analysis, you would want to structure an  
11 analysis such that you're not assuming conclusions one way or  
12 the other, I do agree with that.

13 BY MR. SONG:

14 Q The expert report you provided in the matter of  
15 Jewett v. Oracle, that was intended to respond to Dr.  
16 Newmark's report, correct?

17 A Yes, it was.

18 Q Okay. And specifically, your reports ought to  
19 respond to whether Dr. Newmark's report could reliably be  
20 used to evaluate whether there's compensation discrimination  
21 at Oracle, correct?

22 A No, that wasn't the purpose of that report.

23 Q Oracle did not ask you to study the ultimate merits  
24 of the compensation discrimination in Jewett v. Oracle  
25 American, correct?

1           A     No, because that's not the phase of the case --  
2     that's not the stage of the case. The stage of the case is  
3     class certification. So, they did not ask me to address the  
4     ultimate merits.

5           Q     So, you didn't conduct your own independent  
6     analysis of whether there is a gender pay gap for the Jewett  
7     plaintiffs, correct?

8           A     Again, I responded to Dr. Newmark in the context of  
9     class certification.

10          Q     Similarly, here the intention of your report is to  
11     rebut or respond to Dr. Madden's report, correct?

12          A     Yes.

13          Q     And your report in this matter sought to assess  
14     whether Dr. Madden's report could be reliably used to  
15     evaluate whether there is compensation discrimination at  
16     Oracle, correct?

17          A     Yes.

18          Q     And for purposes of this litigation, Oracle did not  
19     hire you to independently study whether pay discrimination  
20     existed at Oracle, did they?

21          A     That's correct.

22          Q     And you did not make your own evaluation  
23     independent of any party to this litigation, or whether pay  
24     discrimination exists at Oracle, correct?

25          A     I did not conduct a ground-up analysis, that is

1 correct.

2 Q And you did not make your own evaluation  
3 independent of Dr. Madden's study of whether pay  
4 discrimination exists at Oracle, correct?

5 A Again, what I did is respond to Dr. Madden's work  
6 to assess whether or not it could be used with appropriate  
7 modifications and corrections to support such an inference.

8 Q And you did not design your study to independently  
9 determine whether pay discrimination exists at Oracle,  
10 correct?

11 MS. CONNELL: Objection, asked and answered.

12 JUDGE CLARK: Overruled.

13 THE WITNESS: Yes. Again, I was asked to address  
14 Dr. Madden's report, once Dr. Madden had issued her report,  
15 and to assess its validity, not to conduct a separate  
16 free-standing analysis of my own.

17 MR. SONG: Thank you.

18 BY MR. SONG:

19 Q And you've never conducted your own independent  
20 evaluation of whether there was pay equity between men and  
21 women at Oracle, correct?

22 A I have not, not at this time.

23 Q And you have never conducted your own independent  
24 evaluation of whether there is pay equity between White and  
25 non-White people at Oracle, correct?

1           A     Again, I was not asked to do that and I have not  
2 done that.

3           Q     Thank you.  Instead, your study in Jewett sought to  
4 explain the pay disparity Dr. Newmark found, correct?

5           MS. CONNELL:  Objection, misstates testimony.

6           JUDGE CLARK:  Sustained.  And why are we asking  
7 about Jewett again, Mr. Song?

8           MR. SONG:  Because our view is that Dr. Saad has  
9 not independently assessed whether compensation disparities  
10 exist, but simply to poke holes in the relevant expert's  
11 reports and testimonies.

12          JUDGE CLARK:  And the Jewett case shows that  
13 because how?

14          MR. SONG:  Because I believe, as Dr. Saad has  
15 testified, he wasn't asked -- he was simply asked to rebut  
16 their reports and their testimonies, both Dr. Newmark and Dr.  
17 Madden.

18          JUDGE CLARK:  Okay.  I see.  So, go ahead, you can  
19 ask your question.

20 BY MR. SONG:

21          Q     Instead, your study in Jewett sought to explain the  
22 pay disparity Dr. Newmark found, correct?

23          MS. CONNELL:  Objection, misstates testimony.

24          JUDGE CLARK:  Overruled.

25          THE WITNESS:  It sought to assess the disparities

1 he found.

2 BY MR. SONG:

3 Q And your study in this matter similarly seeks to  
4 explain the pay disparity that Dr. Madden found, correct?

5 A To assess that disparity and whether or not there  
6 is a disparity. That's what my work in this case focused on.

7 Q And you've been retained by Oracle how many times?

8 A Three times, I think -- no, four times, four times.

9 Q And that was in this matter, in Jewett, was it  
10 Microsoft?

11 A Yes, Microsoft.

12 Q What was the fourth matter?

13 A A case involving -- I think it's called Andrews  
14 versus Lawrence Livermore Laboratory.

15 Q And Oracle provided you the data to rebut Professor  
16 Madden's report, correct?

17 A Say that again, please?

18 Q Oracle provided you the data to rebut Professor  
19 Madden's report?

20 MS. CONNELL: Objection, the preamble to the  
21 question lacks foundation and misstates testimony.

22 JUDGE CLARK: Sustained. Rephrase your question.

23 BY MR. SONG:

24 Q Who provided you the data to respond to Dr.  
25 Madden's report?

1           A     I was provided with, as I understand it,  
2 information that was requested during discovery, but I was  
3 provided directly with it by counsel for Oracle. I  
4 understand it was provided in connection with discovery in  
5 this case.

6           Q     Okay. And other than the patent office data and  
7 the longitudinal study data, all the data that you used in  
8 your report and rebuttal Orrick gave to you, correct?

9           A     No.

10          Q     No. Is there other data that you obtained from  
11 another source?

12          A     Yes.

13          Q     And what was that?

14          A     National Education Statistics, it was a database  
15 that I referred to in my testimony that I obtained data from,  
16 which is an external data source.

17          Q     Okay. Was there anything else?

18          A     Not that I recall that was data.

19          Q     Okay. So, other than those three sources of data,  
20 Orrick provided you -- counsel for Oracle provided you the  
21 rest of the data, correct?

22          A     Well, that's pretty standard. In analyzing the  
23 company pay data, you typically get the data of the company,  
24 typically that's going to come through your client, your  
25 counsel, your client counsel. So, I happened to collect, in

1 this case, additional data beyond what is normally produced  
2 in these situations.

3 Q And do you know what products Oracle produces?

4 A I know there are many of them. I know of some  
5 names of them. But there are hundreds of products and  
6 services falling into a variety of categories. But as I  
7 said, I'm not an expert in the specifics of the technology or  
8 that sort of thing. I do know that they produce large  
9 numbers of various types of products associated with a wide  
10 variety of things in the technology space.

11 Q And you know what services they provide, correct?

12 A Some of those, yes, I do.

13 Q Okay. And as far as you know, Oracle provides  
14 database management products and services?

15 A That's my understanding.

16 Q And if you did not have specific data to analyze  
17 for your regressions, this would be because Oracle did not  
18 provide you the data, correct?

19 A I'm not sure I understand the question. Can you  
20 ask that again?

21 Q Well, any data that you -- other than those three  
22 sources that you -- public sources of data that you  
23 mentioned, any company data that you would need for your  
24 analysis would have been provided by Orrick, correct?

25 MS. CONNELL: Objection, vague, assumes facts.

1 JUDGE CLARK: Overruled.

2 THE WITNESS: You mean from a technical point of  
3 view, yes, the data I received relative to Oracle did come  
4 from Orrick.

5 MR. SONG: Okay.

6 THE WITNESS: They're separate.

7 MR. SONG: I know it can get confusing.

8 BY MR. SONG:

9 Q So, if you were missing any specific data for your  
10 analysis, it would be because Orrick did not provide it to  
11 you, correct?

12 A I guess, in some general sense that sounds like, by  
13 definition, it would be true. But I'm not sure what you're  
14 referring to.

15 Q Oracle never provided you with any data that  
16 directly identifies what products employees work on, correct?

17 A As I understand it, they did provide some data that  
18 does relate to and correspond to products, but there is no  
19 field in the database for product, that is true, at least in  
20 the Human Resources data.

21 Q Okay. Thank you.

22 JUDGE CLARK: So, Mr. Song, we'll take another  
23 afternoon break. Why don't you let me know when you find a  
24 good place to stop.

25 MR. SONG: Okay. I'm actually -- I think I just

1 have one more question and then we can take a break, Your  
2 Honor.

3 JUDGE CLARK: Okay.

4 BY MR. SONG:

5 Q Oracle did not give you any data containing any  
6 database which identified employee skills, correct?

7 MS. CONNELL: Objection --

8 THE WITNESS: Well, no. There was voluminous  
9 information on employee skills in these justification  
10 materials we discussed a few minutes ago, in the  
11 requisitions, in the resumes, in the self-evaluations.  
12 There's an enormous amount related to the specific skills of  
13 employees and so that information is contained in those  
14 repositories.

15 MR. SONG: Okay. But that wasn't my question.

16 BY MR. SONG:

17 Q Was there any database which specifically  
18 identified employee skills?

19 A Well, these came out of databases. This is  
20 material from databases.

21 Q You didn't see any data fields in the HR data  
22 listing employee skills, correct?

23 A Not in the HR files, the GSI files, it was not in  
24 there, but certainly in other databases that I was provided  
25 with, the text materials were in databases.

