

HOW THE POLL WAS CONDUCTED AND THE MARGIN OF ERROR CALCULATED

The CBS News 2016 Battleground Tracker is a panel study based on interviews conducted on the internet of registered voters in Colorado, Florida, Iowa, Michigan, North Carolina, New Hampshire, Nevada, Ohio, Pennsylvania, Virginia, Wisconsin, California, Georgia, Illinois, Indiana, New Jersey, New York, South Carolina, and Texas. The poll was conducted by YouGov, an online polling organization.

The most recent wave interviewed registered voters on July 13-15, 2016 in eleven battleground states (Colorado, Florida, Iowa, Michigan, North Carolina, New Hampshire, Nevada, Ohio, Pennsylvania, Virginia, and Wisconsin) and combined single state polls in Iowa, Michigan, and Ohio. All YouGov respondents were recontacted July 15-16, 2016 for a follow-up survey on the Trump Vice Presidential announcement, and were recontacted again July 22-23, 2016 for a follow-up survey at the conclusion of the Republican National Convention.

The first wave was fielded between September 3-10, 2015, with 4860 respondents, and the second wave fieldwork was completed between October 15-22, 2015, with 3952 respondents and the third wave between November 15-19, 2015. The fourth wave was fielded between December 13-17, 2015. The majority of the 2nd-4th wave respondents are recontacted panelists. The first 4 waves consist of interviews in Iowa, New Hampshire, and South Carolina only. The fifth wave added new interviews in Florida, Georgia, and Texas, and was completed between January 17-21, 2016. The sixth wave was fielded only in South Carolina, with interviews completed February 10-12, 2016. The seventh wave was fielded also in February, among panelists in Georgia, Texas, and Virginia. The eighth wave fielded February 22-26, 2016, and recontacted panelists from the January wave in Georgia and Texas. Virginia respondents were all new to the panel. The ninth wave was fielded to new respondents in Michigan from March 2-4, 2016, and in addition, respondents in Florida, Illinois, and Ohio were contacted March 9-11, 2016. Respondents in New York, Pennsylvania, and Wisconsin were contacted March 29-April 1, 2016 for the tenth wave. In the eleventh wave of our primary surveys, respondents in California, New York, and Pennsylvania were contacted April 13-15, 2016. The twelfth was conducted April 20-22, 2016 and interviewed panelists in Indiana and Pennsylvania. The thirteenth wave was the first general election poll, and was conducted of registered voters in Florida and Ohio May 16-19, 2016. The fourteenth wave was fielded May 31-June 3, 2016, and consists of registered voters in California and New Jersey, interviewing both those likely to vote in the November general election and the upcoming Democratic primary election. The fifteenth wave of the Battleground Tracker interviewed registered voters in Colorado, Florida, North Carolina, and Wisconsin from June 21-24, 2016.

Respondents were selected from YouGovs and two other online panels. These are “opt-in” panels which are open for anyone to join. However, YouGov also randomly selected persons from voter registration lists who had previously voted in primary elections and contacted them by phone. A total of 24017 registered voters were contacted by phone and the YouGov sample includes 1821 phone recruits.

Recontact rates ranged from 34% to 75% for each state for the reinterview waves. In addition, new respondents were selected from the YouGov panel each wave.

For the October, November, and December waves, all respondents from previous waves were contacted to participate. In the January wave, all respondents from previous waves in Iowa, New Hampshire, and South Carolina were contacted to participate. Florida, Georgia, and Texas are completely new interviews. In the February wave, all respondents from previous South Carolina waves were contacted to participate. In the March wave, all respondents from the previous Florida wave were invited to participate. All respondents from the New York survey in late March were invited to participate in the April wave. In the June 21-24, 2016 survey, all respondents from the previous Florida general election poll (conducted May 16-19, 2016) were invited to participate.

