SUPREME COURT

STATE OF OHIO

- - -

REVEREND WILLIAM   :
MOSS, ET AL.,   :
                     :
     CONTESTERS,   :
                     :
vs.   : CASE NO. 04-2088
                     :
PRESIDENT GEORGE W. :
BUSH, ET AL.,   :
                     : Original Action to
     CONTESTEES.   Contest Election

- - -

        Deposition of RON BAIMAN, PH.D., a Witness

herein, called by the Contesters for direct

examination under the applicable Ohio Rules of Civil

Procedure, taken before Sylvia A. Fraley, a

Registered Diplomate Reporter, Certified Realtime

Reporter and Notary Public in and for the State of

Ohio, pursuant to notice at the Columbus Athletic

Club, 136 East Broad Street, 2nd Floor, Columbus,

Ohio 43215 commencing on Friday, December 31, 2004

at 12:00 p.m.

- - -

1   DEPOSITION OF RON BAIMAN, PH.D.

2   APPEARANCES

3   - - -

4   PETER PECKARSKY, ESQUIRE
           1615 "L" STREET N.W.
5   Washington, D.C. 20036
           Columbus Telephone (614) 481-8416
6
               On behalf of the Contesters.
7

8   ALSO PRESENT:

9   DR. ROBERT FITRAKIS

10   - - -

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1            DEPOSITION OF RON BAIMAN, PH.D.

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4    RON BAIMAN, PH.D.

5       DIRECT EXAMINATION BY BY MR. PECKARSKY:      5

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1   DEPOSITION OF RON BAIMAN, PH.D.

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1   - - -

2   A NINE-PAGE DOCUMENT ENTITLED,

3   "CURRICULUM VITA FOR RON BAIMAN,"

4   WAS MARKED AS BAIMAN EXHIBIT 1.

5   - - -

6   A 14-PAGE DOCUMENT ENTITLED, "THE

7   2004 PRESIDENTIAL ELECTION: WHO

8   WON THE POPULAR VOTE? AN

9   EXAMINATION OF THE COMPARATIVE

10   VALIDITY OF EXIT POLL AND VOTE

11   COUNT DATA," WAS MARKED AS BAIMAN

12   EXHIBIT 2.

13   - - -

14   A ONE-PAGE DOCUMENT ENTITLED, "DO

15   PARTY PROPORTIONS ON VOTER

16   REGISTRATION ROLLS SERVE AS GOOD

17   ESTIMATES FOR PARTY PROPORTIONS IN

18   ACTUAL TURNOUT?" WAS MARKED AS

19   BAIMAN EXHIBIT 3.

20   - - -

21   RON BAIMAN, PH.D.

22   being by me first duly sworn, as hereinafter certified,

23   deposes and says as follows:

24   DIRECT EXAMINATION

25   BY MR. PECKARSKY:

1   Q.   What is your name?

2   A.   Ron Baiman.

3   Q.   And what is your date of birth?

4   A.   October 7, 1951.

5   Q.   Are you currently employed?

6   A.   I am currently employed at the Institute of

7 Government and Public Affairs at the University of

8 Illinois in Chicago.

9   Q.   I'm handing you a document which has been

10 premarked as Baiman Exhibit 1, December 31, '04. It's

11 a nine-page document titled, "Curriculum Vita for Ron

12 Baiman." Could you please take a look at that document

13 for a second, let us know whether you've ever seen it

14 before?

15   A.   Yes. This is my curriculum vita.

16   Q.   Did you prepare it?

17   A.   Yes, I did.

18   Q.   Does that accurately set forth personal

19 information about you, your education, experience and

20 professional awards and scholarly publications?

21   A.   Yes, it does.

22   Q.   What experience do you have in the field of

23 statistics?

24   A.   I have about 16 years of experience teaching

25 statistics to both graduate and undergraduate students;

1 working in the private sector in AT&T, and the public

2 sector, New York State Department of Economic

3 Development and at the University of Illinois, Chicago;

4 and in academia, as I mentioned, teaching at various

5 colleges.

6   Q.   Okay. With respect to the experience section

7 of your resume, in which of those positions, I guess

8 from September of '04 back to June of '84, were you

9 either teaching statistics or using statistical tools

10 on a regular basis in your work?

11   A.   I was teaching statistical methods in the

12 math methods and economics class at the New School for

13 Social Research.

14   Q.   As you identify each of these, could you just

15 indicate the time period that's involved?

16   A.   Sure. That was from 9/83 to 6/84.

17   Q.   Is that September of '83 to June of 1984?

18   A.   Yes, September of 1983 to June of 1984.

19   From September of '84 to June of '86, I was

20 teaching statistics courses at the University of

21 Massachusetts in Lowell.

22   From September of '85 to December of 1986, I

23 was teaching quantitative methods and statistics

24 classes at the School of Graduate Continuing Education

25 in Framingham State College, Framingham, Mass.

1   From October of '87 to December of '91, I was

2   using statistics on a regular basis at AT&T as part of

3   my responsibilities for price evaluation.

4   From December of '91 to January of '93, I was

5   again using it at a different job with AT&T as a

6   database marketing -- in database marketing services.

7   And then from January of '94 to June of '94,

8   I taught statistical methods to graduate students at

9   the New School for Social Research.

10   From August of '91 to September of '94, I

11 have been using -- I was using statistical analysis on

12 a regular basis at the Center for Urban Economic

13 Development at the University of Illinois at Chicago.

14   And then -- and I guess -- and then, of

15 course, in my current job, I am using it, as well, from

16 September of 2004.

17   Q.   Okay. And is your present position as a

18 Visiting Senior Economic Research Specialist at the

19 Department of Economics at the University of Illinois,

20 Chicago?

21   A.   This is -- I have -- this is until December

22 of '04, and from December 16th of 2004, I have been

23 working at the Institute of Government and Public

24 Affairs. I just moved positions within the university.

25   Q.   So is it correct that you are still with the

1 University of Illinois at Chicago?

2   A.   Yes, yes.

3   Q.   Okay. When did you receive your Ph.D. in

4 Economics?

5   A.   I received my Ph.D. in 1992.

6   Q.   And who awarded that degree, or what school

7 awarded that degree?

8   A.   It's the -- it's currently called the New

9 School University. At the time, it was called the New

10 School for Social Research in New York City.

11   Q.   Is that in the State of New York?

12   A.   Yes.

13   Q.   Referring to Page 3 of your Curriculum Vita,

14 have you taught courses on statistical and research

15 methods?

16   A.   Yes.

17   Q.   All right. At what level did you teach the

18 courses in statistical and research methods, that is,

19 what level in the academic world?

20   A.   That was a course to graduate students in

21 urban policy -- urban planning, public policy.

