Team 1
IBM Hackathon
@ UNH

UNH Analytics
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The Current National Election Polls

- To start our analysis we examined the current status of the presidential race.
- We utilized Datawatch to grab the most recent national polls from Nate Silver’s fivethirtyeight.
- Out of these 10 polls Hillary Clinton is leading in 9.
- To get a better understanding of the race at a national level we examined the current US demographics.
Demographic Analysis

✓ As expected we see the United States is very diverse!

✓ In order to understand the diversity we narrowed our scope.

✓ We collected data and built an interactive dashboard with IBM Watson Analytics to understand each candidates voting base!
Voter Profile Dashboards
What’s on each Voter Profile Dashboard?

• Our dashboards provide important information about the voters supporting the democratic, republican, and libertarian presidential candidates.

• We feature each candidates support across different levels of education, gender, area of residence, race, age and more!

• The dashboard is interactive and allows users to filter by each candidate!

• The data was gathered using DATAWATCH

• The data came from IBD/TIPP Presidential Election Tracking Poll, which has been the most accurate poll in recent presidential elections. For more information visit their website at http://www.investors.com/politics/ibd-tipp-presidential-election-poll/!
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<td>6</td>
<td>10</td>
<td>5</td>
<td>15</td>
<td>9</td>
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**Candidate:**
- **Clinton**
- **Johnson**
- **Trump**

**Percent Support Per Education Level**
- College Degree
- High School Education
- Some College

**Percentage Support Across Voter Party**
- Democrats
- Ind/Other
- Republicans

**Percent Support Among Income Levels**
- 30K-50K
- 50-75K
- 75K+
- Under 30K

**Percentage Support Across Area Type**
- Rural
- Suburban
- Urban
Gary Johnson Voter Profile Key Takeaways

✓ Education matters! The most support comes from those with a college degree!

✓ Income influences the ballot! Upper-middle class income voters are more likely to support Johnson!

✓ Suburban neighborhoods show their support! 1 out of every 10 vote for Johnson.
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<tbody>
<tr>
<td>39.5</td>
<td>38</td>
<td>45</td>
<td>14</td>
<td>23</td>
<td>49</td>
</tr>
</tbody>
</table>

**Candidate**
- Clinton
- Johnson
- **Trump**

**Percent Support Per Education Level**
- College Degree
- High School Education
- Some College

**Percentage Support Across Voter Party**
- Party: Democrats, Ind/Other, Republicans

**Percent Support Among Income Levels**
- Income: 30K-50K, 50-75K, 75K+, Under 30K

**Percentage Support Across Area Type**
- Rural, Suburban, Urban
Donald Trump Voter Profile Key Takeaways

✓ Those living in rural areas come together over Trump! Half of those living in rural areas are pledging their support!
✓ Trump is supported by 49% of all white voters!
✓ Who needs college? A large portion of those without a college degree are giving their support!
✓ How old are you? If you are between age 45 and 64 there is a good chance you will vote for Trump. In fact, 47% support Trump!
✓ Not undecided anymore! 42% of those who are Independents or “Other” are planning to vote for Trump.
### Percent of Union Support

- Clinton: 44%

### Percent of Female Support

- Clinton: 46%

### Percent of Male Support

- Clinton: 33%

### Percent of Black Support

- Clinton: 71%

### Percent of Hispanic Support

- Clinton: 44%

### Percent of White Support

- Clinton: 34%

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#### Percent Support Per Education Level

<table>
<thead>
<tr>
<th>Education Level</th>
<th>Support</th>
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<tbody>
<tr>
<td>College Degree</td>
<td>45%</td>
</tr>
<tr>
<td>High School</td>
<td>25%</td>
</tr>
<tr>
<td>Some College</td>
<td>40%</td>
</tr>
</tbody>
</table>

#### Percentage Support Across Voter Party

- Democrats
- Ind/Other
- Republicans

#### Percent Support Among Income Levels

<table>
<thead>
<tr>
<th>Income Level</th>
<th>Support</th>
</tr>
</thead>
<tbody>
<tr>
<td>30K-50K</td>
<td>25%</td>
</tr>
<tr>
<td>50-75K</td>
<td>30%</td>
</tr>
<tr>
<td>75K+</td>
<td>40%</td>
</tr>
<tr>
<td>Under 30K</td>
<td>35%</td>
</tr>
</tbody>
</table>

#### Percentage Support Across Area Type

- Rural
- Suburban
- Urban
Hillary Clinton Voter Profile Key Takeaways

- Those with a degree vote for me! Hillary has earned support from nearly half of those with a college degree!
- Money talks! A large portion of voters who have an income of 75k+ support Hillary Clinton.
- City dwellers are for her! Those living in urban neighborhoods are in overwhelming agreement about their support for Hillary.
- Unions are in unison! Almost half of unions agree about one thing, Mrs. Clinton.
Swing State Analysis

✓ Because of the electoral college we decided it may be inaccurate to only look at national polls.

✓ We built an interactive dashboard that displays the most recent polls and current demographics in every swing state.