1 MR. SONG: All right. We can take a break, Your  
2 Honor. Thank you.

3 JUDGE CLARK: Okay. We'll take an afternoon break.  
4 We'll be off the record until 4:10 o'clock p.m.

5 You can step down, Doctor.

6 We're off the record.

7 (Off the record at 3:57 o'clock p.m.)

8 JUDGE CLARK: Okay. We're back on the record.

9 Dr. Saad is on the stand. Mr. Song, you may  
10 continue. The other counsel are here.

11 BY MR. SONG:

12 Q Dr. Saad, regarding the human rights database  
13 fields -- not talking about the narrative fields -- regarding  
14 the human rights database fields, were there any specific  
15 lines for programming?

16 JUDGE CLARK: You said "human rights," do you mean  
17 -- did you mean Human Resources?

18 MR. SONG: Human Resources.

19 JUDGE CLARK: Okay.

20 MR. SONG: Thank you.

21 THE WITNESS: Say that again.

22 BY MR. SONG:

23 Q Regarding the human rights (sic) database fields --

24 A Human Resources?

25 Q Sorry. I'm sorry. Human Resources database not

1 including the narrative fields, were there specific fields  
2 for skills such as programming?

3 A I didn't see any in the HR database files that I  
4 had, any fields that related specifically to specific skills.

5 Q Okay. And Dr. Madden's initial report, her Tables  
6 1d, 2d, 3b, all provide analyses regarding base pay, correct?

7 A These were the "d" series?

8 Q Yes.

9 A Is that what you said?

10 Q "D" and "b," so it's 1d, 2d and 3b?

11 A Yeah, it looks like those do relate to base pay  
12 rates.

13 Q Okay. I next want to talk about your Cost Center  
14 or organization variable?

15 A Okay.

16 Q And you said that you chose the organization name  
17 or Cost Center variable because it serves as a proxy for  
18 products employees work on, correct?

19 A Products or services employees work on. And I  
20 think I also described it related to the nature of the work  
21 employees are engaged in.

22 Q And each organization is the name of the budget  
23 unit that Oracle places its employees in, correct?

24 MS. CONNELL: Objection, lacks foundation.

25 JUDGE CLARK: Sustained. How might he know that,

1 Mr. Song? Just lay some foundation.

2 BY MR. SONG:

3 Q How did you choose the organization name variable,  
4 Dr. Saad?

5 A I believe I had an awareness that when I was  
6 reviewing the requisitions organization name was present in  
7 the requisition information. So, you could see to what  
8 organization individuals were applying and the you could see  
9 the descriptive material that related to those applications.

10 And when I was reviewing, in particular, the software  
11 developer 4 set of materials, those materials appear to  
12 correspond to -- appear to indicate that there might be  
13 differences in the nature of the work being performed,  
14 depending on the organization name they were associated with.

15 So, I thought that might be a variable that could be  
16 explanatory. And I was told that Mr. Miranda would be  
17 opining to the fact that there was an approximate  
18 correspondence between organization names, the "field," as  
19 it's called, and product or service or type of work being  
20 engaged in. So, that was the reason.

21 Q You stated, in your expert report in this case,  
22 that you relied on the organizational variable based on the  
23 declaration of Steven Miranda, correct?

24 A Yes.

25 Q Okay. And --

1           A     Which I just said.

2           Q     Okay.  And each organization name is the name of a  
3 budget unit that Oracle places Oracle employees in, correct?

4           MS. CONNELL:  Objection, lacks foundation.

5           JUDGE CLARK:  Overruled.

6           You can answer the question.

7           THE WITNESS:  I'm not certain if that's the case.

8     I understand there may be some relationship between budget  
9 and -- there may be some budgetary relationship to  
10 organization name designations.  But I didn't -- that was not  
11 relevant, really, to my analysis.

12  BY MR. SONG:

13          Q     And you've admitted that organization is not a  
14 variable for product, per se, correct?

15          MS. CONNELL:  Objection, misstates testimony.

16          JUDGE CLARK:  Overruled.

17          THE WITNESS:  Well, I think what Mr. Miranda says,  
18 that in some cases it is very, very much associated with  
19 product or service, and other cases a little less so, in some  
20 cases.  So, there's an approximate, as I said, an approximate  
21 relationship.  It's an approximate proxy for product or  
22 service, or nature of work being engaged in.  It's not a  
23 perfect proxy.

24  BY MR. SONG:

25          Q     And before you chose organization, you knew that it

1 contained hundreds of classes of organizations, correct?

2 A I knew there were a lot of them, yes.

3 Q But you didn't know how strong the correlation  
4 between organization product was at the time you chose the  
5 variable for your analysis, correct?

6 A I'm not sure I understand that question.

7 Q You didn't know if there was a strong correlation  
8 between organization and product at the time you chose the  
9 organization variables for analysis, correct?

10 A Well, I wasn't doing an independent assessment of  
11 that. All I know was that Mr. Miranda stated that there was  
12 an approximate relationship between organization name that  
13 was present in the data, and product or service associated  
14 with that organization name.

15 Q And you didn't know how strong the correlation  
16 between organization and product was at the time of your  
17 deposition in this matter, correct?

18 A I think it would be the same answer. It's not -- I  
19 did not try to assess that, so no, I don't know. I'm  
20 listening to Mr. Miranda, who is testifying regarding the  
21 relationship between organization name and product or  
22 service.

23 Q Okay. Can we turn to your deposition, page 245,  
24 lines 8 through 11?

25 JUDGE CLARK: Is this Plaintiff's 7?

1 MR. SONG: Yes, Your Honor.

2 JUDGE CLARK: Go ahead.

3 BY MR. SONG:

4 Q On line 8 I asked you:

5 "Question: How strongly do you  
6 believe organization is correlated to  
7 product?

8 "Answer: I don't know."

9 Is that correct?

10 A Yes, that is correct and that's essentially what  
11 I'm saying now, it's not something I studied.

12 Q The HR data that you analyzed in this matter didn't  
13 contain any data on products, correct?

14 MS. CONNELL: Objection, misstates testimony.

15 JUDGE CLARK: Overruled.

16 THE WITNESS: Again, in the HR database, I did not  
17 see a field name entitled: "Product" associated with  
18 employees. But organization name, I did see. And that is  
19 associated with employees. And to the extent that that  
20 correlates or approximates product, then that is an indirect  
21 measure or an imperfect measure of product. That's the best  
22 I can do with the HR database that I had to work with.

23 JUDGE CLARK: So, Dr. Saad, now I'm going to ask  
24 you to pull your microphone just a little closer.

25 THE WITNESS: Sorry.

1 JUDGE CLARK: That's okay. You don't have to lean  
2 in. It should slide. I'm not sure how big the bench is, but  
3 okay.

4 THE WITNESS: Okay. Is that better?

5 JUDGE CLARK: Much better. Thank you.

6 THE WITNESS: Okay.

7 BY MR. SONG:

8 Q And none of the personnel data that you analyzed in  
9 this case contains data relating to the products employees  
10 work on, correct?

11 A You mean in a field?

12 Q Yes.

13 A In a field, like a column in a database?

14 Q Yes, that's correct.

15 A Not that I see. And again, it's not a column in  
16 the database.

17 Q Okay. Thank you. And not every organization is  
18 associated with a product, correct?

19 MS. CONNELL: Objection, calls for speculation.

20 THE WITNESS: I don't know if that's true or not.

21 JUDGE CLARK: Overruled. I'll let the answer  
22 stand.

23 THE WITNESS: I don't know if that's true or not.

24 BY MR. SONG:

25 Q Okay. Can we turn to page 250 of Dr. Saad's

1 deposition, lines 13 through 20? I asked you, at your  
2 deposition:

3 "Question: Is every organization  
4 associated with a product?

5 "Answer: As a general matter, probably  
6 not, most certainly not."

7 Is that correct?

8 A Yes, that's what I said.

9 MS. CONNELL: Once again, this deposition testimony  
10 doesn't actually impeach. There hasn't been a single  
11 instance of deposition testimony impeaching the witness.

12 JUDGE CLARK: Overruled.

13 BY MR. SONG:

14 Q You're familiar with Oracle's Global Job Table,  
15 correct?

16 A I'm somewhat familiar with that, yes.

17 Q And you understand product does not appear in  
18 Oracle's Global Job Table, correct?

19 A In Global Job Table, yes, there's no reference to  
20 products specifically in the Global Job Table. That's not  
21 its intent.

22 Q And you understand Oracle doesn't track which  
23 product might be related to employees, correct?

24 A I'm not sure what you mean by "track"? Again,  
25 there's no "field" in the database.

1 Q Okay. That's fine.

2 A I think I indicated that I hadn't seen one.

3 Q Yes. And you don't know how often a product  
4 corresponds to a unique cost center, correct?

5 MS. CONNELL: Objection, asked and answered.

6 JUDGE CLARK: Overruled.

7 THE WITNESS: Again, I did not conduct an analysis  
8 of that question. I relied upon Mr. Miranda's declaration as  
9 someone more knowledgeable about this issue than I am. And  
10 so I relied upon his declaration regarding this issue.