Approximately 60% of the October wave consists of reinterviews, with the remainder coming from new additions. Approximately 70% of the November wave consists of reinterviews from the previous waves, approximately 90% of the December and January waves consist of reinterviews. Approximately 84% of the February South Carolina wave consists of reinterviews.

In the February SEC Primary wave, Republican respondents from the January wave in Georgia and Texas were invited to participate. We did not interview Democrats in these states in January. Similarly,

| | Total Interviews | | | | | | | | | | | |
|--------------|------------------|------|---------------|------------------|---------------|---------------|-------------|------|-----------|-------------|------|------|
| | September | | | October | | | November | | | December | | |
| | IA | NH | SC | IA | NH | SC | IA | NH | SC | IA | NH | SC |
| YouGov | 1263 | 1078 | 1170 | 1003 | 918 | 1083 | 1134 | 1002 | 1021 | 920 | 837 | 884 |
| Research Now | 407 | 272 | 335 | 339 | 230 | 282 | 421 | 334 | 426 | 332 | 254 | 518 |
| Critical Mix | 0 | 0 | 335 | 0 | 0 | 97 | 0 | 0 | 62 | 0 | 0 | 67 |
| Total | 1670 | 1350 | 1840 | 1342 | 1148 | 1462 | 1555 | 1336 | 1509 | 1252 | 1091 | 1469 |
| | January | | | | February | | | | March 2-4 | | | |
| | FL | GA | IA | NH | SC | TX | SC | GA | TX | VA | MI | |
| | YouGov | 988 | 494 | 906 | 764 | 943 | 984 | 1011 | 1322 | 3146 | 1193 | 1415 |
| Research Now | 0 | 0 | 341 | 276 | 359 | 0 | 233 | 98 | 0 | 54 | 0 | |
| Critical Mix | 0 | 0 | 0 | 0 | 68 | 0 | 71 | 0 | 0 | 0 | 0 | |
| Total | 988 | 494 | 1247 | 1040 | 1370 | 984 | 1315 | 1420 | 3146 | 1193 | 1415 | |
| | March 9-11 | | | March 29-April 1 | | | April 13-15 | | | April 20-22 | | |
| | FL | IL | OH | NY | PA | WI | CA | NY | PA | IN | PA | |
| | YouGov | 1877 | 1681 | 1742 | 1654 | 729 | 1086 | 2403 | 2050 | 837 | 1084 | 1917 |
| Research Now | 0 | 0 | 0 | 0 | 0 | 415 | 0 | 0 | 0 | 0 | 0 | |
| Critical Mix | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Total | 1877 | 1681 | 1742 | 1654 | 729 | 1501 | 2403 | 2050 | 837 | 1084 | 1917 | |
| | May 16-19 | | May 31-June 3 | | | June 21-24 | | | | | | |
| | FL | OH | CA | NJ | CO | FL | NC | WI | | | | |
| | YouGov | 880 | 875 | 1200 | 910 | 707 | 1126 | 842 | 783 | | | |
| SSI | 98 | 89 | 0 | 210 | 161 | 72 | 115 | 169 | | | | |
| Toluna | 22 | 36 | 0 | 80 | 132 | 3 | 43 | 47 | | | | |
| Total | 1000 | 1000 | 1200 | 1200 | 1000 | 1200 | 1000 | 1000 | | | | |
| | July 13-15 | | | July 15-16 | | July 22-23 | | | | | | |
| | IA | MI | OH | Battle Ground | Battle Ground | Battle Ground | | | | | | |
| | YouGov | 751 | 1082 | 1047 | 3289 | 2458 | 2131 | | | | | |
| Critical Mix | 129 | 0 | 2 | 17 | 0 | 0 | | | | | | |
| SSI | 118 | 119 | 55 | 77 | 0 | 0 | | | | | | |
| Total | 998 | 1201 | 1104 | 3383 | 2458 | 2131 | | | | | | |