22   Q.   Okay. What does it mean in the academic

23 world when someone refers to a paper as being

24 "refereed"?

25   A.   "Refereed" papers are papers that are

1 submitted to scholarly journals or academic journals

2 which have editors who are scholars in the field who --

3 usually, three referees will judge a paper and decide

4 whether it's worthy of publication in a journal.

5   Q.   And with respect to the six articles listed

6 under, "Refereed Papers, Reviews, and Chapters in

7 Books" in your Curriculum Vita, were all of those

8 articles or items subject to the refereeing process?

9   A.   Yes, they were.

10   Q.   And is it correct that they had to pass the

11 refereeing process before they were published?

12   A.   Yes, it is.

13   Q.   In your opinion, do you have the experience,

14 training, background and education to serve as an

15 expert in the field of statistics?

16   A.   Yes, I do. For this -- I mean, for applied

17 statistics of the kind that we are talking about here,

18 yes.

19   Q.   Okay. I just want to know: In your view, do

20 you have the experience, training and background to

21 serve as an expert in the field of statistics as

22 applied to analyzing exit poll results and actual

23 results from the 2004 Presidential election and other

24 elections?

25   A.   Yes, I do.

1   Q.   Did you have occasion to study the exit polls

2   which were taken in connection with the November 2,

3   2004 election in The United States and in the State of

4   Ohio?

5   A.   Yes, I did.

6   Q.   Did you have occasion to study the actual

7   results which have been reported with respect to the

8   national election for President and Vice President of

9   the United States and the results for the Presidential

10 and Vice Presidential election in the State of Ohio?

11   A.   Yes, I did.

12   Q.   Have you prepared an article setting forth

13 your current views as to the relationship between the

14 exit polls and the actual results from the November

15 2004 election?

16   A.   Yes, I have.

17   Q.   Okay. I am going to hand you a copy of a

18 14-page article, including an Appendix A and a Figure

19 1. Those would be included within the 14-page article

20 titled, "The 2004 Presidential Election: Who Won The

21 Popular Vote? An Examination of the Comparative

22 Validity of Exit Poll and Vote Count Date." It's dated

23 December 28, 2004, and the authors are listed as

24 Jonathan D. Simon, J.D., and Ron P. Baiman, Ph.D. Dr.

25 Baiman, have you ever seen that article before?

1   A.   Yes, I have.

2   Q.   Did you prepare the article?

3   A.   Yes, I did.

4   Q.   In preparing that article, what data did you

5   use?

6   A.   I used data that was from a screen printout

7   of CNN exit polls that was supplied to me by Jonathan

8   Simon.

9   Q.   And did you use any other data, for example,

10   the actual election results, in preparing your article?

11   A.   Yes. We also -- we compared that screen

12   printout to the actual election results and we tried to

13   get the most-current election results that we could

14   find, and I believe they are footnoted in the article.

15   I'm trying to find it.

16   These are from CNN, and we found there that

17   the actual vote was 48.1 percent for Kerry and 50.9

18   percent for Bush in the national popular vote.

19   Q.   Actually, those numbers were the actual

20   results; correct?

21   A.   Yes.

22   Q.   Okay.

23   A.   And, actually, I'm thinking here they may

24   not --

25   Q.   Drawing your attention to Chart 1 on Page

1   8 --

2   A.   Yes.

3   Q.   -- you'd indicated that the CNN data showed

4   48.1 percent for Kerry and 50.9 percent for Bush. Is

5   it the other way around? That is, there is a "National

6   Exit" poll line and a "Popular Vote Count" line?

7   A.   The CNN that's talked about in the paper is

8   the CNN posting, the exit poll posting, and that is of

9   the national exit poll results, and that shows 50.8

10 percent for Kerry and 48.2 percent for Bush.

11   Q.   And then when the popular vote count came in,

12 what was the result for Bush and Kerry?

13   A.   The popular vote count was 48.1 percent for

14 Kerry and 50.9 percent for Bush.

15   Q.   Before we go ahead with the article, are

16 there any typographical or other errors which have to

17 be corrected with respect to, for example, Footnote 15?

18   A.   Yes.

19   Q.   What is the correction which should be made,

20 if any, to Footnote 15?

21   A.   The Footnote 15 states that the time-stamped

22 screenshot was printed out by Simon at 1:29 a.m. It

23 should be 12:23 a.m., as can be seen in the attached

24 copy of that screenshot.

25   Q.   And does that 12:23 a.m. number also appear

1 in the text in the sentence to which Footnote 15

2 refers?

3   A.   Yes, it does.

4   Q.   Where on the -- I'm sorry.

5   Is it correct that that time appears

6 somewhere on the screenshot, which is Appendix A to the

7 article?

8   A.   Yes, it is correct. It's up in the upper

9 right-hand corner where it says, "Updated: 12:23 a.m."

10   Q.   Do you see the line that says, "Search for

11 Exit Polls" on Appendix A?

12   A.   Yes, I do.

13   Q.   Where is the time with respect to that line?

14   A.   It would be about three lines down and then

15 to the far right.

16   Q.   Okay. And that's just above the, sort of

17 block which has "Vote by Gender"; correct?

18   A.   Correct.

19   Q.   Okay. And is that how you know the time at

20 which this information was posted?

21   A.   Yes.

22   Q.   With respect to the sentence on the top of

23 Page 8, --

24   A.   Yes.

25   Q.   -- is there any correction which has to be

1 made there, or any clarification which has to be made

2 there?

3   A.   Yes.

4   The 5.4 percent in that sentence -- The

5 sentence says, "The differential between the two

6 counts, which were virtually mirror images of each

7 other, was 5.4 percent overall, or about 3.3 million

8 votes (see Chart 1)." And it's clear from the chart

9 that 5.4 percent refers to the change in the difference

10 between the Bush percent and the Kerry percent of the

11 vote, the total change. So it's going from a plus 2.7

12 percent -- I'm sorry -- from a minus 2.7 percent for

13 Bush to a plus 2.7 percent for Bush. So the total

14 shift was 5.4 percent.

15   The 3.3 million votes refers to the

16 difference in popular votes of the reported election

17 outcome. So, that 3.3 million refers to the plus 2.7

18 percent for Bush, not to the 5.4 percent shift.

19   Q.   So, is it correct, then, that 3.3 million

20 votes is approximately 2.7 percent of the total

21 national vote cast?

22   A.   Right.

23   Q.   Okay.

24   Drawing your attention to Page 10, the

25 section on, "Is Something Wrong With The Exit Poll

1 Results?" the fourth line there has a blank line -- or

2 a partially blank line. Was there supposed to be

3 anything there or was that just ...?

4   A.   No, that's just a return that should be

5 deleted there.

6   Q.   Okay.

7   MR. PECKARSKY: Let's go off the record a

8 second.

