Our dependence on technology is growing faster than our ability to secure it. While we struggle to secure our organizations, software now permeates every aspect of our lives; in our **cars**, our **bodies**, our **homes**, and our **public infrastructure**.

We've looked for the adults in the room – and one thing is clear.

The Cavalry Isn't Coming

It Falls To Us

I am The Cavalry

We must be ambassadors of our profession
We must be the voice of technical literacy
We must research that which matters
We must collaborate with each other
We must escape the echo chamber
We must amplify our efforts

Our Mission
To ensure technologies with the potential to impact public safety and human life are worthy of our trust.

We Prefer

Collaboration over Solo Action	Progress not Frustration	Preservation before Replacement
Discover iamthecavalry.org	Discuss bit.ly/iamthecavalry	Amplify @iamthecavalry

Medical
http://iamthecavalry.org/medical

Implantable
Telemetry
Imaging
Diagnostic
Radiological

Automotive
http://iamthecavalry.org/automotive

Adaptive Cruise Control
Parking Assist
Remote Assistance
Electronic Braking
Stolen Vehicle Disable
Vehicle Tracking

Home
http://iamthecavalry.org/home

Appliances
Door Locks
Thermostat
HVAC
Security System
Electronics

Public Infrastructure
http://iamthecavalry.org/infrastructure

Aviation & Rail Systems
Public Transport
Airplanes
Traffic Monitoring
Utility Services
Waste & Sewage

You've Been Conscripted
Whatever experience, skill and interest you have, there is a part for you to play in this story. Researchers, writers, speakers, influencers, designers, policy makers, legal minds, compassionate people, doctors, pilots, drivers or simply concerned citizens…whatever we bring fits with what others need. You've now been conscripted to join us. Be an ambassador of your profession. Be a voice of technical literacy. Research areas that matter to human life and public safety. Join forces with others. Raise awareness of the issues and encourage informed decision-making. **The Cavalry is All of Us.**

I am The Cavalry

Amplify
@iamthecavalry

Discuss
bit.ly/iamthecavalry

Discover
iamthecavalry.org

The Cavalry is All of Us

Medical

The healthcare industry has adopted computerized, connected technologies to more rapidly deploy improved medical devices. Over half of the medical devices marketed today operate on software: implantable; diagnostic machines; monitoring devices. These technologies have amazing capabilities to save lives, diagnose quickly and improve quality of life, and therefore **a security failure is a failure to safeguard human life.**

Further Reading

Insulin pumps, medical devices vulnerable to hacking
-USA Today, 2011
Death by defibrillator: FDA called to address hacking risk
-NBC News, 2012
Cheney Reveals Fear of Pacemaker Hack
-ABC News, 2013

Research

Breaking the Human SCADA System
-Jay Radcliffe, Black Hat, 2011
Medical Device Cybersecurity
-Kevin Fu, National Science Foundation, 2012
Medical Devices Hard-Coded Passwords
-Rios & McCorkle, U.S. DHS, 2013

Automotive

Our cars are incorporating digital technologies and ubiquitous communication for both safety and convenience. Automatic parking assist, adaptive cruise control, collision avoidance, stolen vehicle shutdown, remote emergency response and other features make driving easier and safer. Capabilities like these can malfunction or be abused, potentially **subverting driver control or monitor location and conversations**.

Further Reading

Can Your Car Be Hacked?
-Car & Driver, 2011
Jury Finds Toyota Liable in Fatal Wreck in Oklahoma
-NY Times, 2013
Hackers Can Take Over A Car For About $20
-Business Insider, 2014

Research

Experimental Security Analysis of a Modern Automobile
-Karl Koscher, Alexei Czeskis, et. al., IEEE, 2010
Senator asks carmakers about efforts to thwart hackers
-Senator Markey, U.S. Senate, 2013
Adventures in Automotive Networks and Control Units
-Charlie Miller & Chris Velasek, DEF CON, 2013

Our Common Story

Our society is quickly becoming interdependent on software enabled, always-connected devices. As our lifestyles intersect with these technologies, security issues become matters of public safety and human life. Our interdependence on software and connectivity has grown faster than our ability to safeguard these technologies. Our day jobs are colliding with our personal and family lives. No one is rising to meet these challenges. The cavalry isn't coming. We are the domain experts and we are the adults in the room. It falls to us. **We Are The Cavalry**.

The Cavalry is a loosely affiliated group of individuals pulling toward a common goal. We have come together to share ideas, join our resources together and force multiply our efforts. Many of us are from an IT and Information Security background, but others come from all walks of life - doctors, lawyers, parents, teachers, etc. What started as a couple of individuals has cascaded into dozens and then hundreds, through a rolling thunder we are defining our identity.

Our aims are converging upon teaming up outside the echo chamber to do security that matters to public safety and human life. From our cars to medical devices to the Internet of Things and public infrastructure. With development cycles lasting several years, reuse of technology and expected lifetimes of sometimes decades, the decisions made today will affect our grandchildren. We aim for no less than to save lives through security research.

> *"Never doubt that a small group of thoughtful, committed citizens can change the world; indeed, it's the only thing that ever has."* –Margaret Mead

Learn More and Take Action

- Join the discussion on our mailing list and groups.
- Follow and engage our social media accounts.
- Contribute your knowledge to the Wiki.
- Watch and share past talks at our website.

Home

Smart home trends are driving more digital technology into the devices around us. Our appliances, environmental controls, security systems, door locks are all using computing and connectivity to bring more capability and control to our fingertips. Since homeowners aren't experts in technology and security, these technologies **must be more reliable, secure and easy to use than traditional IT systems** have so far been able to achieve.

Further Reading

I Haunted A Complete Stranger's House Via The Internet
-Forbes, 2013
Hackers break into homes -- electronically
-CNN, 2013
Hotel Lock Hack Still Being Used In Burglaries
-Forbes, 2013

Research

Home Automation devices contain multiple vulnerabilities
-Mike Davis, US-CERT, 2014
Home Invasion 2.0
-Crowley, Bryan & Savage, Black Hat USA, 2013
Hacking Home Automation Systems
-Fouladi & Ghanoun, Black Hat USA, 2013

Public Infrastructure

The national and global infrastructure are being transformed by so-called "Smart" technologies which allow our society to be more agile, responsive and efficient. This interconnectedness is incredibly powerful despite the systemic risk of collapse or manipulation that it introduces. This risk must be identified and addressed in a formal and systematic way to **preserve the quality of life for every global citizen**.

Further Reading

Second water utility reportedly hit by hack attack
-The Register, 2011
Hackers Breached Railway Network, Disrupted Service
-Wired, 2012
Dreamliner flight diverted after software problems
-Financial Times, 2014

Research

Hacker + Airplanes = No Good Can Come Of This
-Brad "Renderman" Haines, DEF CON, 2012
A Framework for Aviation Cybersecurity
-AIAA, Decision Paper, 2013