Republican respondents from the January wave in Florida were invited to participate in the mid-March wave, and Republican respondents from the late-march wave in Pennsylvania were invited to take the April wave. Approximately 60% of the New York and Pennsylvania portions of the April wave consist of reinterviews; all California respondents were new interviews this month. In the final Pennsylvania poll, all previous Republican respondents were invited to participate. Approximately 80% of the Pennsylvania Republicans in the April 20-22 wave had taken at least one previous wave. Approximately 50% of the Florida registered voters in the June 21-24, 2016 wave had taken the previous survey. Approximately 20% of the Battleground sample in the July 13-15, 2016 wave had taken a previous survey. The Iowa, Michigan, and Ohio samples consist of 50-75% recontacts.

All respondents in Florida (January), Virginia (February), Michigan (early March), Illinois and Ohio (mid-March), Wisconsin (late March), California (April), and Indiana (late April) only participated in one wave. Reinterviews of the primary election panel surveys are summarized below.¹ The general election

¹Florida (January), Georgia, Pennsylvania, and Texas counts are Likely Republican Voters only. Democratic voters were

surveys started with the May 16-19, 2016 wave and are summarized in a separate table below.

| | Recontacts and New Interviews | | | | | | | |
|-------------|-------------------------------|------|------|-----|-----|-----|------|------|
| | Primary Election Surveys | | | | | | | |
| | IA | NH | SC | GA | TX | FL | NY | PA |
| Six Waves | - | - | 434 | - | - | - | - | - |
| Five Waves | 450 | 349 | 278 | - | - | - | - | - |
| Four Waves | 404 | 375 | 400 | - | - | - | - | - |
| Three Waves | 414 | 408 | 374 | - | - | - | - | 544 |
| Two Waves | 742 | 547 | 658 | 300 | 489 | 633 | 1256 | 429 |
| One Wave | 823 | 643 | 1303 | 195 | 496 | 356 | 1196 | 252 |
| Total | 2833 | 2322 | 3447 | 495 | 985 | 989 | 2452 | 1225 |

| | Recontacts and New Interviews | | | | | | | | |
|-------------|-------------------------------|------|------|------|------|------|------|-----|------|
| | General Election Surveys | | | | | | | | |
| | FL | OH | CA | NJ | CO | NC | WI | IA | MI |
| Four Waves | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Three Waves | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Two Waves | 680 | 516 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| One Wave | 840 | 1073 | 1200 | 1200 | 1000 | 1000 | 1000 | 998 | 1201 |
| Total | 1520 | 1589 | 1200 | 1200 | 1000 | 1000 | 1000 | 998 | 1201 |

Respondents were selected for participation from available panel members to be representative of registered voters from each state in terms of age, race, and gender. A propensity score (based upon a case-control logistic regression including age, race, gender, education, born-again status, party registration, and 2012 vote) was estimated for each respondent and responding panelists were post-stratified upon propensity score deciles, and adjusted for differential recontact from the prior wave. A score for likelihood of voting was computed for each respondent based upon past turnout and self-reported likelihood of voting in the presidential primary.

Finally, the product of the base weights and turnout probabilities were raked to match parameters from past primary and general elections in the state drawn from exit polls, and aggregate parameters from the current voter file. The weights were trimmed to have a maximum value of seven.

The “margin of error” is an approximate 95 percent confidence interval for the sampling proportion. It is calculated for a sample proportion using

$$\hat{p} \pm \sqrt{(1 + CV^2)/n}$$

where CV is the coefficient of variation of the sample weights and n is the sample size used to compute the proportion. This is a measure of sampling error (the average of all estimates obtained using the same sample selection and weighting procedures repeatedly should, in principle, be within the margin of error in 95 percent of such samples). It does not reflect non-sampling errors, including potential selection bias in panel participation or in response to a particular survey. The validity of the margin of error for total survey error (including non-sampling error) requires that, after controlling for the sample selection and weighting variables, survey measurements be independent of sample selection.

not contacted in the first wave.