9   (Discussion off the record.)

10 BY MR. PECKARSKY:

11   Q.   Back on the record.

12   Drawing your attention to Footnote 23 on Page

13 9 of your article, which is Exhibit 2 to the

14 deposition, you have a reference there to a result

15 which is 4.7 standard deviations away from the exit

16 poll result. There is an indication that the odds

17 against its occurrence are enormous. How enormous are

18 those odds?

19   A.   They are very enormous. There is less than a

20 1-in-2-billion chance of that occurring. It's

21 2.9 billion, to be more precise. That's for a -- if we

22 assume a random sample. But even if we assume -- we

23 make the adjustment for cluster sampling, it's less

24 than 1 in 970,000.

25   Q.   Okay. So the odds were 1 in 970,000 that

1 Kerry's vote was going to be 48.1 -- the reported 48.1

2 percent or less; --

3   A. Right. Correct.

4   Q. -- correct?

5   Okay. You referred in your answer to

6 "cluster sampling." What is -- or "cluster sampling"

7 or "cluster correction." What is "cluster sampling"?

8   A. Exit-poll sampling is done by precinct, and

9 because voters in a given precinct often have

10 characteristics that are shared, that is, they may be

11 of a similar income group and they may have -- and they

12 may have similar -- more-similar political views than

13 randomly selected voters, adjustment is -- an

14 adjustment is made to take that into account, that this

15 is not a pure random sample.

16   The adjustment is to increase the standard

17 deviation by 30 percent. And this is based on research

18 that was done for the 1996 election and is an accepted

19 statistical practice in this kind of situation.

20   Q. Is that correction, or some discussion of

21 that correction, set forth in Footnote 22 of your

22 article?

23   A. Yes.

24   Q. Referring to Page 12, the Conclusion of the

25 article, there is a reference to "the national

1 mega-sample within its 1.1 percent margin of error."

2   Is that supposed to be "national mega-sample

3 with its 1.1 percent margin of error"?

4   A.   Yes.

5   Q.   And by that, you understand I'm just

6 referring to that portion of the sentence which I read;

7 correct?

8   A.   Correct.

9   Q.   Okay. Were the data sources you had both

10 with respect to the information on the exit polls and

11 the information on the national results and state

12 results the type of information upon which you would

13 rely in your work as an economist and statistician?

14   A.   Yes.

15   Q.   Did you find a difference between the exit

16 poll numbers -- And we may have discussed this already.

17 What was the difference between the exit poll numbers

18 for Bush and Kerry and the popular vote count for Bush

19 and Kerry?

20   A.   For the national exit poll --

21   Q.   Yeah, I'm sorry.

22   For the national exit poll, what was the

23 difference between Bush and Kerry's numbers for the

24 exit poll?

25   A.   For the exit poll, Kerry got 50.8 percent and

1 Bush got 48.2 percent. So, Kerry got 2.6 percent more

2 votes than Bush.

3   Q.   Okay. And when the popular vote count came

4 in, or according to the popular vote count as of the

5 time that this article was written, what was the

6 percentage for Bush and the percentage for Kerry?

7   A.   The percentage then was: Bush gets 50.9

8 percent and Kerry gets 48.1 percent; and Bush gets 2.8

9 percent more votes than Kerry.

10   Q.   What is the significance, if any, of the

11 difference between the Bush-Kerry outcome in the exit

12 poll and the Bush-Kerry outcome in the actual popular

13 vote count?

14   A.   Well, this is an enormous shift, from 2.6

15 percent in favor of Kerry to 2.8 percent in favor of

16 Bush. So, it's a swing of more than 100 percent in the

17 other direction. It's an enormous error, or actually,

18 it's an implausible kind of error, statistically

19 speaking.

20   Q.   Why is it implausible?

21   A.   Well, exit polls are very accurate samples of

22 actual voters and they normally have very small margins

23 of error; and particularly for this exit poll, which

24 had a very large sample of over 13,000 respondents, the

25 margin of error was very small. It was about 1.1

1 percent even after taking into account the cluster

2 sampling adjustment.

3   So, this result falls well outside of a 95

4 percent confidence interval for that exit poll. And as

5 I think we said, statistically, there is about 1 in --

6 1 in 900,000 -- less than a 1-in-900,000 chance of that

7 kind of error occurring because of sampling error or

8 statistical error.

9   Q.   All right. If the difference weren't due to

10 statistical error, what else could have caused that

11 difference?

12   A.   Well, this would have had to have been some

13 kind of error either in the exit polling or the popular

14 vote count.

15   The popular vote count could be in error

16 because of fraud and mistabulation or discriminatory --

17 Well, no, that -- that would -- Some kind of fraudulent

18 vote-counting would have to occur for the popular vote

19 count to be in error.

20   The exit poll, however, could be in error if

21 there were a biased sample. If, for some reason, the

22 pollsters sampled -- did not do a random sample, even a

23 random cluster sample, but rather, sampled people who

24 were more prone to vote for Kerry than for Bush.

25   The exit poll could also be off if there was

1 discriminatory voter suppression in the actual

2 election. So that if the election was not a free

3 election; if there were obstacles that, say, one

4 party -- people of one party preference faced greater

5 obstacles to voting than people of another party

6 preference, this would result in a discrepancy with the

7 exit polls.

8   Q. Going back to part of that answer, you

9 mentioned that the actual vote count could be off

10 because of some type of fraud in the count. Could a

11 mistake in the actual vote count also occur due to some

12 type of error or some type of mistake?

13   A. Sure.

14   Q. Okay. Now, going back to the -- I'll refer

15 to them as "methodological errors." There could have

16 been some type of problem in gathering the exit poll

17 data, and you also mentioned something about the

18 possibility of: If there were some type of

19 discrimination against people intending to vote one way

20 or the other, that also could have shifted the exit

21 polls.

22   Have any explanations been offered as to what

23 might have methodologically been wrong with the exit

24 polls?

25   A. Yes, there are two explanations that have

1 been offered: One hypothesis or explanation is that

2 the exit pollsters sampled too many female voters, who

3 would -- we know had a greater preference for Kerry;

4 and the other explanation -- These are the two major

5 explanations that have been put forward. -- is that the

6 Bush voters were more reluctant to fill out exit polls,

7 respond to the exit pollsters than the Kerry voters.

8   Q.   With respect to some error in how many men

9 and women were sampled or the ratio of men and women

10 sampled, did you address that issue in your article?

11   A.   Yes, we did.

12   Q.   Where did you address it?

13   A.   This is on Page 11.

14   Q.   And what was your analysis of that possible

15 explanation for a methodological error?