11 BY MR. SONG:

12 Q And you didn't conduct a study of whether product  
13 corresponds to a unique cost center before choosing the  
14 organization variable, correct?

15 MS. CONNELL: Objection, asked and answered.

16 JUDGE CLARK: Mr. Song, haven't you been over this  
17 or is this somehow different?

18 MR. SONG: I believe it's a little bit different,  
19 Your Honor.

20 JUDGE CLARK: Okay. Overruled. You can answer the  
21 question.

22 THE WITNESS: Okay. If it's different, the  
23 subtlety escapes me. But as I said, I did not do an  
24 individual analysis of the relationship between organization  
25 name and product. I did rely on Mr. Miranda and the

1 statements he made in his declaration, as somebody,  
2 presumably, knowledgeable about this issue.

3 Q And it's possible that a product at Oracle has more  
4 than one Cost Center assigned to it, correct?

5 MS. CONNELL: Objection, calls for speculation.

6 JUDGE CLARK: Overruled. You can answer the  
7 question, if you know.

8 THE WITNESS: I imagine it could be. I don't know  
9 that for certain. I can imagine such a circumstance.

10 BY MR. SONG:

11 Q And you don't know which specific product is  
12 associated with each organization in your organization  
13 variable, correct?

14 A I did not study that issue in any systematic  
15 manner. Again, as I said, I used the organization name based  
16 on the testimony or the declaration of Mr. Miranda.

17 Q Mr. Miranda's declaration only suggests that there  
18 is some relationship between product and organization,  
19 correct?

20 A There's, as I recall, an approximate relationship.  
21 It doesn't say that there's a perfect relationship, that's  
22 correct.

23 Q And you relied on Mr. Miranda's declaration to  
24 support your decision to control for organization, even  
25 though you didn't know how strong the correlation is between

1 organization and product, correct?

2 MS. CONNELL: Objection, asked and answered.

3 JUDGE CLARK: Sustained.

4 BY MR. SONG:

5 Q Do you know how many organization variables there  
6 are?

7 A It depends on the year. There's quite a few over  
8 the entire course of the period 2013 to 2018, but in any  
9 given year there's several hundred across all of the job  
10 functions.

11 Q But in your previous knowledge earlier today, you  
12 testified that there were over 1000 organizations, correct?

13 A Over the course of the entire period there are over  
14 1000 separately identified organization name codes that occur  
15 in the data.

16 Q And approximately 400 of these organizations have  
17 only one employee in them, correct?

18 A I don't know if it's 400. There are a fair number  
19 of them that have a single employee, that is correct.

20 Q So, approximately half of the organization  
21 variables were not valid to use in your analysis, correct?

22 A Well, they don't end up being used in the  
23 statistical analysis. It turns out, I think it's somewhere  
24 around two percent of employees are associated with these  
25 single observation, single person organizations. So, from a

1 technical perspective, they don't get used in a statistical  
2 analysis, they are dropped. But it's only about two percent  
3 of the employees.

4 Q Cost Centers are used to track budgetary items,  
5 such as travel and entertainment, correct?

6 A I wouldn't know that. I didn't study travel and  
7 entertainment.

8 Q Are you familiar with the Cost Center 0Q87 Global  
9 Product Security?

10 A Not specifically, no.

11 Q Do you know which product is connected to that Cost  
12 Center?

13 A Not specifically, no.

14 Q What about 0D48 Account Governance, do you know  
15 which product is connected to that Cost Center?

16 A It would be the same answer. There's no need for  
17 me to know what product associates with what Cost Centers,  
18 since I was not really interested in the specifics of the  
19 Cost Centers. I was using the data in order to approximate  
20 different products or different nature of the work, based on  
21 Mr. Miranda's declaration, not on my own independent  
22 research, because I would have no way of assessing that on my  
23 own as to what product was which.

24 Q And Oracle's compensation policies don't mention  
25 organization, correct?

1 MS. CONNELL: Objection, assumes facts, lacks  
2 foundation.

3 JUDGE CLARK: Sustained.

4 BY MR. SONG:

5 Q Have you reviewed Oracle's compensation policies?

6 MS. CONNELL: Assumes facts, lacks foundation.

7 JUDGE CLARK: Overruled.

8 THE WITNESS: I've reviewed some materials that  
9 relate to compensation. There are various guidelines, I  
10 think they're referred to, various PowerPoints. By no means  
11 do I think I've reviewed every single such document. I was  
12 provided with a fair number of them and I did review them.

13 MR. SONG: Okay.

14 BY MR. SONG:

15 Q In reviewing compensation documents from Oracle,  
16 you didn't see any mention of organization, correct?

17 A The word "organization"? The word, I did not see  
18 the word "organization" --

19 Q Or Cost Center.

20 A -- or "Cost Center," in those materials. But I'm  
21 not -- I'd have to go and look at them and see whether, in  
22 fact, I overlooked that. I wasn't looking at those documents  
23 for purposes of seeing whether organization name was present  
24 in any of those documents. So, I don't know.

25 Q Okay. Thank you. And you didn't interview

1 employees about organization, correct?

2 A No, I did not.

3 Q And in the compensation documents that you  
4 reviewed, you didn't see any mention of product, correct?

5 A I think there are references in those materials.

6 Q I'm sorry, Dr. Saad, I'm trying to move things  
7 along here and I'm asking yes or no questions. Can you just,  
8 please, answer yes or no?

9 A Okay. If you're asking me that -- I'm not sure.

10 Q And you stated in your report that product data is  
11 not available, correct?

12 A I believe I state something to the effect in the  
13 report that there is no field in the database that I can  
14 associate with employees uniquely, that associate them with  
15 the products they work on. I think that's what I stated.

16 Q Again, if you could please just answer yes or no,  
17 because I'm trying to ask a yes or no question.

18 JUDGE CLARK: Mr. Song, he's responding to your  
19 questions. If you think it's non-responsive, make an  
20 objection, but otherwise ask your next question.

21 BY MR. SONG:

22 Q Oracle didn't record the products employees worked  
23 on, correct?

24 A I'm not sure if that's true or not. They might  
25 have.

1           Q     And product is not considered anywhere in  
2 statements about how pay is set, correct?

3           MS. CONNELL:  Objection, lacks foundation.

4           JUDGE CLARK:  Sustained.

5           Give him some context or ask the question  
6 differently.  How would he know that?

7           MR. SONG:  Well, he testified, Your Honor, that  
8 he's reviewed documents regarding Oracle's compensation  
9 policies.

10          JUDGE CLARK:  Not all of them, though.  So, ask  
11 your question again.

12         BY MR. SONG:

13          Q     The compensation documents that you just testified  
14 that you reviewed, was product -- product was not considered  
15 in any of those documents, correct?

16          MS. CONNELL:  Objection, asked and answered.

17          JUDGE CLARK:  Overruled.

18          You can answer the question.

19          THE WITNESS:  In those documents, I believe there  
20 are --

21          MR. SONG:  Objection, non-responsive, Your Honor,  
22 move to strike.

23          JUDGE CLARK:  Overruled.

24          You can complete your answer.

25          THE WITNESS:  Thank you.  In those documents are

1 discussions about what are referred to as "hot skills,"  
2 discussions referred to the various attributes of the  
3 employee, presumably those would be in relation to the type  
4 of work they might be asked to do and are being considered  
5 for. So, in that sense that's -- I'm not sure if I saw the  
6 word "product" or not, it may be in those documents, I can't  
7 tell you for sure, as I sit here. But that's certainly  
8 associated, that kind of discussion that is extensive in  
9 these documents, is certainly associated with what I'm  
10 getting at by the use of organization name, which as I  
11 described earlier is nature of work.

12 BY MR. SONG:

13 Q Product line is not -- product line assignment is  
14 not factored into compensation decisions, correct?

15 MS. CONNELL: Objection, lacks foundation, assumes  
16 facts.

17 JUDGE CLARK: Overruled.

18 You can answer the question.

19 THE WITNESS: But it would be, because if you are  
20 responding to a particular requisition, that requisition is  
21 offering compensation, that requisition is in connection with  
22 an organization name. So, yes, there would be some  
23 relationship between pay setting and organization name, to  
24 the extent organization name is proxies approximately for  
25 product, then it would associate the product.

1 BY MR. SONG:

2 Q Oracle compensation is set by job code, correct?

3 MS. CONNELL: Objection, lacks foundation.

4 JUDGE CLARK: Overruled.

5 You can answer the question.

6 THE WITNESS: I don't understand that question,  
7 you'd have to ask it again.

8 BY MR. SONG:

9 Q Oracle compensation is set by job code, correct?

10 MS. CONNELL: Asked and answered. Sorry, I  
11 withdraw the objection.

12 JUDGE CLARK: It's the same question he said he  
13 didn't know the answer to.

14 THE WITNESS: I don't understand the question. If  
15 you would be a little more specific about -- in your  
16 question, then maybe I could answer it.

