

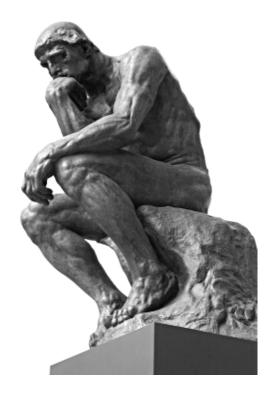
## An Analysis of Cybersecurity Legislation and Policy Creation

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#### **The Problem**

- Cybersecurity legislation is important.
  - Difficult to pass
  - Technology is ever changing
- There are very few studies that attempt draw from legislation across all 50 states.

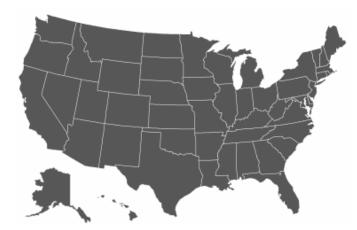




# **Our Goal**

Provide the state of Indiana with a searchable database of legislation

- This could serve as a baseline when considering new policies.
- It could be used to identify major trends.





# What We Did

- Researched and classified 500 bills related to cybersecurity
  - 454 State
  - 46 Federal
- Organized bills with metadata into a searchable database (Airtable)
- Performed preliminary analysis of the data



### **Policy Classification**

- Government Service
- Finance
- Defense
- Energy
- Water/Wastewater
- Communications
- Healthcare
- Elections
- Economic Development
- Workforce Development

- Personal Identifiable
   Information
- Public Awareness and Training
- Education
- Emergency Services and Exercise
- Cyber Sharing
- Cyber Organizations (Center)
- Cyber Pre Thru Post Incident
- Legal/Insurance
- Local Government
- Other critical infrastructure





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### **Organization of Metadata**

- Bill number
- State
- Type of policy
- Type of legislation
- Originator (senate, house, bipartisan)
- Year introduced
- Status

- Link to online source
- Related legislation
- Description
- Political party affiliation
- Bill sponsor
- Link to vote count information



| P  | 🖺 State of Cybersecurity 🔹 |                     |            |          |                                                |                          | HELP ? 🌲                                                                        |
|----|----------------------------|---------------------|------------|----------|------------------------------------------------|--------------------------|---------------------------------------------------------------------------------|
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|    | A Bill Number              | 🗸 🖸 Sta             | e . =      | ž Year 👻 | $\equiv \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \$ | · Ξ‡ State Legislature → | $\equiv \ensuremath{\bar{\ast}}\xspace$ Type of Policy (Select all that apply.) |
| 1  | HB23                       | Alask               | a (        | 2011     | Bill                                           | House                    | Legal/Insurance                                                                 |
| 2  | HB144                      | Alask               |            | 2013     | Bill                                           | House                    | Personal Identifiable Information                                               |
| 3  | SB210                      | Alask               | 3          | 2014     | Bill                                           | Senate                   | Education Personal Identifiable Information                                     |
| 4  | HB85                       | Alask               | 3          | 2015     | Bill                                           | House                    | Education Personal Identifiable Information                                     |
| 5  | HB96                       | Alask               | 3          | 2015     | Bill                                           | House                    | Personal Identifiable Information                                               |
| б  | SB3                        | Alask               | 3          | 2015     | Bill                                           | Senate                   | Education Personal Identifiable Information                                     |
| 7  | HB2577                     | Arizo               | na         | 2013     | Bill                                           | House                    | Cyber Sharing Energy Other Critical Infrastructure                              |
| 8  | HB2469                     | Arizo               | па         | 2013     | Bill                                           | House                    | Personal Identifiable Information                                               |
| 9  | HB2647                     | Arizo               | па         | 2015     | Bill                                           | House                    | Cyber Organizations Government Service                                          |
| 10 | SB1464                     | Arizo               | па         | 2015     | Bill                                           | Senate                   | Education Personal Identifiable Information                                     |
| 11 | HB2046                     | Arizo               | na         | 2016     | Bill                                           | House                    | Cyber Pre Through Post Incident                                                 |
| 12 | SB1352                     | Arizo               | na         | 2016     | Bill                                           | Senate                   | Legal/Insurance                                                                 |
| 13 | HB2582                     | Arizo               | па         | 2016     | Bill                                           | Senate                   | Education Personal Identifiable Information                                     |
| 14 | SB1389                     | Arizo               | па         | 2016     | Bill                                           | Senate                   | Education Personal Identifiable Information                                     |
| 15 | HB1691                     | Arkar               | sas        | 2015     | Bill                                           | House                    | Cyber Sharing Personal Identifiable Information                                 |