✓ The next slides highlight 3 of the swing states, however all 11 are available in our interactive dashboard!
Michigan Analysis

Most Recent Polls in Swing State

Age Breakdown by Swing State

Race Demographics by Swing State
Nevada Analysis
The one swing state we decided to focus on was New Hampshire because of it’s pivotal role in the general election!

We analyzed age, voting at the county level, and support across income brackets!

Because of the rich data set provided we were able to get predictive about voters’ interest in the general election.

Next we used IBM Watson Analytics to build a decision tree which predicted with an astounding 70% accuracy!
New Hampshire Analysis

Clintan vs. Trump at New Hampshire county level

Ages of New Hampshire voters

Clinton vs. Trump across New Hampshire income brackets
Predicting New Hampshire voter interest in the general election using IBM Watson Analytics Decision Tree Algorithm!

Number 1 decision rule that indicates a person is extremely interested in the general election?
✓ If they somewhat approve of Hassan, watch WMUR everyday, and they are fairly conservative.

Number 1 decision rule that indicates a person is not very interested in the general election?
✓ If they support Donald Trump over Hillary Clinton and they are still deciding on who to vote for.

Number 1 decision rule that indicates a person is very interested in the general election?
✓ If they strongly disapprove of Obama’s economy and they have a moderately lean political ideology.

See our decision tree at work on the next page!
Polls vs Early Voting

✓ Because of the rampant talk about poll rigging we decided to take a look at a different metric to gauge the race in swing states.

✓ With the help of Datawatch we were able to pull in various early voting datasets from three swing states for the 2012 election and the current election.

✓ Because it’s still early in early voting we converted the numbers of people that have early voted and/or requested an absentee ballot into percentages so we could compare them to the previous election easier.

✓ From these datasets we were able to create a dashboard that compares the current polls to the difference in early voting between 2012 and 2016.
North Carolina
North Carolina Analysis

Trump is down in the majority of polls but as of right now Republicans are up 1% in early voting from last election and Democrats are down 6%.

This is a good early indicator that people in North Carolina aren’t as excited about Hillary Clinton as they were Obama.
Ohio, Hamilton County

2012 Early Voting Percentages
- Democrat: 0.60
- Independent: 0.20
- Republican: 0.20

2016 Early Voting Percentages (So Far)
- Democrat: 0.60
- Independent: 0.20
- Republican: 0.20

Recent Poll Percentages
- Clinton: 40%
- Trump: 30%

Poll Sources:
- Anzalone Liszt
- CVoter International
- CVoter International
- Ipos / SFG 30-Oct-16
- Monmouth University
- Public Policy Polling
- Quinnipac University
- TargetSmart
- YouGov 1-Oct-16
Ohio, Hamilton County Analysis

- Hamilton county is the only county in Ohio that we were able to acquire 2012 and 2016 early voting data for.
- Once again we see that Clinton is leading the majority of polls in this swing state.
- From this analysis we can see that Republicans are up 5% in early voting and Democrats are down 4%.
- This is a serious difference from 2012 and we expect this difference to have a serious impact on the race.
Florida Analysis

✓ Once again we see Clinton leading in the majority of polls.

✓ The difference between 2012 and 2016 isn’t as evident in Florida’s early voting but the Democrats behind by 2%.
Final Words!

- Based on the early voting patterns in the several swing states we looked at we can predict that Trump will do better against Clinton than Romney did against Obama in 2012 in those states.

- However, Clinton still holds a strong lead in the majority of the swing state polls.

- Based on our voter profile we would recommend Trump try to expand his reach to minority voters in swing states.

- We would recommend Clinton to try to capture some of the younger voters whom currently support Gary Johnson.
# Sources For Outside Data

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<thead>
<tr>
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<th>Link</th>
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Datawatch Use Case

✓ Throughout our project we used Datawatch extensively!
✓ The following slides have a few examples demonstrating some of the techniques we used during our process.
Importing
### PEPASR6H

#### Annual Estimates of the Resident Population by Sex, Age, Race, and Hispanic Origin for the United States: April 1, 2010 to July 1, 2015

2015 Population Estimates

**Geography:** Alabama  
**Year:** April 1, 2010 Census  
**Hispanic Origin:** Total

<table>
<thead>
<tr>
<th>Sex</th>
<th>Total (Persons)</th>
<th>White (Persons)</th>
<th>Black or Amer (Persons)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Both Sexes</td>
<td>4,778,736</td>
<td>3,362,877</td>
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</tr>
<tr>
<td>Aoth Sexes</td>
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<tr>
<td>5 to 9 years</td>
<td>308,229</td>
<td>195,059</td>
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<tr>
<td>10 to 14 years</td>
<td>319,655</td>
<td>207,249</td>
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<td>15 to 19 years</td>
<td>343,471</td>
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</tr>
<tr>
<td>20 to 24 years</td>
<td>778,172</td>
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**Reference**  
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- N: Any digit  
- Ø: Any non-blank  
- B: Blank
Adding Columns
Appending
Aggregating
Aggregating