16   A.   We found this did not fit with the data.

17 When we re- --

18   The exit poll is done separately for male and

19 female voters, so that allows for recalibration of the

20 share of male and female voters. When we readjusted

21 the exit poll or reweighted it to reflect a normal

22 gender breakdown of 52 percent female, 48 percent male,

23 Bush's exit poll percentage increased by only 0.2

24 percent, to 48.4 percent, and Kerry's was reduced to

25 50.6 percent, which did not affect the overall outcome

1   and had -- it's a very small effect on the error

2   probability.

3   Q.   And if that adjustment were made, what were

4   the odds or percentage of the time, given the exit poll

5   results, that you would expect that Senator Kerry would

6   still have won the national election?

7   A.   The odds would be 96.9 percent probability

8   that Kerry would have been the winner of the popular

9   vote.

10   Q.   When I used the term, "national election,"

11   did you understand I was referring to the national

12   popular vote as opposed to the electoral college?

13   A.   Yes.

14   Q.   You said something in your answer about: Men

15   and women are done separately. Do you mean that the

16   responses from men and women are recorded separately or

17   that they are actually interviewed separately at the

18   exit polls?

19   A.   They are interviewed separately and recorded

20   separately.

21   Q.   They have two lines at these exit polls?

22   A.   No, no. The pollster will approach a man and

23   give them a form to fill out, a questionnaire, and

24   they'll approach a woman and give them a form to fill

25   out, and they will record whether they are a man or a

1 woman who is filling out the form.

2   Q.   And is it correct that the people running the

3 exit poll then will know what percentage of women voted

4 for Bush or Kerry and what percentage of men voted for

5 Bush or Kerry?

6   A.   Yes.

7   Q.   And then having that data and knowing what

8 percentage of the respondents are men and what

9 percentage of the respondents are women, you can then

10 calculate the total percent for Bush and the total

11 percent for Kerry; correct?

12   A.   Correct.

13   Q.   Does that fully explain your analysis of the

14 gender explanation for the possible methodological

15 error?

16   A.   Yes. We find that that explanation just will

17 not -- the recalibration of the male and female vote

18 does not change this very implausible outcome, the very

19 implausible error.

20   In fact, even if we recalibrate to 50 percent

21 male and 50 percent female, we find that Kerry would

22 have won 93.5 percent of the time -- with 93.5 percent

23 probability, Kerry would have won the popular vote.

24   Q.   Did you also analyze -- I think you referred

25 to it as the "Reluctant Bush Responder Hypothesis"?

1   A.   Yes, we did.

2   Q.   What did you do to conduct that analysis and

3   what were your results?

4   A.   We found that this also does not fit the

5   data. When we looked at the data for all 46 states for

6   which we have the unadjusted exit polls, we found that

7   there was a statistically highly significant error that

8   is outside of the 95 percent confidence interval for

9   one-tail, which would be 90 percent for two tails.

10 There was a very large statistical -- a very highly

11 significant statistical error in only four states out

12 of the 46 -- I'm sorry -- five states of the 46. Four

13 of them are battleground states. They were: Ohio,

14 Florida, Pennsylvania and New Hampshire; and only one

15 non-battleground state, and that was South Carolina.

16   That indicates that the error -- the very

17 large error was concentrated in the critical states, in

18 the battleground states, and this is inconsistent with

19 the notion that Bush voters were less-responsive to

20 pollsters. It's implausible that Bush voters would

21 have that behavior in just those particular states and

22 not in the other states.

23   So, the Reluctant Bush Responder Hypothesis

24 doesn't fit with the notion that there was an error in

25 favor -- enormous error in favor of Bush and that just

1 happened to occur in these most-critical states.

2   The other -- we also have data that looks at

3 registration by party. This is data --

4   Q. Before you get into that --

5   A. Yeah.

6   Q. -- could I ...?

7   A. Sure.

8   Q. Does that explain your analysis of the

9 Reluctant Bush Responder Hypothesis, or do you need to

10 go into some additional information to get into it, to

11 conclude your analysis there?

12   A. The crux of the explanation is that that kind

13 of systemic error does not fit with the data that shows

14 that the error was very targeted, it was very specific

15 to critical -- in fact, the most-critical-of-

16 the-critical swing states, and -- and hardly occurs at

17 all in the noncritical states.

18   Q. For that explanation to work, is it correct

19 that what would have had to have happened is that, for

20 some reason, Republicans in Ohio, Florida,

21 Pennsylvania, New Hampshire and South Carolina were

22 reluctant to speak to the exit pollsters, while

23 Republicans in all of the other, I think, 42 states for

24 which you have screenshots somehow were perfectly

25 willing to speak to the people taking the exit polls?

1   A.   Right.

2   41 states, yes.

3   Q.   I'm sorry.

4   A.   Yes.

5   Q.   Okay. And is it correct that you found no

6 evidence that Republicans in Ohio, Florida,

7 Pennsylvania, New Hampshire and South Carolina had this

8 reluctance and Republicans all over the rest of the

9 country were perfectly happy to speak to the people

10 connected with the exit polls?

11   A.   Correct. I see no evidence to back up that

12 kind of explanation.

13   In fact, given the amount of media attention

14 to the possibility of challenges at the polls -- in

15 Ohio, in particular -- it would seem even more

16 plausible to me that the Democrats would be reluctant

17 to respond to exit pollsters, rather than Republicans.

18   Q.   In your answer, you said something about

19 one-tail -- 95 percent confidence interval for one-tail

20 and 90 percent confidence interval for two-tail. Can

21 you explain the one-tail, two-tail reference, please?

22   A.   Sure. The confidence interval is based on

23 the possibility of error that could fall on either

24 side. That is, it could be a pro-Kerry error or

25 pro-Bush error. And this is shown, for example, in

1 Figure 1 in the paper. So that the standard five

2 percent error or 95 percent confidence interval is

3 based on a two-and-a-half percent error on either side

4 of the distribution.

5   Q.   By "distribution," do you mean the center --

6 the result of the poll, or the center result of the

7 poll?

8   A.   Centered around the -- the result of the

9 poll.

10   Q.   Okay.

11   A.   So, the -- the -- the one-tail, five percent

12 error would mean, here where -- All of those errors in

13 those four states were all in favor of Bush, which is

14 another statistical anomaly and kind of something

15 that's not credible for a -- for a random error,

16 extremely not credible, but -- and so when I was --

17 when we were looking at the states that were most in

18 error in favor of Bush, we're already assuming that the

19 error is going to be in Bush's favor and we're just

20 looking at the possibility of how far -- how much of an

21 error in Bush's favor is there.

22   And so the five percent, one-tail confidence

23 interval would say that there is a -- that there is

24 less than a five percent chance that you can get that

25 much error in favor of Bush.

1   So, that's as if we're -- in the Figure 1,

2   it's as if we're changing that -- that confidence

3   interval on the left-hand side of the distribution.