17 BY MR. SONG:

18 Q Job code is one of the factors that Oracle uses to  
19 set compensation, correct?

20 A Yes.

21 Q Thank you. If an employee changes organization,  
22 there's no increase in compensation, correct?

23 A I don't know if that's a universal statement. I  
24 know that it could change, it may not change. I don't know.  
25 I didn't study that.

1 Q Are you aware if employees receive raises with  
2 transfers?

3 A I did not study that, so I don't know.

4 Q In your report you criticize -- in your initial  
5 report, you criticized OFCCP for using Medicare wages,  
6 correct?

7 A Yes.

8 Q And you criticized OFCCP for mis-measuring total  
9 compensation?

10 A I said that the use of Medicare wages doesn't  
11 measure total compensation in a particular year, yes.

12 Q And you're familiar with W-2 Medicare wages?

13 A Yes.

14 Q So, you know that you incorrectly stated taxable  
15 pay is affected by the decisions employees make about 401K  
16 contributions, correct?

17 A Yes, that was incorrect. It is not correct that  
18 Medicare wages do not include 401K contributions. It does  
19 include them.

20 Q But you stated that twice in your initial report,  
21 correct?

22 A If it was twice, I did state it. I didn't realize  
23 it was twice, but if it's twice, it's twice. And yes, I  
24 agree that that is an incorrect statement.

25 Q In analyzing the results of a regression analysis

1 showing unequal pay by gender, it can be appropriate to  
2 conclude that the finding is consistent with an inference of  
3 discrimination, correct?

4 A From a theoretical perspective?

5 Q Yes.

6 A Of course from a theoretical perspective that's a  
7 very general statement, but yes, the answer is yes.

8 Q And the same would be true of a regression analysis  
9 showing unequal pay by race, correct?

10 A That from a theoretical perspective one could  
11 construct an analysis to draw that inference?

12 Q Yes.

13 A Yes.

14 Q Thank you. And isn't it true that you believe that  
15 it's not possible to infer discrimination unless you include  
16 every shred of information about an employee into a  
17 regression analysis?

18 A No, I don't say that.

19 Q Okay.

20 MR. SONG: Can we look at the Jewett deposition,  
21 page 87?

22 BY MR. SONG:

23 Q Do you remember saying that unless you include  
24 every shred of information about an employee into a  
25 regression analysis it's not possible to infer

1 discrimination?

2 A Are you directing me to --

3 Q No, I'm just --

4 A I just found it.

5 MS. CONNELL: What line are you looking at?

6 JUDGE CLARK: Line 24.

7 MR. SONG: Line 24. I was just asking if he  
8 remembered the testimony.

9 THE WITNESS: The word "shred" is there, but I'm  
10 only seeing a part of the sentence. I don't know the  
11 context.

12 MR. SONG: Okay. Well, I'll -- line 20 the  
13 question asks:

14 "Question: Describe the circumstances in which  
15 it would be appropriate?"

16 THE WITNESS: What would be appropriate? I'm  
17 sorry.

18 BY MR. SONG:

19 Q If you go to line 3, the answer -- you respond --  
20 or actually I think line 7:

21 "But in a general statement, one has  
22 to include the qualification, but since  
23 it's unobservable, the finding would only  
24 be consistent with an inference of  
25 discrimination. It would not demonstrate

1           that there is discrimination."

2           And so they continued to ask you:

3                 "Question: It may indicate that  
4           sometimes it is appropriate?"

5           (Counsel is not near microphone.)

6           Oh, I'm sorry -- sorry.

7           And then you answered:

8                 "Answer: Depending on the  
9           circumstances, depending on what you knew  
10          about the specifics of a particular  
11          setting."

12          And you also responded:

13                 "Answer: You may have more confidence  
14          in one set of outcomes than some other  
15          set of outcomes."

16          And the attorney asked you:

17                 "Question: Describe the circumstances  
18          in which it would be appropriate?"

19                 "Answer: Well, if I can, I can give  
20          you a hypothetical, if you know  
21          absolutely every thread of information  
22          about what the people -- what the work  
23          is" --

24          Can we turn to the next page, please?

25          -- "the characters of the people doing

1           the work, their effort in doing the work,  
2           essentially everything, and you took  
3           those things into account in a  
4           statistical analysis, I think most labor  
5           economists, within a setting like that,  
6           would say I have reasonable confidence  
7           that there must be some association with  
8           gender in the way pay was set, but that  
9           is a very extreme set of circumstances  
10          that I have not seen in my career,  
11          frankly."

12          MS. CONNELL: I'm going to object that this is  
13          taken out of context. He still hasn't established what the  
14          "it" is. It's fairly obvious that it's not referring to any  
15          sort of inference, so I think it's misleading and, once  
16          again, does not impeach his testimony.

17          JUDGE CLARK: I would agree with that, so  
18          sustained.

19          BY MR. SONG:

20           Q     As a labor economist, you are familiar with the  
21           term: "multicollinearity," correct?

22           A     Yes.

23           Q     Okay. And you're aware that multicollinearity  
24           occurs when you have two or more variables in a statistical  
25           model that measures similar effects, correct?

1 A Broadly speaking, yes.

2 Q And isn't it true that the more variables you add  
3 into a labor economics statistical model, the greater risk  
4 that the data in your variables will be collinear?

5 A Again, broadly speaking, yes, the more variables  
6 you enter, the greater the chances are that there will be  
7 multicollinearity, all else constant.

8 Q And isn't it true that multicollinearity presents  
9 problems to a statistical model?

10 A It can.

11 Q You studied initial job assignments at Oracle,  
12 correct?

13 A I did some study of that, yes.

14 Q Okay. In your analysis of the job assignments, you  
15 studied less than two-thirds of Oracle's employee assignments  
16 between 2013 and 2018, correct?

17 A That's incorrect.

18 Q And you did not perform the initial assignment  
19 analysis Dr. Madden describes in pages 32 to 37 of her  
20 rebuttal report, correct?

21 JUDGE CLARK: You said of Madden's rebuttal report?

22 MR. SONG: Yes, Dr. Madden.

23 JUDGE CLARK: Okay.

24 THE WITNESS: What pages are you referring to,  
25 again?

1 MR. SONG: Thirty-two to 37.

2 THE WITNESS: Of her initial -- of the rebuttal  
3 report?

4 MR. SONG: Yes, that's correct.

5 THE WITNESS: I'm looking at page -- oh, I was  
6 confused. There are two page numbers on this document.  
7 Okay. I'm not at page 32. Yes, I see the discussion here.  
8 There's a discussion of table R-8, I'm looking at that, if  
9 that's what you directed me to. I don't know.

10 BY MR. SONG:

11 Q Yes. You didn't perform the initial assignment  
12 analysis Dr. Madden describes on pages 32 and 37, correct?

13 A I'm not sure what you're referring to.

14 Q And you didn't analyze whether jobs advertised at  
15 lower global career levels were more likely to be filled at  
16 different global levels than those at higher levels, correct?

17 A I did not. When I did my initial assignment  
18 analysis I did not dis-aggregate it, as I've described  
19 earlier today.

20 Q And you didn't analyzes whether there were racial  
21 or gender differentials in the initial assignment, when hired  
22 for advertised jobs at the same global career levels,  
23 correct?

24 A I combined the global career levels when I looked  
25 at the up and down leveling issue, which is the way in which

1 I approached the initial assignment analysis.

2 Q And you testified earlier today that assigned  
3 career levels can move up one or down one, correct?

4 A Yes.

5 Q I would next like to turn your attention to your  
6 study of prior and starting pay. For your analysis you  
7 reviewed the National Longitudinal Survey data on prior pay  
8 and starting pay for people who changed jobs, correct?

9 A Yes, I did do that.

10 Q Okay. And are you aware that when you limit the  
11 analysis to college degree or higher, the correlation drops  
12 to .68?

13 MS. CONNELL: Objection, lacks foundation.

14 JUDGE CLARK: Overruled.

15 THE WITNESS: I'm not sure if that's the case or  
16 not.

17 MR. SONG: Okay.

18 THE WITNESS: That's not what I found.

19 BY MR. SONG:

20 Q Are the employees in your -- are you aware the  
21 employees in your NLS analysis are low paid employees?

22 MS. CONNELL: Objection, lacks foundation.

23 JUDGE CLARK: Overruled.

24 THE WITNESS: I'm not sure if that's the case or  
25 not. I don't know what you mean by "low paid employees."

1 there are all kinds of different employees in the NLS data.

2 BY MR. SONG:

3 Q Their average prior salary was 1762, correct?

4 A I'm not sure if that's correct or not.

5 Q Okay.

6 A I don't know where you're getting that number.

7 Q And aware you aware that their average starting  
8 wages was 2818?

9 A Again, I'm not sure where these numbers are coming  
10 from, so no, I'm not aware of that.

11 Q Okay. But neither of those salaries are anywhere  
12 close to the pay of Oracle employees, correct?

13 A Those particular numbers are not, but that's not  
14 the point of the analysis.

15 Q I next want to ask you some questions about leaves  
16 of absence. You control both for cumulative leaves of  
17 absence and whether the employee took a leave of absence in  
18 the current year, correct?

