



## DR. SARAH LEWIS CORTES

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Phone: 330-99-CYBER

**Information Security, Privacy, SOC, Audit, Risk, Compliance, GDPR, DR, IAM •  
Investigations, • Executive Leader • Researcher**

Deliver and manage comprehensive cybersecurity and privacy programs from top to bottom. Clients include: Fidelity Management & Research, Fidelity Brokerage, Biogen Idec, Sanofi Genzyme, Harvard University, Boston University, Harvard Law School, Draper Laboratory. Fortune 100 to startups, in regulated and unregulated industries. Services include:

- Security Operations
- GRC- Risk, Compliance & Privacy: SOX, SOC2, PCI DSS, NIST 800-53, GDPR
- IAM- Identity Management, Authentication & Access Management
- Disaster Recovery, Business Continuity, High Availability
- Security Architecture
- PMO

### EDUCATION

Ph.D., Northeastern University 2018  
 College of Computing and Information Science (CCIS),  
 Computer Science, Information Security and Assurance Boston, MA  
 Focus: Anonymous Network Communications, Security, Privacy and Technology Law

Boston University Medical School, Dept of Forensic Sciences, graduate study 2015-16

M.S., Boston University, Computer Science - Information Security 2011

A.B., Harvard University, Languages, Engineering coursework Cambridge, MA

### EXPERIENCE

Inman Technology IT, Head of InfoSec & Privacy Services 2004-Present

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 Draper Laboratory Sanofi Genzyme Biogen Idec  
 Harvard University Boston University

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  - Cybersecurity
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  - Disaster Recovery, Business Continuity, High Availability
  - Security Architecture
  - PMO
- 
- **Implement & Manage Compliance & Privacy programs including SOC2, PCI, Privacy, DSS, SOX, GDPR**
  - **Rapidly implement high-impact security and privacy capabilities and measures after major security incidents, including upgraded application and database authentication and authorization, custom-developed and package, and transmission encryption**
  - **Enabled rapid security and privacy improvement turnaround by delivering compliance assessment with 41 security and control policies, including platform configuration, network security, change control, cryptography, firewalls, information architecture, application and database security development**
  - **Rapidly implemented database logging across thousands of high-risk databases w/in budget**
  - **Ensured closure for hundreds of outstanding audit issues by implementing tools/programs**
  - **Negotiated major equipment and service increases for Disaster Recovery and Business Continuity on vendor contracts at the same price as university was currently paying.**
  - **Confidentially determined CISO and IT security staff competency after major data breach, reported directly to the Board of Directors, enabling existing staff reduction of 20 % and reallocation of resources to higher-impact staff.**

**ALAMEDA COUNTY SHERIFF'S OFFICE** Oakland, CA

2017-Present

- Digital and Multimedia Evidence Processing and Analysis
- Sample tools: Cellebrite, EnCase, FTK, JTAG, Video Analytics
- Postdoctoral Researcher
- Evidence identification, preservation, extraction, and analysis, report preparation
- Hands-on crime scene processing: evidence and onsite extractions, including CCTV
- Software validation testing, Cellebrite Physical Analyzer, UFED Digital Forensics tools
- Criminal cases include: financial crimes, fraud, homicide, sexual assault, CP, robbery, identity theft
- Examine warrants and ensure legal compliance

**PUTNAM INVESTMENTS** Boston, MA and New York

1993-2004

SVP IT Security, Privacy, Audit, Security Operations, IAM & Disaster Recovery

Investment management firm, with over \$400 billion in assets under management.

Sr Vice President, IT Security and Privacy Operations, SOC, Security Engineering, Security Incident Management and Response, Disaster Recovery/Continuity, Audits & Client Transmissions (2000-2004)

- **Successfully managed trading, pricing and other critical system failovers on September 11, 2001. Ran the technical command center coordinating senior management communications and technical recovery staff**
- **Delivered quality products and stable systems while coordinating over 50 audits per year by outside audit firms, regulatory agencies and clients, 14 major DR tests per year, and thousands of security activities. Worked closely with CIO and CFO to advise on control environment. Worked with senior staff at audit firms, regulatory agencies and clients' auditors to ensure smooth, effective audits: PCI, SOC2, Privacy, SOX, GLB**
- **Developed and implemented multi-platform disaster recovery and site-to-site recovery capability. Supervised multiple recovery tests across all platforms and business areas simultaneously.**
- **In order to protect company from escalating core systems management software costs by current vendors, utilized in-house resources with IBM consulting resulting in \$4M cost avoidance over seven years. Completed conversions in record time (six months), on budget.**
- **Migrated 4,000 client transmissions for 500+ clients onto secure encryption technology.**  
Vice President, Investment Trading and Analytics Systems
- **Enabled capacity expansion from \$200b to \$400b in assets under management without commensurate expenditures through leading large developer teams to port existing systems applications to more robust platforms.**

## SAMPLE PUBLICATIONS

Sarah Lewis Cortes, [\*Darknet Investigation and Forensic Techniques\*](#). In Proceedings of the American Academy of Forensic Sciences (AAFS), Seattle. v. 24, 2018.