4   Instead of breaking it off at 0.407, we would move that

5   to the right by another two-and-a-half percent, so it

6   would be 0.385.

7   Is that -- Let me just make sure that I got

8   that figure right.

9   Q.   Isn't the number on the left edge there

10   0.497?

11   A.   Correct, 0.497.

12   So, if I move that back by another

13   two-and-a-half percent, it would be 0.472.

14   Q.   Okay.

15   A.   And that's what we are talking about, just

16   that the -- the possibility that the actual vote count

17   would be above -- or -- above -- Wait a second.

18   Can I just -- I'd just like to correct what I

19   just said.

20   I'm moving it to the right, so I'm actually

21   adding two-and-a-half percent. So, what we are doing

22   is moving that -- that left-hand cutoff of the

23   confidence interval to -- Just check my figures

24   here. -- to 0.523.

25   Wait a second, that's not right.

1   Q.   Right now, is the right edge of that

2 confidence interval 0.519?

3   A.   0.519.

4   Q.   Right.

5   A.   The left edge is 0.497.

6   Q.   Okay. And does the 0.497 mean 49.7 percent?

7   A.   Correct.

8   Q.   Okay.

9   A.   And I added too much. So, what I have to

10 do -- What we want to do is move that left edge to

11 0.4995, or zero -- 0.50, basically.

12   Q.   Are you talking -- There is a rectangle in

13 there and there is a curve which slopes off. By

14 "confidence interval," are you talking about the

15 rectangle?

16   A.   Right. Right. I would move the rectangle to

17 0.5, and that would be a left-hand-side five percent

18 confidence interval, just a one-tail five percent

19 confidence interval.

20   Q.   And how -- so, when we go -- The middle point

21 is .508; correct?

22   A.   Correct.

23   Q.   And if the left-hand edge were .5 or 50

24 percent, how is that a -- you said a two-and-a-half

25 percent confidence interval?

31

1   A.   No. That would be five percent on that side.

2 So, it's a one-tail confidence interval. So, the area

3 from -- from the 50 percent to the -- to the outer edge

4 of the distribution would be about five percent of the

5 probability.

6   Q.   I see. Going down -- going in the lower --

7 lower or left direction?

8   A.   Right, towards -- Right, towards the left.

9   Q.   So you are saying it should be .5, and now,

10 it's .497?

11   A.   Right.

12   Q.   What accounts for the difference between .5

13 and .497?

14   A.   The .497 leaves a two-and-a-half percent

15 error on both sides of the exit poll result --

16   Q.   Okay.

17   A.   -- and the .5 leaves a five percent error

18 just on the left side.

19   We're just -- we're checking the null

20 hypothesis against the one-sided error in favor of

21 Bush, as opposed to a random error that could be on

22 both sides.

23   Q.   Okay.

24   Going ahead, you had also, I think, mentioned

25 that you looked at state registration figures. Was

1 that done in connection with -- or is some of that

2 analysis set forth in Footnote 28 of your article?

3   A.   Yes. We summarized an analysis that was done

4 by William Kaminsky, who is a graduate student at MIT,

5 and he has done a very extensive analysis of voter

6 registration. He was able to get data for 23 states

7 that showed party registration of voters in the 2004

8 elections.

9   He found that, when he recalibrates the exit

10 poll numbers to -- by party registration, one --

11   Bill Kaminsky was addressing the Reluctant

12 Bush Responder Hypothesis, and that hypothesis says

13 that the exit polls are off because they polled more

14 Democrats than Republicans; that the Republicans were

15 reluctant to respond to the pollsters, as we've said.

16   So, one of the ways of checking that is to

17 see if, in fact, there are more registered Republicans

18 or more registered Democrats voting.

19   Q.   Could I ...?

20   A.   Yeah.

21   Q.   Let me just hand you a copy of a document

22 that's been marked as Exhibit 3. It bears the title,

23 "Do Party Proportions on Voter Registration Rolls Serve

24 as Good Estimates for Party Proportions in Actual

25 Turnout?" And ask you if you've seen that document

1 before?

2   A.   Yes, I have.

3   Q.   Okay. What is that document?

4   A.   This is a graph that was produced by William

5 Kaminsky and was sent to me.

6   Q.   And is anything on that graph in any way

7 relevant to Mr. Kaminsky's explanation or discussion or

8 analysis of the Reluctant Responder Hypothesis?

9   A.   Yes, it is.

10   Q.   Could you explain that and continue with your

11 explanation of Dr. Kaminsky's analysis, please?

12   A.   Yes.

13   He -- I believe he is a graduate student.

14   Q.   I'm sorry, he doesn't have a doctorate yet?

15   A.   Yeah. So ....

16   But, his -- this graph shows that -- it

17 compares the -- the exit poll results that we used in

18 the paper -- that is, the unadjusted exit polls -- to

19 the official exit polls which have been adjusted to --

20 to be very close to the actual election outcome, and it

21 also compares those two to the registration-weighted

22 exit poll.

23   The "registration-weighted exit poll" is --

24 just as we did for male and female voters, in this

25 case, he's reweighting the exit poll numbers so that

1 the weights of the exit polls for these 23 states

2 matches the party registration of voters in those

3 states.

4   Now, according to the Reluctant Responder

5 Hypothesis, this should explain the gap between the

6 unadjusted exit poll and the official exit poll, which

7 is very close to the actual election results.

8   Instead, what --

9   Q. Let me back up.

10   A. Yeah.

11   Q. Are you talking about the official exit poll

12 or just the official results?

13   A. Let me just check on that. They should be

14 pretty close, but -- Yeah, I think you're right. I

15 think it is the official result, but let me just check

16 that.

17   It looks like the official result.

18   Q. Okay.

19   A. For the purpose of the analysis, it's not

20 going to make a lot of difference, but ....

21   What Bill found is that, even after

22 reweighting the exit polls for party registration,

23 Kerry does at least as good -- in fact, a little bit

24 better than he did with the unadjusted exit polls, so

25 that, in the reweighted exit poll, Kerry not only --

 1 among these 23 states, Kerry wins all the states that

 2 he would have won in the unadjusted exit poll, plus

 3 Florida and Louisiana.

 4   So that we conclude that reweighting the exit

 5 poll by voter -- party registration does not explain

 6 the gap. In fact, it makes it slightly worse, at least

 7 for these 23 states. I mean that in terms of who wins

 8 the election.

 9   Q.   Doesn't this chart also indicate that if the

10 exit poll results were weighted by the state

11 registration figures, that Kerry would have won Iowa

12 and New Mexico?

13   A.   I'm sorry. Yes. Correct. He would have won

14 Iowa and New Mexico.

15   And he would have lost those in the --

16 according -- In the official election, he lost those.