19 A Yes.

20 Q Oracle doesn't consider leaves of absence in  
21 setting compensation, correct?

22 MS. CONNELL: Objection, vague.

23 JUDGE CLARK: Overruled.

24 If you know?

25 THE WITNESS: I don't know if they do or not,

1 specifically.

2 BY MR. SONG:

3 Q And you know women are more likely to take extended  
4 leaves of absence, correct?

5 A I think that's pretty well known among labor  
6 economists.

7 Q Yet you included a cumulative leave of absence  
8 variable, correct?

9 A I did, yes.

10 Q And the cumulative leave variable that you include  
11 as a control in your regression is an inaccurate measure of  
12 actual cumulative leave, correct?

13 A I'm not sure I understand that question. Let me  
14 try here. Can you repeat it, again?

15 Q Sure. The revariable (sic) that you include as a  
16 control in your regression is an inaccurate measure of actual  
17 cumulative leave, correct?

18 A Well, I think, as I say in my report, it will  
19 understate the amount of cumulative leave individuals have  
20 because I can only observe episodes of leave in the Oracle  
21 data. I cannot observe it, for example, in the data for  
22 individuals who are from acquired companies. I cannot  
23 observe it for individuals who -- prior to their arrival at  
24 Oracle. So, it is an understatement of the cumulative leave  
25 for all individuals, whoever they might be, both men and

1 women in the data, that is correct.

2 Q So, you don't have complete leave data for  
3 employees from acquired companies, correct?

4 A From acquired companies, I don't have the leave  
5 they took while at the acquired company. I only have the  
6 leave they took once they arrived at Oracle.

7 Q And you don't have complete leave data for  
8 employees from non-US Oracle affiliates, correct?

9 A That would be correct. No -- I think from non-US  
10 Oracle affiliates, I think I do have the leave information.

11 Q In fact, there are over 1000 unique employees that  
12 are either from acquisitions or non-US Oracle affiliates,  
13 correct?

14 A Mostly they're from non-Oracle affiliates, and that  
15 is correct.

16 Q And in your original report, you address this  
17 problem by adding an additional variable to control, at least  
18 in part, for this measurement, correct?

19 A For which measurement?

20 Q For the cumulative leave of absence -- I'm sorry --  
21 for the problem of not having complete leave data?

22 JUDGE CLARK: Do you understand the question?

23 THE WITNESS: No, not at all.

24 JUDGE CLARK: Rephrase your question, Mr. Song.

25 MR. SONG: Okay.

1 BY MR. SONG:

2 Q In your original report, you addressed the problem  
3 of not having complete data, leave data, by adding an  
4 additional variable to control, at least in part, for this  
5 measurement error, correct?

6 A No, that's not right. I think what you're  
7 referring to is that I flagged individuals who are acquired  
8 and individuals who came to Oracle through an acquisition. I  
9 did do that. But it wasn't for that purpose alone, it was in  
10 general. The question was holding all else constant about  
11 these individuals, once they're at Oracle American, in HQ, is  
12 their status as having come from an acquisition associated  
13 with pay, yes or no? So, that's why I controlled for, for  
14 example, for acquisition status.

15 Q Okay. And when you attempted to control, at least  
16 in part, the missing leave information, you're acknowledging  
17 that this doesn't fix the fact that your leave variable is  
18 mismeasured, correct?

19 MS. CONNELL: Objection, lacks foundation.

20 JUDGE CLARK: Overruled.

21 You can answer the question.

22 THE WITNESS: The flags do not, necessarily,  
23 they're not standing in for missing leave information. I  
24 stated quite clearly that I don't have complete information  
25 on cumulative leaves for all individuals. So, that is a fact

1 that is correct. But it's correct in the inaccuracy applies  
2 to all of the employees in the analysis evenly.

3 BY MR. SONG:

4 Q And you criticized OFCCP for not using patent  
5 bonuses as a variable, didn't you?

6 A Yes, I did.

7 Q Okay. But you didn't control for patent bonus in  
8 your Jewett report, correct?

9 A That's correct.

10 Q Are patents mentioned in Oracle's compensation  
11 policies?

12 MS. CONNELL: Objection, lacks foundation.

13 JUDGE CLARK: Overruled.

14 If you know?

15 THE WITNESS: They well might be. I did not review  
16 those particular materials with regard to the issue of  
17 patents, but it would not surprise me if there's some  
18 mention, somewhere in there. But I can't tell you as I sit  
19 here.

20 BY MR. SONG:

21 Q But you, personally, haven't seen any mention of  
22 patents in Oracle's compensation documents, correct?

23 MS. CONNELL: Objection, asked and answered.

24 JUDGE CLARK: Sustained.

25 BY MR. SONG:

1 Q And you don't know what qualifies an employee for a  
2 patent bonus, correct?

3 A I have a general understanding of that.

4 Q I want to turn your attention to page 58 of your  
5 rebuttal?

6 A I'm viewing it on the screen.

7 Q Okay. Do you need a minute to review it?

8 A No, got it.

9 JUDGE CLARK: You're referring to Joint Exhibit  
10 104, page 58.

11 BY MR. SONG:

12 Q And in order to produce your table on page 58, you  
13 re-estimated Dr. Madden's promotion analysis by year,  
14 correct?

15 A Yes.

16 Q And this table presents results for female  
17 promotions, correct?

18 A I believe that's the case, yes.

19 Q And for IC3 the female coefficient is negative in  
20 every year, correct?

21 A It's -- well the point estimate is negative, but  
22 none of them are statistically significant.

23 Q But the coefficient is negative each year, correct?

24 A Yes, that is correct.

25 Q For IC4 the female coefficient is negative in every

1 year, correct?

2 A Yes, that is correct.

3 Q And for IC4 the female coefficient is statistically  
4 significant in 2015, correct?

5 A That is correct.

6 Q I next want to ask you some questions about your  
7 word cluster analysis. You didn't integrate the results of  
8 your word cluster study into the methodology of your  
9 regressions, correct?

10 A That's correct, I did not create variables and  
11 insert them into any of the regression analyses I did.

12 Q And your study used word diagrams or word clusters,  
13 correct?

14 A Well, I created clusters, yes. They weren't word  
15 clusters so much as just clusters.

16 Q And you've testified earlier today that you  
17 conducted some studies to reach the choice of 24 clusters,  
18 correct?

19 A Yes.

20 Q And are these studies in your backup data?

21 A There's some references to them, I'm not sure if  
22 every single step is -- I did take a look at the backup  
23 materials and there are references to this process that I  
24 described earlier today. And I think Dr. Madden noted that  
25 in her rebuttal report. I don't know whether the charting

1 was present in the backup materials, I did not see it in the  
2 backup materials -- the charting relative to the cut-off  
3 points of five clusters, nine clusters, and so on.

4 Q Okay. So, the charting that you testified to  
5 earlier today, the backup data for that charting was not  
6 provided in your backup data?

7 A I'm not sure if it was in the backup material. I  
8 believe that the analyses and the procedures that are  
9 presented there would allow one to essentially reproduce what  
10 those materials would have been.

11 Q But the actual charting that you did, that data was  
12 not included in the backup data, correct?

13 A I don't think the charts were. I did not see them  
14 when I looked for them.

15 MR. SONG: Your Honor, we would like to move to  
16 exclude Dr. Saad's testimony about charting and coming to a  
17 decision on 24 clusters earlier today, because this data was  
18 not provided to us, that he's testifying about.

19 JUDGE CLARK: Ms. Connell?

20 MS. CONNELL: Well, he just testified that you  
21 could derive that data from the data that was provided, and  
22 he explained what he did. The cluster analysis was not a  
23 factor in his regression model. I mean he made clear that  
24 that's not the purpose of the analysis. That the purpose of  
25 this particular analysis was for a different reason, to study

1 differences in jobs. So, I don't think that there's been any  
2 prejudice to OFCCP and I think that there's no basis to  
3 exclude his testimony, that's what cross-examination is for.

4 JUDGE CLARK: Mr. Song?

5 MR. SONG: Well, Your Honor, you know, we would  
6 respectfully disagree. OFCCP believes that it's extremely  
7 prejudicial to us, because we had no idea what Dr. Saad was  
8 talking about today. We confirmed with our experts that  
9 there was no charting. In fact, the data -- the backup data  
10 that we have shows that Dr. Saad chose 24 for his cluster  
11 analysis, not -- he didn't arrive at it. But the charting  
12 information and that backup data would have been extremely  
13 helpful for us to know.

14 JUDGE CLARK: I understand that. Did you object?  
15 I don't recall an objection earlier today.

16 MR. SONG: Well, I didn't know that, Your Honor. I  
17 had to verify it with my expert to see was that backup data  
18 provided? I'm not a statistics expert, Your Honor.

19 JUDGE CLARK: I understand.

20 Anything further, Ms. Connell?

21 MS. CONNELL: Yes. Dr. Saad was deposed on these  
22 very issues. There was no objection raised at that point.  
23 They could have raised this, asked for the explanation there.  
24 The method is described in his backup materials and this is  
25 the first time OFCCP has raised any issue. So, to the extent

1 they had concerns about it, I don't think they're  
2 well-founded, but I think at this stage in the process  
3 they're also waived. These concerns should have been raised  
4 long ago.

