Building Bridges

Between Election Officials and the Information Security Communities

August 8, 2018 // BSides LV 2018
From federal data breaches to foreign governments phishing political campaigns to malware shutting down city services, our nation is under attack.

*You can help* – *starting right in your own community.*
Speakers

Maurice Turner
Senior Technologist,
Center for Democracy &
Technology

David Forscey
Policy Analyst,
National Governors
Association
Speakers

Maurice Turner
Senior Technologist,
Center for Democracy & Technology

At CDT, Turner focuses on the Election Security and Privacy Project identifying and updating election cybersecurity practices and infrastructure, and working through potential remedies.

- Bachelor’s in political science from Cal State Fullerton
- Master’s in public administration from the University of Southern California – focusing on emerging communication technologies, privacy, and civic engagement
- Graduate certificate in cybersecurity strategy from Georgetown University

Nearly a decade of municipal management experience is complemented by numerous private sector technology positions, fellowships, and internships. As a TechCongress Congressional Innovation Fellow in 2017, he served the Republican staff of the Senate Homeland Security and Governmental Affairs Committee (reporting to Chairman Sen. Ron Johnson) supporting on cybersecurity issues. His previous employers include the City of Newport Beach, EarthLink Municipal Networks, Center for Democracy and Technology, Coro Foundation, United Medical Center Hospital, U.S. Department of Transportation, and Apple. Turner has been a technology enthusiast for over 30 years and is committed to leveraging new technologies to increase government effectiveness and community engagement.

David Forscey
Policy Analyst,
National Governors Association

David is a policy analyst with the National Governors Association’s Center for Best Practices, where he helps governors’ offices and state agencies craft cybersecurity policy.

Previously, he worked on surveillance reform and encryption policy as National Security Fellow at Third Way.

He has a law degree from Georgetown University Law Center and graduated magna cum laude from the University of Virginia.
Organizations

- Preserve the unique nature of the Internet
- Enhance freedom of expression globally
- Protect our fundamental right to privacy
- Limit government surveillance
- Define the boundaries of technology in our daily lives
- Think Tank /Consultancy
- Governor/state focus
- Non-profit
- Non-partisan
What Are We Going To Explore

- Election basics & history
- State of election security
- How you can help
- Impacting policy
Article 1 Section 4. The Times, Places and Manner of holding Elections for Senators and Representatives, shall be prescribed in each State by the Legislature thereof.
Unique Aspects of Elections in US
Unique Aspects of Elections in US

**Preelection Activities**
- Voter registration is handled:
  - In-Person
  - Mail
  - On-Line

**Election Day Activities**
- Voters cast ballots via:
  - Direct Record Electronic (DRE) voting machine
  - Optical Scan Voting Ballots
  - Paper Ballots
- Votes counted and tallied by:
  - DRE machines
  - Optical Scan
  - Hand Counting

**Postelection Activities**
- Election Results Talled:
  - Released on public facing web-pages
  - States conduct postelection canvass process, including post election audits, prior to vote certification
- Results submitted on Election Night via:
  - Email
  - Fax
  - Electronically
  - Phone
Unique Aspects of Elections in US

$3.3 billion
Unique Aspects of Elections in US

> *From:* Google <no-reply@accounts.googlemail.com>
> *Date:* March 19, 2016 at 4:34:30 AM EDT
> *To:* John_Costa@gmail.com
> *Subject:* *Someone has your password*
>
> Someone has your password
> Hi John
>
> Someone just used your password to try to sign in to your Google account.
>
> Details:
> Saturday, 19 March, 8:34:30 UTC
> IP Address: 134.249.139.239
> Location: Ukraine

$380 million
Current State of Security of Election Systems

B@d P@ssw0rd
Voting-machine makers are already worried about Defcon

Hackers break into voting machines within 2 hours at Defcon

Defcon hackers find it’s very easy to break voting machines

It took DEF CON hackers minutes to pwn these US voting machines

We’ve got three years to shore up election security
Current State of Security of Election Systems

Warning: Critical Infrastructure

Coordinated national effort to manage risks... and enhance the security and resilience
States Are The Keystone In Cybersecurity

- The Consequence Managers
- Local <-> State <-> Federal
- Much more than elections...
  - PII & critical services
  - Regulation
  - Education/workforce
NGA Cybersecurity Program

- Governance, strategy, & people
- On-the-ground assistance
- Building bridges between experts
2018 Transition = Opportunity!
The Need for Help

THREATS TO ELECTION SYSTEMS
The Need for Help

MISINFORMATION
The Need for Help

MISINFORMATION

DISRUPTION
The Need for Help

MISINFORMATION

DISRUPTION

CHANGING VOTES
Who Wants to Interfere with Elections

Foreign Actors
Who Wants to Interfere with Elections

- Foreign Actors
- Organized Criminal Groups
Who Wants to Interfere with Elections