17   Q.   And he also would have --

18   A.   But, he would have won those in the

19 unadjusted exit polls, as well.

20   Q.   All right. In the unadjusted exit poll,

21 Kerry won Iowa and New Mexico; --

22   A.   Correct.

23   Q.   -- correct?

24   A.   Correct.

25   Q.   Okay. And that is according to Exhibit 3?

 1   A.   Correct.

 2   Q.   And when the exit poll was reweighted to

 3 correspond to the state party registration figures --

 4   A.   Right.

 5   Q.   -- Kerry would have won Iowa and New Mexico?

 6   A.   Correct.

 7   Q.   But the actual result was that Kerry lost

 8 Iowa and New Mexico; correct?

 9   A.   Correct.

10   Q.   Okay.

11   Similarly, with Louisiana --

12   A.   Right.

13   Q.   -- or, not "similarly," but in Louisiana,

14 Kerry lost, according to the unadjusted exit poll?

15   A.   Correct.

16   Q.   He lost according to the official result?

17   A.   Correct.

18   Q.   But if the result -- but if the exit poll in

19 Louisiana had been reweighted to account for the party

20 registration figures in Louisiana, Kerry would have won

21 the state?

22   A.   Correct.

23   Q.   And by winning Iowa, New Mexico and

24 Louisiana -- That's, by my calculation, I think, about

25 21 electoral votes. -- he also would have won the

1 Presidency; correct?

2   A.   Correct.

3   And it also shows him winning Florida.

4   Q.   And you think that the Florida number --

5   A.   Right.

6   Q.   -- the number is a bit indistinct, but do you

7 have --

8   A.   It's very close, but in the -- in the

9 unadjusted exit poll, he just barely loses Florida.

10   Q.   And is it correct that when the Florida

11 unadjusted exit poll numbers are reweighted to account

12 for the state party registration figures in Florida,

13 that Kerry would win the State of Florida?

14   A.   Correct.

15   Q.   And the actual result was that Kerry lost the

16 State of Florida; correct?

17   A.   Correct.

18   Q.   Okay.

19   A.   So, the Reluctant Bush Responder Hypothesis,

20 again, does not fit that data, either, because

21 correcting the vote by party registration does not give

22 you the actual official election outcome. In fact, it

23 makes that discrepancy even larger vis-a-vis the exit

24 poll.

25   Q.   Let me make clear, try and clarify exactly

1   what happens.

2   A.   Yeah.

3   Q.   Is it correct that, just as the people taking

4   the exit poll determined what the Bush-Kerry preference

5   was among men and women, they also determined what the

6   Bush-Kerry preference was among people identifying

7   themselves as Republicans and people identifying

8   themselves as Democrats?

9   A.   Correct.

10   Q.   Okay. And is it correct that, then, in the

11   reweighting, they know what percentage of the exit poll

12   sample was composed of people identifying themselves as

13   Republicans and people identifying themselves as

14   Democrats?

15   A.   Correct.

16   Q.   And then the reweighting would be to take --

17   to adjust the percentage of Republicans and Democrats

18   in the unadjusted exit poll results and reweight them

19   so the percentage of Republicans included in the poll

20   for a given state would match the percentage of

21   Republicans who are -- people who have registered as

22   Republicans in that state, and similarly, on the

23   Democratic side?

24   A.   Correct.

25   So the only possible explanation for this

1   kind of outcome is that a larger share of Republicans

2   voted than their share in the registration relative to

3   the Democrats in every single state, that is, in

4   pro-Bush states, in pro-Kerry states, in battleground

5   states, and this -- this would seem to be very

6   implausible.

7   Q.   Okay. You also mentioned the possibility

8   that --

9   MR. PECKARSKY: Let's go off the record for

10   just a second.

11   (Discussion off the record.)

12   BY MR. PECKARSKY:

13   Q.   Was there anything else that Mr. Kaminsky

14   uncovered with respect to how the exit poll results

15   would have to be weighted, in terms of party

16   affiliation, to reach the actual reported national vote

17   totals?

18   A.   Yes, and this is consistent with what he

19   found, as I described earlier.

20   In order to get the actual election vote

21   totals from the unadjusted exit polls, you would have

22   to overweight Republican voters in 22 out of the 23

23   states that he got data for. The exception was

24   Wyoming.

25   Q.   And by "overweight," you mean that the

1   percentage of Republican voters who showed up in those

2   22 states would have to exceed the percentage of the

3   total electorate which was registered as Republicans;

4   correct?

5   A.   Correct.

6   Q.   Okay, fine.

7   Going back to your discussion of what

8   "one-tail" and "two-tail" means, and with respect to

9   Figure 1 --

10   A.   Yes.

11   Q.   -- Figure 1 of -- I think this is a document

12 that has been marked as Baiman Exhibit 2 --

13   MR. PECKARSKY: Off the record.

14   (Discussion off the record.)

15 BY MR. PECKARSKY:

16   Q.   Going back to your discussion of the one-tail

17 or two-tail issue, is there a correction which has to

18 be made?

19   A.   Yes.

20   Q.   Okay.

21   A.   I apologize. I haven't gotten much sleep

22 here.

23   So I made an error in describing how the

24 confidence level should be adjusted. You would not

25 subtract two-and-a-half percent from the edge of the

1 interval. The two-and-a-half percent refers to the

2 probability of getting that kind of an error, and you'd

3 have to find that from the distribution in a -- using

4 the normal distribution curve.

5   Q.   Drawing your attention to Figure 1, is a

6 normal distribution curve shown on Figure 1?

7   A.   Yes, it is.

8   Q.   And is that the curved line which goes up to

9 a peak on the left edge and goes back down on the right

10 side?

11   A.   Yes, that's the density function for the

12 normal distribution.

13   Q.   And in terms of -- you said -- you were

14 talking about five percent, one-tail, or 10 percent,

15 two-tail. Do you refer to one edge of this

16 distribution function as a "tail"?

17   A.   Yes.

18   Q.   Okay, fine.

19   And by five percent, did you mean you had --

20 starting with the center line of .508 --

21   A.   Correct.

22   Q.   -- did you mean that you had to pick a point

23 going out to the left, or lower numbers, such that when

24 you run a vertical line from the X axis up to the

25 curve, on the left side, that the area from that

1   vertical line going left to the end of the curve

2   comprises five percent of the area under the total

3   curve?

4   A.   Correct, --

5   Q.   And --

6   A.   -- and that curve is asymtotic, so it never

7   really ends.

8   Q.   But there are mathematical approximations

9   made --

10   A.   Correct.

11   Q.   -- to figure out where you have to draw that

12 line to get five percent of the area under the curve;

13 correct?

