



STEVENS
INSTITUTE *of* TECHNOLOGY
THE INNOVATION UNIVERSITY®

GIUSEPPE ATENIESE — FARBER CHAIR AND CS DEPT CHAIR

CYBERSECURITY @ STEVENS

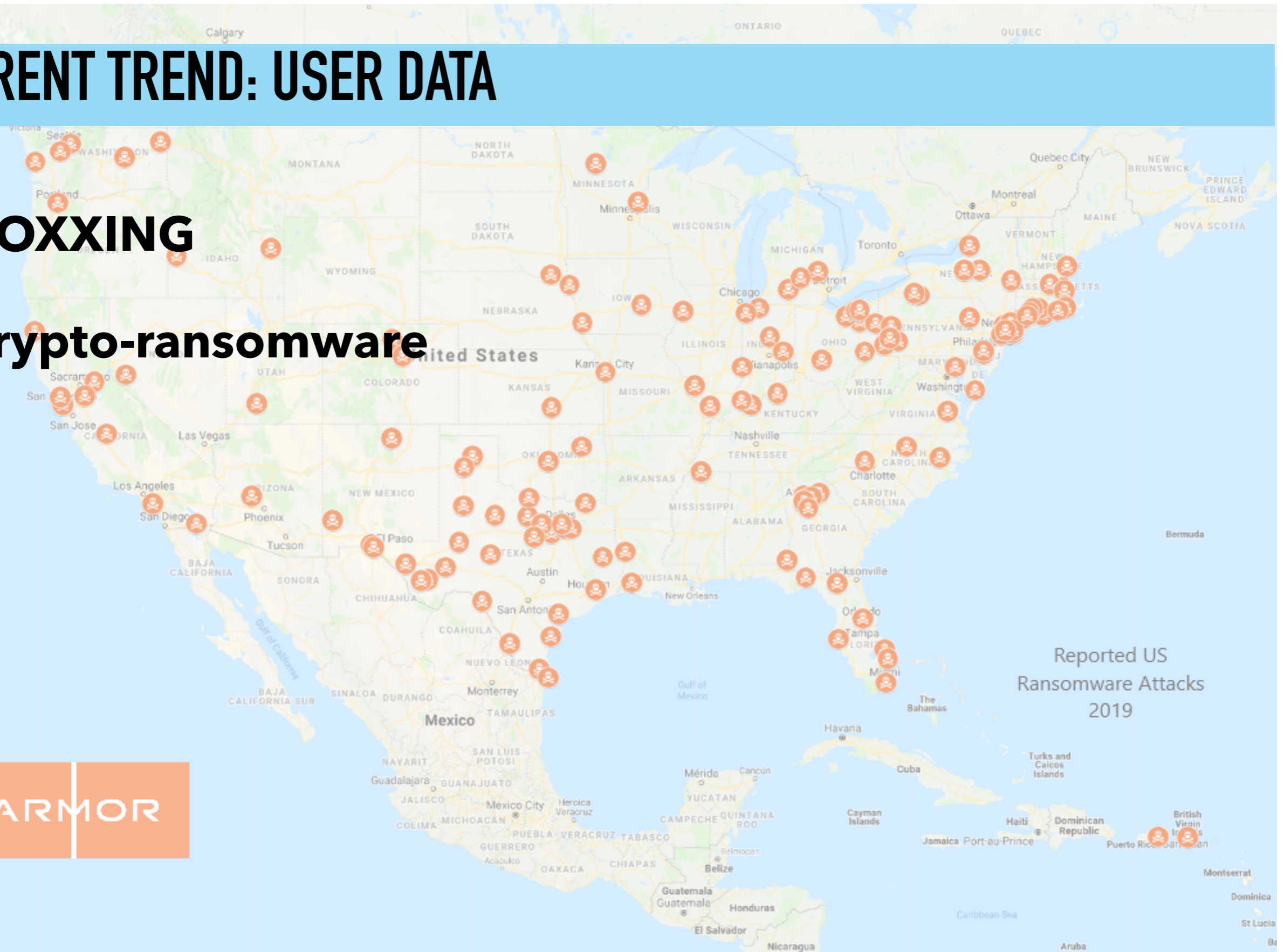
THE WORLD IS A DANGEROUS AND COSTLY PLACE

- ▶ According to insurance company Lloyd's, cyberattacks cost businesses \$400 billion a year
- ▶ A 2019 survey by the Ponemon Institute found that cybersecurity tools cost the average American firm \$18.4 million per year
- ▶ Market research firm Gartner estimates that by 2022, companies around the world will spend around \$170 billion on cybersecurity

CURRENT TREND: USER DATA

▶ **DOXXING**

▶ **Crypto-ransomware**



Reported US Ransomware Attacks 2019



WHAT ARE WE DOING?

- ▶ Stevens is recognized by the National Security Agency as a Center of Academic Excellence in Information Assurance Research and Education
- ▶ Stevens plays a major role in Security thanks to the Center for the Advancement of Secure Systems and Information Assurance (CASSIA)
- ▶ In development: Executive Master in Cybersecurity (CS & SoB)
- ▶ Top-notch faculty members and students working on cutting-edge security solutions

CROSS-DISCIPLINARY CYBERSECURITY RESEARCH

- ▶ Cryptography (CS, PHY, MATH, ECE)
- ▶ Systems Security (SSE, CS, ECE)
- ▶ Formal Verification (CS)
- ▶ AI and Security (CS, ECE, SoB)
- ▶ Blockchain (SoB, CS)

FUNDING AGENCIES AND CORPORATE ENTITIES

- ▶ **Current:** National Science Foundation (NSF), the Office of Naval Research (ONR), the Defense Advanced Research Projects Agency (DARPA), the Department of Homeland Security, the National Security Agency (NSA)

Accenture, Amazon, Google, IBM, Microsoft (faculty awards)

- ▶ **Early discussion:** Department of Energy (submitted), IARPA, Picatinny Arsenal Army Base

- ▶ **Potential:** The whole nine yards (we are in NYC!)

HOW DO WE COMPARE?

- ▶ JHU Information Security Institute, CMU CyLab, Maryland Cybersecurity Center (MC2), etc.
- ▶ Student centrality and superior educational programs (we do well in competitions)
- ▶ Top-notch faculty in all areas of cybersecurity across Stevens
- ▶ But:
 - ▶ No partnerships/corporate program
 - ▶ No structure for research and outreach

SUMMARY

- ▶ Stevens is among the top institutions in the country for cybersecurity research and education
- ▶ Stevens invested early and attracted top scientists
- ▶ Large grants and university-wide initiatives
- ▶ Current synergies with the military, healthcare and financial businesses
- ▶ Strategic direction: Trustworthy AI, Stevens Advanced SOC

THANK YOU



STEVENS
INSTITUTE *of* TECHNOLOGY
THE INNOVATION UNIVERSITY®