- Foreign Actors
- Organized Criminal Groups
- Pranksters
Who Wants to Interfere with Elections

- Foreign Actors
- Organized Criminal Groups
- Political Activists
- Pranksters
Who Wants to Interfere with Elections

- Foreign Actors
- Organized Criminal Groups
- Unintentional Disruptors
- Pranksters
- Political Activists
Who Wants to Interfere with Elections

- Foreign Actors
- Organized Criminal Groups
- Pranksters
- Political Activists
- Unintentional Disruptors
How YOU can Help
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States And Localities Need Help

- They can’t find the talent
- Constant firefighting undermines planning
- No one is ready for the worst
How Can Volunteers Get Involved?

- Delaware Vulnerability Disclosure Policy
- California GOVOPS Civic Advisory Council
- Michigan Civilian Cyber Corps
- Wisconsin Cyber Response Teams
What Do State Leaders Think?

- They need background checks
- Touchy about highly regulated data
- Most states lack active programs

BUT THE INTEREST IS THERE
Online state voter registration database linked to all counties:

Register to Vote - Eligibility

By checking the boxes below, I swear or affirm that these are true statements:

☐ I am a citizen of the United States of America.
☐ I will be 18 years of age or older on or before the next Election.
☐ I am a resident of Vermont.

DO NOT continue if you cannot swear or affirm to all three of the questions above. You are not qualified to vote in Vermont.

5 BACK 6 CONTINUE TO VOTER REGISTRATION

Once complete, you may print a copy of your application for your records. If, however, you prefer to mail-in your application, print a blank registration form HERE.
Online state voter registration database linked to all counties:

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Scenarios - Think Like an Adversary

Online voter registration database:
OTHER OPTIONS

Online voter registration database:

1. Are you a citizen of the United States of America? Yes No
2. Will you be 18 years of age or before election day? Yes No
3. Are you a resident of Kansas? Yes No

REGISTER TO VOTE OR UPDATE YOUR VOTER REGISTRATION INFORMATION

Welcome
Eligibility
Personal Information
Address
Additional Information
Review
Confirmation

REGISTRATION DEADLINES
You must register or update your voter registration no later than 30 days prior to an election. Upcoming voter registration deadlines:
- July 9, 2018 for the August 7, 2018 Special and Special Congressional General (11th Congressional District) Election
- October 9, 2018 for the November 6, 2018 General Election
If you register or update your information after the deadline, the change will apply for the next election.

Vermont Voter Application (pdf copy for submission to Town or City Clerk)

Beginning January 1, 2017, eligible persons may register to vote on any day up to and including the day of the election.

Registration is available during all normal business hours of your town or city clerk's office on days preceding the election and during polling hours on Election Day, 17 V.S.A. § 2144.

You may also register to vote online.

The Elections Division will forward applications (and early or absentee ballot requests) to the appropriate town or city clerk for action, but we recommend submitting applications directly to your town or city clerk.

For contact information for your town clerk, view our Guide to Vermont's Town Clerks, Treasurers & County Clerks.
Uploading DRE configurations via Wi-Fi:
Scenarios - Think Like an Defender

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Scenarios - Think Like an Adversary

Self-hosted reporting website that auto-tweets results:

2016 Presidential General Election
November 8, 2016
Official Results for Election

List of Contests:
- Registration and Turnout
- PRESIDENT AND VICE PRESIDENT
- UNITED STATES SENATOR
- UNITED STATES REPRESENTATIVE 38th District
- UNITED STATES REPRESENTATIVE 39th District
- UNITED STATES REPRESENTATIVE 40th District
- UNITED STATES REPRESENTATIVE 41st District
- UNITED STATES REPRESENTATIVE 42nd District
- UNITED STATES REPRESENTATIVE 43rd District
- UNITED STATES REPRESENTATIVE 44th District
- UNITED STATES REPRESENTATIVE 45th District
- UNITED STATES REPRESENTATIVE 46th District
- UNITED STATES REPRESENTATIVE 47th District
- UNITED STATES REPRESENTATIVE 48th District
- UNITED STATES REPRESENTATIVE 49th District
- STATE SENATOR
- 70th District

### Registration and Turnout

<table>
<thead>
<tr>
<th></th>
<th>Reg/Turnout</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Registered Voters</td>
<td>1,535,967</td>
<td></td>
</tr>
<tr>
<td>Precinct Registration</td>
<td>1,535,967</td>
<td></td>
</tr>
<tr>
<td>Precinct Ballots Cast</td>
<td>516,801</td>
<td>33.6%</td>
</tr>
<tr>
<td>Early Ballots Cast</td>
<td>27,554</td>
<td>1.8%</td>
</tr>
<tr>
<td>Vote-by-Mail Ballots Cast</td>
<td>695,050</td>
<td>45.3%</td>
</tr>
<tr>
<td>Total Ballots Cast</td>
<td>1,239,405</td>
<td>80.7%</td>
</tr>
</tbody>
</table>