14   A.   Correct.

15   Q.   And then when you were talking about five

16 percent one-tail or 10 percent two-tail, you would do

17 the same thing on the right edge except in reverse

18 order; you would find a vertical line which you can

19 draw going in the Y direction from the X axis, and

20 where that -- in the area -- that line will hit the

21 curve at some point and the area going to the right

22 would comprise five percent of the area under the total

23 curve; correct?

24   A.   Correct.

25   Q.   Okay. And then, on one side, you'd have, I

1 guess, a five percent, one-tail --

2   A. Probability of error.

3   Q. -- probability; right?

4   A. Right.

5   Q. And two-tail, it would be five percent on the

6 left side and five percent on the right side --

7   A. Correct.

8   Q. -- and that would end up being 10 percent

9 probability of error or 90 percent probability that the

10 result would fall between the two vertical lines I've

11 described; correct?

12   A. Correct, you'd have a 90 percent confidence

13 level.

14   MR. PECKARSKY: Okay. Let's go off the

15 record.

16   (Discussion off the record.)

17 BY MR. PECKARSKY:

18   Q. Now, Doctor, you had also mentioned: The

19 possibility of discrimination at the polls could have

20 some effect or could somehow contribute to the

21 difference between the exit poll results and the actual

22 reported results. What is that effect, in your view?

23   A. This kind of discriminatory vote suppression,

24 by which I mean -- let's say in precincts that are more

25 Democratic, there are obstacles to voting; for example,

1   a scarcity of voting machines or other kinds of

2   obstacles that make it more difficult to vote and,

3   therefore, there is a lower turnout in those precincts

4   than has historically been the case. In that kind of

5   situation, the exit poll could -- at the precinct level

6   could be -- could match the actual vote-shares, but

7   because the exit poll assumes that that precinct

8   represents a given percentage of the total state vote,

9   the exit poll might overstate, let's say in this case,

10 the Democratic vote relative to the actual Democratic

11 vote share.

12   Q.   And is that the way in which actions which

13 had a discriminatory racial impact could have

14 contributed to the difference between the exit poll

15 results and the actual reported result in the State of

16 Ohio?

17   A.   Yes.

18   Given our knowledge that African-Americans,

19 for example, are much more likely to be Kerry voters,

20 if you were able to put obstacles to voting in

21 precincts that were predominantly African-American,

22 your actual vote count for Kerry would be lower than

23 what the exit poll would predict.

24   Q.   To discuss the mechanics of this, is it

25 correct that before the exit poll is taken, a weight is

1 assigned to each precinct where a sample will be taken?

2   A.   Yes. In order to get a state-level exit poll

3 from precinct-level sampling, you need to assign to

4 each precinct a weight, and the best possible -- the

5 only possible weight you can give before the election

6 is the weight that is an historical weight that's taken

7 from previous elections.

8   Q.   In other words, the weights for the 2000

9 election would come from -- the weight for the 2004

10 election exit poll would come from some analysis of

11 what the prior vote was in that precinct going back to

12 the 2000 -- and 1996, perhaps -- elections and other

13 Presidential elections?

14   A.   Correct.

15   Q.   But in any event, that number is preassigned

16 before the exit poll starts; correct?

17   A.   Correct, and that's a share, that's a voting

18 share of the total vote for each precinct.

19   Q.   Okay. And just to take hypothetical numbers

20 to try and explain this, --

21   A.   Right.

22   Q.   -- assuming a precinct which was assigned a

23 one-percent share of the state vote -- that is, that it

24 was predetermined that whatever the result was in that

25 precinct would contribute one percent of the total vote

1 in Ohio when it came time to calculate the Ohio

2 results --

3   A.   That that precinct represents one percent of

4 the total vote in Ohio?

5   Q.   Right.

6   A.   Okay.

7   Q.   -- and if -- without discrimination, that

8 precinct would have contributed, say, 700 Kerry

9 votes, --

10   A.   Correct.

11   Q.   -- then, without discrimination, one percent

12 of 700 is seven --

13   A.   Right.

14   Q.   -- and that precinct would have contributed

15 seven votes to the statewide total; correct?

16   A.   Correct.

17   Q.   Okay. But if there were some kind of

18 discrimination sufficient to drive the Kerry votes in

19 that precinct from 700 down to 400, then you'd still

20 apply the one-percent factor and that precinct would

21 contribute four Kerry votes to the total; correct?

22   A.   No.

23   Q.   Okay. If it's not correct, fine. Then

24 explain how it works, please.

25   A.   That's not correct.

```
 1            What happens is:  If there were some way of
 2   repressing the overall vote, the total vote in that
 3   precinct so that, in the national election, that the --
 4       Q.   I'm sorry.  You said national election?
 5       A.   I'm sorry.
 6            In the state election, the Ohio election,
 7   that precinct contributed only, let's say, half a
 8   percent to the state total, that precinct represented
 9   only half a percent of the state total --
10       Q.   In the actual voting --
11       A.   In the actual vote.
12       Q.   Do you mean by -- in the actual vote in 2004?
13       A.   Correct, --
14       Q.   Okay.
15       A.   -- for -- for the state, then, even if --
16   even if you've got the correct shares for the
17   precinct-level exit poll, when you added it up for the
18   state-level exit poll, the exit poll would have given
19   you seven votes but the actual vote would have given
20   only three-and-a-half.  So the exit poll would have
21   overstated the Kerry vote by three-and-a-half votes
22   because of that repressing the vote in that precinct.
23            It's -- the problem is:  The exit poll
24   assumes a certain weight, assumes that each precinct
25   represents a certain share of the vote in the state,
```

1 and that share is determined historically.

2   In the actual election, as in -- in Ohio, for

3 example, there is evidence that the -- in many of the

4 Democratic precincts, there was a repression of the

5 vote. That is, the share of -- the share of the vote

6 represented by those Democratic precincts, the share of

7 the actual vote will be lower than what it has been

8 historically.

9   The exit poll didn't take that into account.

10 The exit poll assumed that the -- the vote-share for

11 that precinct would be the same as it has been

12 historically, or relatively the same. So the exit poll

13 will be overstating the importance of that precinct.

14 And if that precinct is a -- is a more-Democratic

15 precinct, the exit poll will thereby overstate the

16 Democratic vote-share relative to the actual vote.

17   Q.   Okay.

18   Continuing with your -- well, the discussion

19 of your analysis of the voting in Ohio, did you analyze

20 the difference between the exit poll results and the

21 actual certified results -- or actual reported results

22 in the State of Ohio?

23   A.   Yes, I did.

24   Q.   What was the result of your analysis?

25   A.   I found -- well, in the State of Ohio, the

1 certified result was that Kerry would have gotten 48.7

2 percent of the vote -- or did get, according to the

3 certified result, and Bush got 51.25 percent of the

4 state vote.