5 MR. SONG: Your Honor, may I be heard?

6 JUDGE CLARK: Mr. Song, yes.

7 MR. SONG: Yes, Your Honor. We -- before jumping  
8 to any conclusions, we needed to verify what he was talking  
9 about and whether it was in his backup data or whether it was  
10 not. We confirmed with our expert that it's not in the  
11 backup data, but I still had to ask Dr. Saad what are you  
12 talking about, what data is it and where is it? And he's  
13 clearly said that he has this data and he didn't include it.  
14 And our expert will testify, under oath right now, that you  
15 cannot replicate the data that he's talking about, this  
16 charting information that says that he actually did some kind  
17 of study to arrive at 24. The backup data that we have only  
18 says that he chose 24 clusters.

19 JUDGE CLARK: Anything further, Ms. Connell?

20 MS. CONNELL: Only that they've had the backup data  
21 for months. They had deposed him on this.

22 MR. SONG: We didn't have all of it.

23 JUDGE CLARK: Anything further, Ms. Connell?

24 MS. CONNELL: No.

25 JUDGE CLARK: Mr. Song, anything further?

1 MR. SONG: No, Your Honor.

2 JUDGE CLARK: Okay. The request to strike is  
3 denied at this time.

4 Ask another question.

5 BY MR. SONG:

6 Q You eliminated some high frequency words in your  
7 clusters, correct?

8 A Well, the algorithm does a variety of things, one  
9 of which is high frequency words, words that are extremely  
10 common are often removed. But the analysis actually removes  
11 them for you. There's no -- I don't make the decisions to  
12 what words are removed or retained, the algorithm does that.

13 Q Okay. So, you didn't choose any specific words to  
14 eliminate from your word cluster analysis?

15 A Well, there are some words that are called "stop  
16 words," such as "A," "The," "I," "Me," words of that sort,  
17 and there are standard lists of these words, and they are  
18 programmed in. In the backup data I provided it does  
19 indicate the stop words or the source for the stop words that  
20 are eliminated. Those words are typically eliminated in  
21 these sorts of high dimension text data exercises.

22 Q Okay. But did you choose to eliminate those stop  
23 words?

24 A I don't choose -- I used a list of stop words that  
25 is a standard list, it is excluded by these algorithms when

1 they are implemented. So, you don't choose the words. Now,  
2 some individuals might choose specific words to eliminate,  
3 but I did not. I relied upon a list of stop words that is  
4 present in the R Software.

5 Q And you didn't eliminate words from the frequency  
6 check, which have no connection to skills or qualifications,  
7 correct?

8 A I eliminated no words at all, that's the whole  
9 point of what I did. I don't want to make decisions about  
10 which words count and which words don't count, not being a  
11 software expert. There are words and syllables and acronyms  
12 in that material that to somebody who knows software and  
13 hardware would mean something. So, I cannot make a decision  
14 to eliminate any words, so I did not. I allowed the program  
15 to determine the relative frequency with which these words  
16 occur, how they fall out relative to different requisitions  
17 across all of the information that was processed by the  
18 program, which is the standard way the cluster analysis is  
19 done.

20 Q So, the program would also -- strike that. So, the  
21 program wouldn't know which words were relevant to your study  
22 or your analysis, correct?

23 MS. CONNELL: Objection, lacks foundation.

24 JUDGE CLARK: Overruled.

25 THE WITNESS: That's not the point of it. It

1 doesn't determine relevance in any particular sense. It  
2 determines, simply -- it generates subsets that are more  
3 homogeneous within the subset than they are across the  
4 subsets. So, that is all that the algorithm does and it does  
5 so in a neutral manner, it does not have any -- there's no  
6 decision making by the analyst in how the algorithm selects  
7 words and groups them to create the clusters. That's the  
8 whole point of it.

9 Q So, words that have no connection to skills or  
10 qualifications could be included in your study then, correct?

11 A It's possible there are certain words. They're  
12 going to be common words that may occur in every single  
13 requisition, having nothing to do with skill. Typically,  
14 those words would be relegated to the background, they will  
15 not figure prominently because they're far too common and  
16 appear in all requisitions and, therefore, have no particular  
17 importance. Other words or phrases that, let's say, are  
18 unique to a particular subset of requisitions, would be found  
19 by the algorithm and the algorithm would identify them. But  
20 it would do so in a straightforward mathematical manner, not  
21 through any judgment applied by the analyst.

22 Q So, words such as "knowledge," were not excluded,  
23 correct?

24 A No, that would not be excluded. And no words were  
25 excluded other than the stop words, because that would be a

1 judgment of the analyst and that's why they were not  
2 excluded.

3 Q So, the algorithm also included words like "Oracle"  
4 and "Development," correct?

5 A Yes.

6 MS. CONNELL: Objection, asked and answered.

7 JUDGE CLARK: Overruled.

8 THE WITNESS: Yes, they would, but since a word  
9 like "Oracle" would appear in every single requisition, it  
10 would be relegated to the background, you would never see it  
11 being meaningful at all in the cluster analysis.

12 MR. SONG: Can we turn to --

13 JUDGE CLARK: So, I just -- it's 5:15 o'clock p.m.,  
14 was there an understanding between the parties about how long  
15 Dr. Saad would go today and whether he'd come back in the  
16 morning?

17 MR. SONG: No, Your Honor, but we had reserved four  
18 hours or requested four hours for cross-examination.

19 JUDGE CLARK: And you intend to use that time?

20 MR. SONG: Yes, Your Honor.

21 MS. CONNELL: And we would object to four hours. I  
22 don't think that my direct was four hours. I don't see any  
23 need to cross-examine Dr. Saad for four hours.

24 JUDGE CLARK: So, what was the agreement in terms  
25 of how much time would be today, did you guys discuss total

1 time?

2 MS. CONNELL: We gave our estimate. OFCCP did not  
3 give us an estimate.

4 JUDGE CLARK: Okay. From the documents that I had  
5 before, they had estimated 240 minutes, from the documents I  
6 had before. So, was there some reason why, Mr. Song, you  
7 didn't tell them your estimate of the total time for  
8 cross-examination, as I requested last week when I asked you  
9 to talk about total witness time?

10 MR. SONG: We did, Your Honor.

11 JUDGE CLARK: Oh, okay.

12 MS. CONNELL: No.

13 JUDGE CLARK: Ms. Connell said she didn't get it  
14 from you.

15 MS. CONNELL: No.

16 MR. SONG: Well, it wasn't me directly, but it was  
17 Laura Bremer, who is our lead counsel.

18 MS. CONNELL: No, there was no estimate on cross  
19 provided.

20 JUDGE CLARK: Okay. So, how late do we intend to  
21 go today to finish him or were we going to break and have him  
22 come back in the morning? What was your intention, Mr. Song?

23 MR. SONG: well, my intention was that we would,  
24 you know, we would have been done by 5:30 o'clock p.m. I  
25 didn't expect it to go this long today, though, Your Honor.

1           JUDGE CLARK: Okay. Well, we'll push forward for  
2 awhile. Ask another question.

3           MR. SONG: Thank you, Your Honor.

4 BY MR. SONG:

5           Q     Dr. Saad, in your deposition you indicated that if  
6 you exceed the maximum number of variables in a model, the  
7 computer program will give you warnings, correct?

8           A     Yes.

9           Q     And you used data analysis software to analyze Dr.  
10 Madden's study, correct?

11          A     Data analysis software -- I'm not sure what you  
12 mean. I used software, yeah, that's correct.

13          Q     And you used a computer software language named SAS  
14 or S-A-S, in most of your regression analysis, correct?

15          A     That's correct.

16          Q     In particular, you used SAS to estimate the  
17 regressions that went into your original and rebuttal  
18 reports, correct?

19          A     Yes.

20          Q     You produced backup data as part of your report,  
21 correct?

22          A     Correct, I did.

23          Q     And you're familiar with your backup data, correct?

24          A     Yes.

25          Q     And in your deposition you also indicated that SAS

1 would give you warnings if you should not put certain  
2 information in your model, correct?

3 A Correct.

4 Q And you produced backup with the output of those  
5 regressions, correct?

6 A Yes.

7 Q And your backup data shows that SAS tried to warn  
8 you about the variables you used in your regressions,  
9 correct?

10 A You should refer me to something specific.

11 Q I will. I'm just getting to that. And if you  
12 exceed the maximum number of variables in a model, SAS will  
13 warn you, correct?

14 A Well, SAS won't run. It will not -- you cannot run  
15 a regression if you exceed some maximum number of variables.  
16 I'm not quite sure how you mean that, but if you have,  
17 quote/unquote, "too many variables," the model simply won't  
18 run at all.

19 Q Okay. Do you remember testifying at your  
20 deposition that if you exceed the maximum number of variables  
21 in a model, SAS will warn you?

22 A SAS won't work at all. You don't get a warning,  
23 you get notice that this model will not run if you exceed the  
24 maximum number of variables, which means exceeding the number  
25 of degrees of freedom with your variables.