### President and Vice President

<table>
<thead>
<tr>
<th></th>
<th>Vote Count</th>
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</tr>
</thead>
<tbody>
<tr>
<td>HILLARY CLINTON // TIM KAINE (DEM)</td>
<td>609,961</td>
<td>50.9%</td>
</tr>
<tr>
<td>DONALD J. TRUMP // MICHAEL R. PENCE (REP)</td>
<td>567,148</td>
<td>48.5%</td>
</tr>
<tr>
<td>GARY JOHNSON BILL WELD (LIB)</td>
<td>46,128</td>
<td>3.9%</td>
</tr>
<tr>
<td>JILL STEIN AJAMU BARAKA (GRN)</td>
<td>18,068</td>
<td>1.5%</td>
</tr>
<tr>
<td>BERNARD &quot;BERNIE&quot; SANDERS (W)</td>
<td>6,239</td>
<td>0.5%</td>
</tr>
<tr>
<td>EVAN McMULLIN (W)</td>
<td>4,917</td>
<td>0.4%</td>
</tr>
<tr>
<td>GLORIA ESTELA LA RIVA DENNIS J. BANKS (P-F)</td>
<td>4,898</td>
<td>0.4%</td>
</tr>
<tr>
<td>MIKE MATUREN (W)</td>
<td>131</td>
<td>0.0%</td>
</tr>
<tr>
<td>LAURENCE KOTLIKOFF (W)</td>
<td>27</td>
<td>0.0%</td>
</tr>
<tr>
<td>JERRY WHITE (W)</td>
<td>4</td>
<td>0.0%</td>
</tr>
</tbody>
</table>

* Indicates Incumbent Candidate. Any Top
Scenarios - Think Like an Defender

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- UNITED STATES REPRESENTATIVE 46th District
- UNITED STATES REPRESENTATIVE 47th District
- UNITED STATES REPRESENTATIVE 48th District
- UNITED STATES REPRESENTATIVE 49th District
- STATE SENATOR 92nd District

Registration and Turnout
- Completed Precincts: 1008 of 1868
  - Total Registered Voters: 1,535,967
  - Precinct Registration: 1,535,967
  - Precinct Ballots Cast: 516,801 (33.6%)
  - Early Ballots Cast: 27,554 (1.8%)
  - Vote-by-Mail Ballots Cast: 695,050 (45.3%)
  - Total Ballots Cast: 1,239,405 (80.7%)

PRESIDENT AND VICE PRESIDENT
- Completed Precincts: 1008 of 1868
  - Vote Count
  - Percentage
  - HILLARY CLINTON / TIM KAINE (DEM): 609,961 (50.9%)
  - DONALD J. TRUMP / MICHAEL R. PENCE (REP): 567,148 (48.5%)
  - GARY JOHNSON BILL WELD (LIB): 46,128 (3.9%)
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  - BERNARD "BERNIE" SANDERS (W): 6,239 (0.5%)
  - EVAN MCMULLIN (W): 4,917 (0.4%)
  - GLORIA ESTELA LA RIVA DENNIS J. BANKS (P-F): 4,898 (0.4%)
  - MIKE MATUREN (W): 131 (0.0%)
  - LAURENCE KOTLIKOFF (W): 27 (0.0%)
  - JERRY WHITE (W): 4 (0.0%)
  - * Indicates Incumbent Candidate. Fany Top

Current voting totals:
- HILLARY CLINTON // TIM KAINE (DEM) 609,961 50.9%
- DONALD J. TRUMP // MICHAEL R. PENCE (REP) 567,148 48.5%
Benefits of Volunteering

- Build sense of civic engagement
- Ensure smooth operation of election process
- Build your network of local, state, federal infosec community members
InfoSec:

- Reach-out to local election officials to volunteer on election day
- Learn about how elections are conducted in your jurisdiction
- Be upfront about how your skills can be used to help secure elections before election day such as assisting with security audits, testing
Next Steps

State/local officials:

- Identify local infosec community through associations, schools, companies
- Develop a framework for vetting and on-boarding technical volunteers
Impacting Policy Lessons

- Logan Lamb → Major shakeup in Georgia
- Mudge → Politics happens
We’re Here To Help

CDT  CENTER FOR DEMOCRACY & TECHNOLOGY

NGA  NATIONAL GOVERNORS ASSOCIATION
My questions for you:

- Are you interested?
- How ambitious can we be?
- What are the risks?
THANK YOU | CDT.ORG