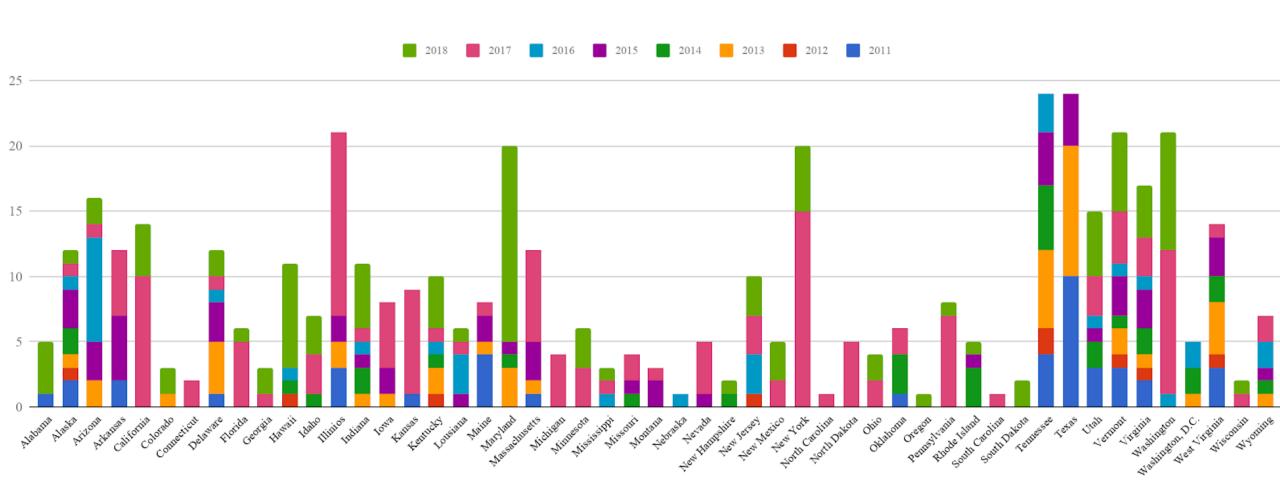
## Analysis

- All 50 states were examined.
  - Most states only had between 1-10 total policies.
  - Only 9 states had 20 or more.
- Dates were important.
  - States that introduced policies before 2016 Not active.
  - States that introduced polices after 2016 Active.
- Active states

Illinois, Maryland, New York, and Vermont



#### Dates States Were Actively Passing Legislation

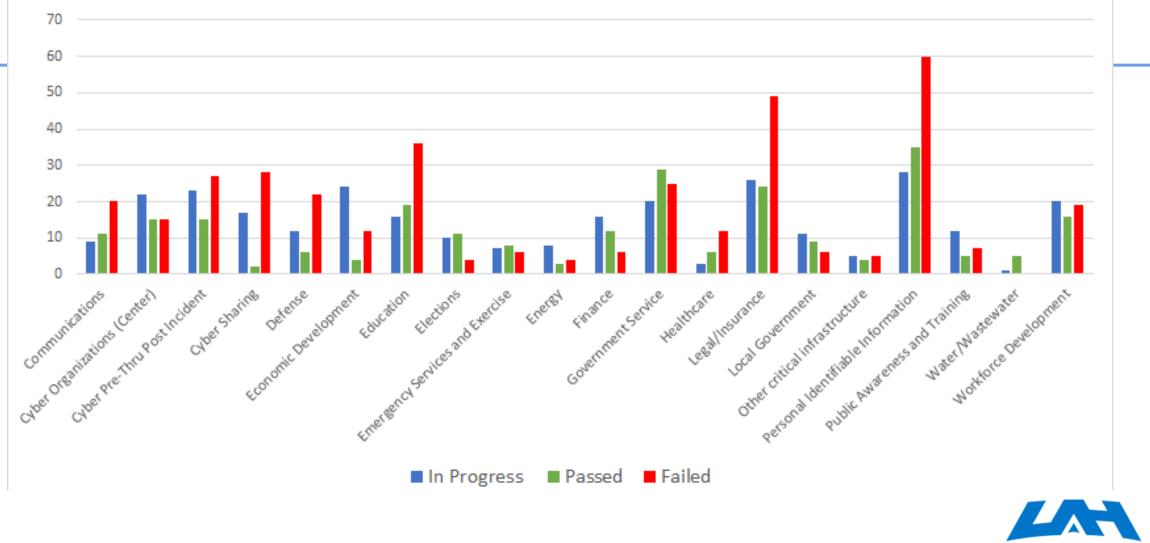


### Analysis Cont.

- Failed Legislation
  - Larger percentage of failed bills than passed bills
  - highest failure rates
    highest success rates
- Vetoed Bills
  - Only 5 bills were vetoed