5   The exit poll predicted that Kerry would get

6 52.1 percent of the state vote and Bush would get 47.9

7 percent. Therefore, the exit poll predicted a Kerry

8 victory. Then the actual certified outcome reported a

9 Bush victory. This was an error of about 3.4 percent

10 for the Kerry vote. That is, the Kerry vote was

11 overstated in the exit poll by about 3.4 percent

12 relative to the reported certified vote, and the -- it

13 results in an error of about 2.3 standard deviations

14 for cluster sampling, and there is only about a

15 1-in-100 chance of that occurring, of that kind of an

16 error for -- for non- -- for noncluster sampling,

17 without the correction, it's about a 1-in-1,000 chance

18 of that error occurring.

19   Q.   By "noncluster sampling" are you referring to

20 random sampling?

21   A.   Correct.

22   Q.   Okay. But with the cluster -- Fine.

23   You mentioned there's only 1 chance in 100

24 with the cluster sampling --

25   A.   Correct.

1   Q.   -- that is the sampling on a

2 precinct-by-precinct basis --

3   A.   Correct.

4   Q.   -- of that error occurring?

5   A.   Correct.

6   Q.   Do you mean that there is only a 1-in-100

7 chance of that happening without there being a

8 methodological error, that is, a problem in counting

9 the exit poll results or a problem in counting the

10 actual results?

11   A.   Or discriminatory voter suppression, yes.

12   Q.   Okay.

13   (Cell phone ringing.)

14   Okay. So, is it correct, then, that the

15 possible explanations for this are some type of error

16 in the poll sample, either fraud or a mistake in

17 counting the actual vote, or -- I guess it's a subset

18 of an error in the poll sample -- some type of

19 discriminatory effect at the polls which resulted in

20 the exit polls not being correct?

21   Is that your view of the outcome in Ohio?

22   A.   I wouldn't call the latter "error."

23   Q.   By "latter," you mean what?

24   A.   The discriminatory vote-suppression. That

25 would not be an error in the exit polling because they

1 have no other weight to use except for the historical

2 weight. That would be the result of an election that

3 was not fair, was not free; you put obstacles for that,

4 that affected voters for one party more than voters for

5 another party, to the extent that it changed the

6 election outcome.

7   MR. PECKARSKY: Let's just take a break for

8 just a second.

9   (Recess taken.)

10 BY MR. PECKARSKY:

11   Q.   Would it be fair to summarize your testimony,

12 Dr. Baiman, with respect to the State of Ohio and the

13 2004 Presidential election, as that there was only one

14 chance in 100, given a proper conduct of that exit

15 poll, that the results as reported were the result of a

16 free, fair and nondiscriminatory elections?

17   A.   Correct.

18   MR. PECKARSKY: Thank you.

19   All right. We had sent notices to counsel

20 for the Contestees. They both advised us,

21 Mr. Coglianese and Mr. Tunnell, that they would not be

22 attending. We let them know the deposition would be

23 proceeding. I want to offer them the opportunity to

24 cross-examine the witness, and they apparently will not

25 exercise that opportunity to cross-examine; they are

1 not here. They have waived their opportunity.

2   I think we are about to conclude the

3 deposition. Let's just go off the record for a second.

4   (Discussion off the record.)

5   Let's go back on the record.

6   Dr. Baiman, may we understand that you will

7 waive your right to review the transcript and waive

8 signature of the final transcript?

9   THE WITNESS: Yes.

10   MR. PECKARSKY: Okay. Thank you very much.

11   Thank you very much for coming today.

12   Oh, yes, and the exhibits, counsel for the

13 Contesters will retain the originals of the exhibits.

14 The court reporter will have them until she delivers

15 the final version of the transcript and then we will

16 have them. If anybody wants to look at them or get

17 copies, they can contact me.

18   - - -

19   Thereupon, at 1:40 p.m., on Friday, December

20 31, 2004, the deposition was concluded.

21   - - -

22   (Notice was received via telephone from Peter

23 Peckarsky, Esq., by the Court Reporter on January 1,

24 2005, at approximately 5:30 p.m., that the Deponent

25 does not want to waive reading and signing of the

1 deposition transcript and now would like to exercise

2 his right to read and sign the transcript.

3 Accordingly, the Certificate Page for the Deponent is

4 being made a part of the deposition transcript. The

5 Errata Sheet and Signature Letter are being sent to the

6 Deponent along with the transcript.)

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 1                        CERTIFICATE

 2    STATE OF _____        :
                                  SS:
 3    COUNTY OF _____  :

 4

 5          I, RON BAIMAN, PH.D., do hereby certify that

 6    I have read the foregoing transcript of my deposition

 7    given on December 31, 2004; that together with the

 8    correction page attached hereto noting changes in form

 9    or substance, if any, it is true and correct.

10                        _____
                          RON BAIMAN, PH.D.
11

12          I do hereby certify that the foregoing

13    transcript of the deposition of RON BAIMAN, PH.D. was

14    submitted to the witness for reading and signing; that

15    after he had stated to the undersigned Notary Public

16    that he had read and examined his deposition, he signed

17    the same in my presence on the _____ day of

18    _____, 2005.

19

20

21                        _____
                          NOTARY PUBLIC - STATE OF _____
22    My Commission Expires:

23    _____, _____.

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 1                    CERTIFICATE

 2   STATE OF OHIO        :
                                    SS:
 3   COUNTY OF FRANKLIN  :

 4          I, Sylvia A. Fraley, a Registered Diplomate
     Reporter and Certified Realtime Reporter and Notary
 5   Public in and for the State of Ohio, duly commissioned
     and qualified, do hereby certify that the within-named
 6   RON BAIMAN, PH.D. was by me first duly sworn to testify
     to the truth, the whole truth, and nothing but the
 7   truth in the cause aforesaid; that the deposition then
     given by him was by me reduced to stenotype in the
 8   presence of said witness; that the foregoing is a true
     and correct transcript of the deposition so given by
 9   him; that the deposition was taken at the time and
     place in the caption specified and was completed
10   without adjournment; and that I am in no way related to
     or employed by any attorney or party hereto or
11   financially interested in the action; and I am not, nor
     is the court reporting firm with which I am affiliated,
12   under a contract as defined in Civil Rule 28(D).

13          IN WITNESS WHEREOF, I have hereunto set my
     hand and affixed my seal of office at Columbus, Ohio on
14   this 1st day of January, 2005.

15

16                          _____
                            SYLVIA A. FRALEY, RDR, CRR
17                          NOTARY PUBLIC - STATE OF OHIO

18   My Commission Expires:  May 5, 2008.

19                       - - -

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                    FRALEY, COOPER & ASSOCIATES
         (800) 852-6163     (614) 228-0018     (740) 345-8556
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