Sarah Lewis Cortes, Darknet Correlations for Data Breach Early Detection and Prevention, Proceedings of the [2018 IEEE International Symposium on Technologies for Homeland Security \(HST18\)](#) (submitted).

Sarah Cortes, [\*MLAT World Treaty Cartel Internet Overlay for Digital Traffic Analytics\*](#) for [MLAT.is](#), Proc. [2017 IEEE International Symposium on Technologies for Homeland Security \(HST 17\)](#), 2017.

Sarah Cortes, [\*Cyberterrorism\*](#). In [The SAGE Encyclopedia of War: Social Science Perspectives](#), Ed. Paul Joseph (2017) DOI: <http://dx.doi.org/10.4135/9781483359878.n174>.

Sarah Cortes, [\*Legalizing Domestic Surveillance: The Role of Mutual Legal Assistance Treaties in De-anonymizing TorBrowser Technology\*](#). Richmond Journal of Law and Technology, Vol. 22 #2 (December 2015), pp. 1-99. <http://jolt.richmond.edu/2015/12/05/v22i1article2>.

[\*20,000 in League Under the Sea. Anonymous Communication, Trust, MLATs, and Undersea Cables\*](#), (with Paul Syverson, Aaron Jaggard, Aaron Johnson (US Naval Research Laboratory) and Joan Feigenbaum (Yale University)), [Proceedings on Privacy Enhancing Technologies \(PETS-9th International Symposium\)](#). Volume 1, Issue 1, Pages 4–24, April 2015.

Sarah Cortes, Rebecca Herold, Gal Shpantzer, Chris Veltsos, “*Chapter 3: Legal Frameworks for Smart Grid Privacy*,” (with the Smart Grid Interoperability Panel Cyber Security Working Group (CSWG)) [NIST: NISTIR 7628 2010 Guidelines for Smart Grid Cyber Security: Vol. 2, Privacy and the Smart Grid](#), 2010, pp. 7-15 (pp. 323-331), 2014 update, pp. 8-21 (pp. 304-317).

## PROFESSIONAL ACTIVITIES

<a href="#">High Technology Crime Investigation Association (HTCIA)</a>	2017-Present
<a href="#">American Academy of Forensic Sciences (AAFS)</a>	2017-Present
<a href="#">IEEE P1912 – Institute of Electrical and Electronics Engineers</a>	2014-Present
<a href="#">National Institute for Science and Technology (NIST) SGIP-CSWG: Smart Grid Interoperability Panel, Cyber Security Working Group</a>	2009-2016

## LEGISLATIVE TESTIMONY

Testimony before the Massachusetts Legislature on [Data Breach Laws](#), including [Massachusetts General Law \(MGL\) Chapter 93H](#) and its regulations, [201 CMR 17.00](#)

Testimony before the Massachusetts [Office of Consumer Affairs & Business Regulation \(OCABR\)](#) on [Data Breach Laws](#), including [Massachusetts General Law \(MGL\) Chapter 93H](#) and its regulations, [201 CMR 17.00](#)

## SAMPLE RECENT INVITED TALKS AND SPEAKING ENGAGEMENTS

2017: Dark Networks, [Santa Clara University](#), Computer Engineering Dept, Santa Clara, CA  
[Darknet Cryptography](#), at [City College of San Francisco](#), in [CNIT 141: Cryptography for Computer Networks](#), guest lecturer  
[GDPR Enforcement and the Darknet](#), at [ISACA Silicon Valley Conference](#), Santa Clara, CA  
[GDPR and Breaches, Early Detection on the Darknet](#), at [ISACA San Francisco Conference](#)  
[Darknet Investigations](#), at [University of Portsmouth School of Computing](#), UK  
[Darknet Investigations](#), at [High Technology Crime Investigation Association \(HTCIA\), International Conference](#), Anaheim, CA  
Protecting the Grid from Cyber Threats Working Group, Pentagon City, Lexington Institute;  
Capitol Hill Forum, [Lexington Institute](#), SmartGrid Cybersecurity, Dirksen Senate Bldg;  
Darknet Investigations, [High Technology Crime Investigation Association \(HTCIA\), International Conference](#)

2016: [Generally Accepted Privacy Principles \(GAPP\)](#): invited speaker to [North America Computer Audit & Control Association Symposium, NACACS15](#), Orlando, Florida

2015: [Society for Worldwide Interbank Financial Telecommunication \(SWIFT\) Institute: Cybersecurity in the Financial Services Industry](#), University of Delaware  
[American Accounting Association Transformative Technologies Workshop](#), Chicago, IL

## HONORS & AWARDS

2013: First Prize, [World Bank Hack-a-Thon Team](#), Washington DC  
First Prize for team development of an application, [fuerza.is](#), to help fight domestic violence