1           Q     Okay. We're going to look at page 151 of your  
2 deposition.

3           JUDGE CLARK: So, it's Plaintiff's 7, page 151.

4           MR. SONG: Yes, Your Honor.

5 BY MR. SONG:

6           Q     And the question is:

7           "Question: And is there a maximum?

8           "Answer: That would depend on the

9           circumstances, but I guess from some

10          theoretical perspective there's no

11          maximum, but from a practical perspective

12          there's going to be a maximum in every

13          circumstance.

14          "Question: And what would happen if you

15          exceeded the maximum?"

16          MR. SONG: Page 152, please?

17          You responded:

18          "Answer: Well, for most computer programs that

19          one uses to study phenomena, you will

20          receive warnings. There are times when,

21          in fact, if you have too many variables

22          in one type of a context, your model

23          won't run at all."

24 BY MR. SONG:

25          Q     Is that correct?

1           A     I think that's what I just said a moment ago.

2           Q     Okay. Well, you didn't mention the "warnings"  
3 part. But anyway, I'd like to turn your attention to Exhibit  
4 P-9.

5           MS. CONNELL: Can you make it larger, so we can  
6 read it, please?

7           MR. SONG: Yeah, can you make that larger?

8 BY MR. SONG:

9           Q     Can you see that now, Dr. Saad?

10          A     Yes, I can.

11          Q     Okay. And these are the outputs of your regression  
12 results, correct?

13          A     It's just one little slice of output related to one  
14 analysis.

15          Q     But it's the first page of that output, correct?

16          A     I'm not sure if it's the first page or not, but  
17 it's one portion of a particular analysis.

18          Q     Okay.

19          MR. SONG: Can we turn to the next page, please?

20 BY MR. SONG:

21          Q     And your output results, they include the parameter  
22 estimates and standard deviations that you report in your  
23 original report, correct?

24          A     Yes. But am I supposed to be seeing something on  
25 the screen?

1 Q I think it's coming up. I apologize. There we go.

2 A Okay. Yes.

3 Q So, here's just an example, at page 2 I think the  
4 entire backup data is something like 50 pages, so I don't  
5 know if you need to see the entire document or not, but I can  
6 show you --

7 JUDGE CLARK: What's your question for him about  
8 this document?

9 BY MR. SONG:

10 Q Oh. There's a -- do you see the warning at the end  
11 of the regression? We'll have to go -- I'll scroll to the ed  
12 of the document, please.

13 JUDGE CLARK: To the end of this page or the whole  
14 document?

15 MR. SONG: The whole document, Your Honor. Sorry.

16 Okay. And then can you highlight the note at the  
17 very end, please?

18 BY MR. SONG:

19 Q Do you see the warning at the end of your  
20 regression, Dr. Saad?

21 A Yes, I do.

22 Q Okay. And have you seen this warning before?

23 A On practically every GLM estimate that I run, I see  
24 this.

25 Q Okay. And so you did know that this was at the end

1 of your regression results for this output, correct?

2 A Yes. But this actually doesn't mean anything is  
3 wrong. You have to know what that means.

4 Q Okay. Well, maybe you can help us understand. Can  
5 you tell me what a "generalized inverse" is?

6 A Yes. In conducting a "Linear Least Squares,"  
7 analyses, as it's called, you have to what is called "invert  
8 a matrix." If you remember back to linear algebra, inverting  
9 a matrix is a difficult task. Well, it's particularly  
10 difficult in complex regression analyses. So, there are  
11 particular types of algorithms that are used, that are  
12 different depending on the regression procedure you are  
13 running. This happens to be a procedures called: "Proc GLM,"  
14 in SAS. Now, Proc GLM, the way it runs is it creates what  
15 are called "indicator variables." All of the variables that  
16 you see, if you were to go back and look at the regression  
17 output, ever set of indicator variables -- for example,  
18 organization name, job title and so on -- those variables are  
19 created in the GLM process. Now, typically, when you are  
20 running an analysis with a series of indicator variables, you  
21 have to physically drop one in order for the other  
22 coefficients to be estimated correctly. GLM does not drop  
23 any, what GLM does, instead, is leave them all in, create the  
24 inverse to the matrix in order to estimate the parameters,  
25 and then tells you -- look, depending on which one of these

1 variables I delete or drop, the coefficient estimates on all  
2 of the other ones will be different. So, this is just what  
3 it says, terms whose estimates are followed by the letter B  
4 are not uniquely estimable.

5 Q And what does the "B" stand for?

6 A The "B" is the indicator. If you look at the  
7 estimate, if you could take this highlight off and look at  
8 the actual output for a moment, you'll see it. So, if we can  
9 highlight and enlarge this upper portion, there's a little  
10 section there that will work for this explanation. You can  
11 see the letter "B." You see the column that says:  
12 "Estimate," under that are numbers and then there's a letter  
13 "B" next to each one of those. What Proc GLM tells -- and  
14 there's a user note in the SAS materials that explains how  
15 this works -- if I leave out, arbitrarily, any one of these  
16 organization names, all the other coefficients are estimated  
17 in reference to that that is left out. Now, if I change the  
18 organization name that has been left out, the estimates are  
19 all rerun and they will all be different numbers. Now, their  
20 relationship to one another will be identical, but they will  
21 all be different numbers. So, they're not uniquely  
22 estimatable in GLM.

23 Now, you can run Proc Reg in SAS, if you'd like,  
24 and in Proc Reg you have to create all of these indicator  
25 variables which is very burdensome, which is why people use

1 GLM. But in Proc Reg you actually have to leave out an  
2 indicator variable for each group of indicator variables.  
3 And most of the variables, in all of these analyses, mine and  
4 Dr. Madden's, many of them are indicator variables. So,  
5 that's all this means. It's not a warning that something is  
6 wrong, it's simply telling you don't interpret, specifically,  
7 what those coefficient estimates are, because they're with  
8 reference to a particular base. And if that base is  
9 different, those coefficients are different.

10 Q Doesn't the "B" stand for bias?

11 A No, it doesn't.

12 Q And if the estimate is not uniquely estimable then  
13 that means that it could be -- there are other options or it  
14 could be a different estimate, correct?

15 A If a different base is used by Proc GLM, yes. But  
16 the relationship between the coefficient estimates is  
17 identical, it's just that all the values of them are off, or  
18 different by the amount indicated by use of a different base.

19 Q And what are the org name dummy variables?

20 A That's what those are. I'm calling them indicator  
21 variables, but they are dummy variables.

22 Q They're dummy variables?

23 A They're referred to both ways by econometricians.

24 Q Regarding requisitions, are you aware that Oracle  
25 uses recruiters to find applicants for jobs?

1 MS. CONNELL: Objection, lacks foundation.

2 JUDGE CLARK: Overruled.

3 THE WITNESS: I've heard reference to it, but I'm  
4 not specifically aware of this issue that you've described.

5 JUDGE CLARK: Counsel, do you have a question?

6 MR. SONG: I think I just have one last question,  
7 Your Honor.

8 BY MR. SONG:

9 Q Om the "Conclusions" page of your demonstrative  
10 that you used this morning, and this afternoon, the second  
11 bullet point mentions:

12 "No evidence of bias in the process by which job  
13 applicants are hired into the positions  
14 they apply for, both career level and  
15 organization."

16 And I believe you testified that there was a study  
17 regarding organization, is that correct?

18 A Can you -- well, I can look at my copy here. Which  
19 page are you referring to, the last page?

20 Q The last page, I think it's slide 57?

21 A Okay. Yes. What was the question, again?

22 Q I believe you testified earlier today that there  
23 was a study on organization that you referenced when you were  
24 discussing this bullet point?

25 A Yes. In my rebuttal report I report on the

1 analysis of looking at whether or not individuals receive the  
2 organization to which they applied, or ended up in the  
3 organization to which they applied.

4 Q Okay. So, you were just talking about the study in  
5 your rebuttal report?

6 A Correct.

7 Q There's not a separate study on organization?

8 A That's correct.

9 Q Okay. And did this study use word diagrams or word  
10 clusters?

11 A No, it did not.

12 Q And your -- I'm sorry -- I had another question  
13 about requisitions. Your requisition study did not use org  
14 or Cost Center, correct?

15 A Sorry, which requisition study?

16 Q When you said you analyzed requisitions regarding  
17 initial placement assignments, job placement assignments?

18 A Did it use organization name -- no, it did not.

19 Q Can you let us know where, in your rebuttal report,  
20 that organization study is, which pages or paragraphs?

21 A It's summarized on page 62, paragraph 75, and  
22 several paragraphs thereafter, ending with, I guess,  
23 paragraph 79.

24 Q Thank you.

25 MR. SONG: No further questions, Your Honor.

1 JUDGE CLARK: Okay. Thank you, Mr. Song.

2 Anything further, Ms. Connell?

3 MS. CONNELL: Yes, I have just a few questions on  
4 redirect.

5 JUDGE CLARK: Go ahead.

6 REDIRECT EXAMINATION

7 BY MS. CONNELL:

8 Q Dr. Saad, you were asked about your work in the  
9 Jewett case, do you recall those questions?

10 A Yes.

11 Q And just to reiterate, Jewett is a civil class  
12 action case, correct?

13 A That's correct.

14 Q Okay. And is the -- I believe you testified that  
15 in that case you were responding to a report by Dr. Newmark?

16 A That's correct.

17 Q Is Dr. Newmark the plaintiff's expert in that case?

18 A Yes, he is.

19 Q And is the report to which you were responding a  
20 report in support of plaintiff's motion for class  
21 certification?