#### Status of Policy Types



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### **Analysis continued**

#### Influence of Federal Legislation

- Federal legislation is focused on
  - Defense
  - Cyber Pre-through-Post Incident
  - Cyber sharing
- State legislation is focused on:
  - Education
  - Personally Identifiable Information
  - Government Services
  - Legal





#### 📕 Federal: 2011 - 2014 📕 Federal: 2015 - 2018 📕 State: 2011 - 2014 📕 State: 2015 - 2018 80.00% 60.00% 40.00% 20.00% Energency services and Exercises 0.00% cyber Pre Through Post Incident Personal dentiabe Information Economic Development Government Services other offical Infrastructure c Awareness and Training communications oyber organizations orbershalling Workforce Development Legalinsuarce LocalGovernment WaterWastervater Finance Healthcare Energy THE UNIVERSITY OF ALABAMA IN HUNTSVILLE CENTER FOR CYBERSECURITY RESEARCH AND EDUCATION

#### Categories as a Percent of Federal and State Policies Surveyed

#### **Analysis continued**

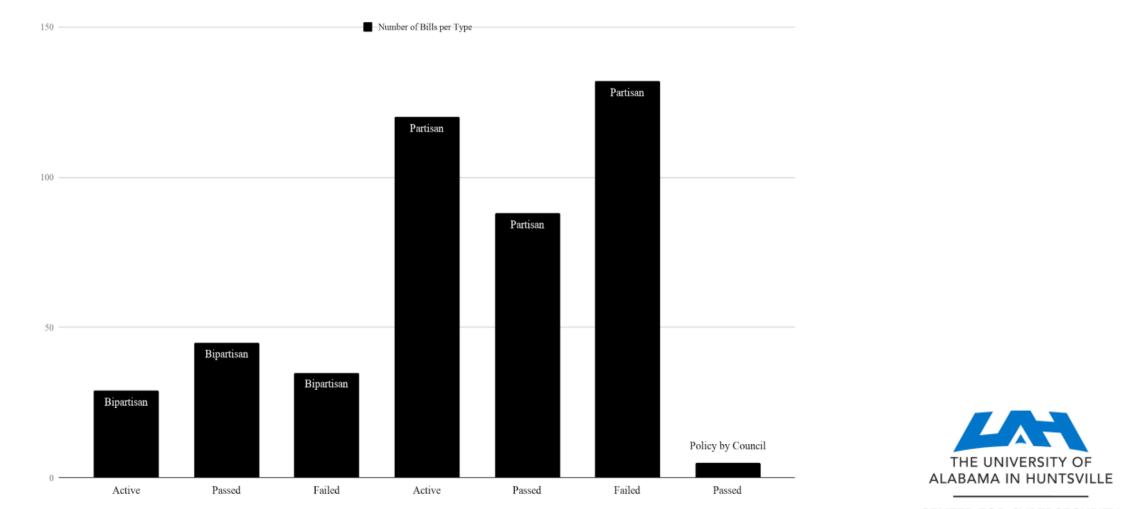
**Bipartisan Policy Creation** 

- Bipartisan attempts 56% success
- Partisan attempts 40 % success





#### **Bipartisan vs Partisan Efforts**



#### Challenges

Varying terminology

• Verbiage varied from state to state.

Determining relevance

• Desired topics were buried in unrelated content.

Tracing a bill's origin

Originates in house or senate



### Conclusion

#### State bills

- 305 total
- 138 Passed
- 167 Failed
- Success rate of 45%

Bipartisan success

- Bipartisan bills had 56% success
- Partisan bills had 40% success

States leading the way in Cybersecurity

- Vermont
- Virginia



#### Future Work

- Correlation between legislation and cyber events
   Example: Equifax breach
- Measure impact of key successful legislation over time Did the legislation have the intended effect?
- Examination of failed legislation

Learn from mistakes of the past





