Mathematics and Politics

Current Practices and Trends
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Mathematics and Politics

- Science of Elections
- Field Operations
- Legislation
- Influencing Elections
- Predicting Elections and Trends
- Using Mathematics to Persuade

Science of Elections

- Decide a Message
  - Review and test your strengths and weaknesses and your opponents strengths and weaknesses

Science of Elections

- Conduct a Poll
  - 10 to 30 questions, 5 to 20 minutes
    - Approval rating
    - Head-to-Head
    - Issues
      - Strongly agree, agree, neutral, disagree, strongly disagree
      - Strong doubt, some doubt, neutral, approve, strong approval
    - Repeat approval and head-to-head

Science of Elections

- Finalize Message(s)
  - Select issue with highest approval and intensity
    - 70% or higher approval optimal
    - 40% intensity optimal

- Create Literature

- Create Video

Science of Elections

- Decide Campaign Strategy
  - Understand voter universe
  - How many votes needed to win
  - Estimate Campaign income
  - Decide when and where to spend campaign resources
  - Message must be repeated
    - TV (can be very effective, but most expensive). Could use an efficiency measure (% people in broadcast area who are voters in your district)
      - Network
      - Cable
    - Direct Mail, decide universe based on available data
    - Radio

Science of Elections

- Conduct tracking Polls
  - Identify changes or new information
  - How is your message doing?
  - How effective is your opponent's campaign/message?
  - Is your approval changing?
  - How is the head-to-head changing?

Field Operations

- Understand precincts (approx 700 in CA CD)
  - # homes in each precinct
  - # voters per home
  - # Dems, #R's, #DTS, etc
  - Demographic characters
  - Voter turnout or reliability
  - Big data uses
  - # Votes needed per precinct

Field Operations

- Recruit field staff early
- Field staff recruits volunteers
  - Local activists
  - Colleges and high schools
- Generate walk sheets for precinct walkers
  - As complete a picture as possible for each voter
- Generate call sheets for phone banks

Field Operations

- Voter Contact:
  - Support, oppose, or undecided?
  - Record answer
  - Ask supporters to volunteer, want lawn signs?
- Don't contact supporters again until the vote
- Don't contact opponent supporters again
- Contact undecided voters again and keep trying to contact likely supporters
- Develop a count of yes voters

Field Operations

- GOTV (Get Out the Vote)
  - Watch lists at polling stations of who has not voted
  - Starting about noon, visit supporters who haven't voted and make sure they vote. Keep pressure on supporters who have not voted right up to when polls close, offer rides if needed (can get 1-5% of total votes this way)
- Save data for next election

Legislation

- Can legislative votes be predicted? Can Statistics be useful? (Example)

- What compromises would work? (Example)

- Whipping and counting (Farm bill)

Influencing Elections

- Grand strategy, how do you want to use your resources?
  - 2-year: Super PAC's, media, direct voter contact
  - 4-year: get support and commitments of prominent individuals and institutions
  - 8-years and longer: foundations, non-profits, institutions

Predicting Elections and Trends

- Statistics
- Other mathematical tools

Using Mathematics to Persuade

- Logical arguments – not very effective

- Emotional messages
  - Use polls, statistics, or other methods to hone emotional messages