22 A That is my understanding.

23 Q And as you testified, the Jewett case, the stage of  
24 the case is the class certification stage, correct?

25 A That's my understanding.

1 Q so, the report to which you were responding was not  
2 a report on the ultimate merits of the allegations in the  
3 Jewett case, is that correct?

4 A That's correct.

5 Q And there's been no decision on class certification  
6 in the Jewett case, correct?

7 A That's correct.

8 Q Nor has there been any decision on the merits, is  
9 that correct?

10 A That's correct.

11 Q You were also asked some questions about your  
12 billings in both this case and in the Jewett case, do you  
13 recall that line of questioning?

14 A Yes, I do.

15 Q Your billings in both cases are based on the number  
16 of hours worked, correct?

17 A Yes, that's correct.

18 Q Why did you spend the number of hours that you did  
19 across those two cases?

20 A Well, there were a huge amount of time required to  
21 process the data and then to analyze the data. And I  
22 referred earlier in my testimony, I believe, to the work  
23 associated with the patent database, that was a huge  
24 database, very messy, very difficult to work with. It took,  
25 I think it was months of time to wrangle that database into

1 shape one could do anything with. And that's just one  
2 example of the extent of the work that has to be done in a  
3 case like this. Not to mention working with the voluminous  
4 data that was produced during discovery to me and my team.

5 Q So, is it fair to say that the two cases are  
6 complex cases?

7 A Yes, they're very complex.

8 Q With a lot of data to review and analyze?

9 A Yes.

10 Q You were also asked some questions about your Ph.D.  
11 dissertation, do you recall that line of questioning?

12 A Yes, I do.

13 Q And there was questioning around the discussion in  
14 that dissertation of the Human Capital Theory, do you recall  
15 that?

16 A Yes.

17 Q Is the version of the Human Capital Theory  
18 discussed in your dissertation, the same version of the Human  
19 Capital Theory that Dr. Madden applied in this case?

20 A Not really. I mean to the extent that there are  
21 skills and capabilities of individuals that are required in  
22 various ways, human capital really refers to the stock of  
23 knowledge and capabilities imbedded in individuals, so that's  
24 why it's called human capital. And there are many ways to  
25 study it and many contexts in which it occurs, and the

1 historical context is quite different, especially this was  
2 19th century Philadelphia, specifically. And the conceptual  
3 approach, in terms of trying to understand how the human  
4 capital manifests itself in a labor market may be similar,  
5 but the specifics are quite different.

6 Q You were also asked questions about -- was it a  
7 study that you did involving Vietnam veterans, do you recall  
8 that line of questioning?

9 A Yes.

10 Q And there was a number of questions regarding  
11 whether endogenous variables were used, do you recall that?

12 A Yes.

13 Q That particular study did not involve a particular  
14 company, correct?

15 A That's correct.

16 Q I believe you testified that it was an economy-wide  
17 study, is that correct?

18 A A nationwide study, yes.

19 Q So, does the concept of endogenous variables exist  
20 in an economy-wide study, in the same way that it exists in a  
21 case like this?

22 A Not in the same way at all.

23 Q You were also asked some questions regarding  
24 statistical significance, do you recall that testimony?

25 A Yes.

1 Q And whether a model results in statistically  
2 significance, does that say anything about whether the  
3 factors used in the model are correct?

4 A No, it doesn't. If a particular variable is  
5 statistically significant in a model, that model may or may  
6 not be a correct model, whatever the phenomenon is you're  
7 studying.

8 Q And does whether a model produces results that are  
9 statistically significant say anything about whether the  
10 model is constructed in a correct or meaningful way?

11 A No.

12 Q You were also asked some questions about Peter  
13 Kennedy and a book he wrote entitled: "A Guide to  
14 Econometrics," do you recall those questions?

15 A Yes.

16 Q Does anything that Dr. Kennedy said in that book,  
17 regarding R squared, change your opinions in this case  
18 regarding the importance of the R squared value here?

19 A No.

20 Q Why not?

21 A Because what Dr. Kennedy is referring to is that --  
22 and there's a broader context here -- we got some of that  
23 context in that discussion during my cross-examination -- the  
24 context is there was a time when there was, perhaps, a little  
25 too much focus on R squared at the expense of looking at the

1 coefficients that you were getting in the analyses you were  
2 conducting, relative to the theory or whatever phenomenon you  
3 were studying. So, to the extent that what Kennedy is  
4 warning is don't look at R squared at the expense of  
5 coefficients, but a similar warning is don't look at  
6 coefficient values at the expense of looking at other things,  
7 such as the fit of the model and R squared of the model.

8           So, in general terms, what he's saying makes  
9 perfect sense. He got a little colorful in his language and  
10 how he described whether or not you should pay attention to R  
11 squared, but I think the message is that looking at R squared  
12 for R squared's sake is not an appropriate thing to do  
13 without looking at other factors, as well.

14           Q     And in this case have you looked at R squared for R  
15 squared sake?

16           A     No.

17           Q     You were asked some questions about the data that  
18 you were provided in connection with this case, do you recall  
19 those questions?

20           A     Yes.

21           Q     Is it true that the data that you considered in  
22 producing your reports in this case, is listed in the reports  
23 that you produced in this case?

24           A     Yes.

25           Q     And at any point were you ever denied any data that

1 you requested, in order to generate those reports?

2 A No.

3 Q You were also asked some questions about instances  
4 when there was a single employee in an organization, do you  
5 recall that line of questioning?

6 A Yes.

7 Q Okay. When you're talking about a single employee  
8 in an organization, that concept applies only to the employee  
9 population that you have in this case, meaning employees who  
10 worked at Redwood Shores in the three job functions at issue  
11 during the time period at issue in this case, correct?

12 A That's correct.

13 Q And you don't know if there are other employees,  
14 outside of Redwood Shores, and outside of those three job  
15 functions, who are also in that organization, correct?

16 A That is correct.

17 Q You were also asked some questions regarding the  
18 criticisms you made of Medicare wages as used by OFCCP in the  
19 Second Amended Complaint, do you recall those questions?

20 A Yes, I do.

21 Q And you were specifically asked some question  
22 regarding 401K contributions, do you recall those questions?

23 A Yes.

24 Q Was the issue of 401K contributions the only basis  
25 for your opinion that Medicare wages are an incorrect measure

1 of total compensation?

2 A No, that was actually just a very minor aspect of  
3 the issue.

4 Q You anticipated my next question. Was that even  
5 the primary basis for your critique of OFCCP's use of  
6 Medicare wages?

7 A No, it was not.

8 Q And you've already testified on your direct about  
9 your concerns with the use of Medicare wages, correct?

10 A Yes.

11 Q Just to make sure that we're clear on the notes  
12 from your backup files that we reviewed, regarding reference  
13 to the letter "B," do you recall that line of questioning?

14 A Yes.

15 Q Is there anything in those notes regarding that --  
16 that we reviewed -- that in any way impact the reliability of  
17 the analyses that you ran?

18 A No. In fact, if you were to run the same -- run a  
19 regression with just five indicator variables, and a couple  
20 of other variables, you're going to get those same warnings.

21 It has nothing to do with how many variables are in your  
22 model. It has to do with how this particular software  
23 program estimates the model, this program called "Proc GLM,"  
24 in the SAS -- used in the SAS package.

25 Q And so seeing that particular note in your backup

1 files, there's no reason for concern when you see that note,  
2 correct?

3 A No. It's present in virtually all the work that  
4 our firm does.

5 MS. CONNELL: All right. No further questions.

6 JUDGE CLARK: Mr. Song, anything further?

7 MR. SONG: No, Your Honor.

8 JUDGE CLARK: Dr. Saad, thank you so much for your  
9 time today. You are free to go. You are excused. Thank you  
10 for being here.

11 THE WITNESS: Thank you, appreciate that.

12 (Witness excused.)

13 JUDGE CLARK: Okay. It's 5:40 o'clock p.m., we're  
14 going to call it a day, obviously.

15 Anything further for the record today, Mr. Song?

16 MR. SONG: No, Your Honor.

17 JUDGE CLARK: Ms. Connell?

18 MS. CONNELL: No, Your Honor.

19 JUDGE CLARK: Then we will be adjourned until 9:00  
20 o'clock a.m., tomorrow morning.

21 We're off the record.

22 (Whereupon, the proceedings adjourned at 5:39  
23 o'clock p.m.)

24 ---o0o---

25

REPORTER'S CERTIFICATE

TITLE: Federal Contract Compliance Programs v. Oracle

America, Inc.

CASE NUMBER: 2017-OFC-00006

OWCP NUMBER: N/A

DATE: December 16, 2019

LOCATION: San Francisco, CA

This is to certify that the attached proceedings before the United States Department of Labor, were held according to the record and that this is the original, complete, true and accurate transcript which has been compared to the reporting or recording accomplished at the hearing.

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DATE