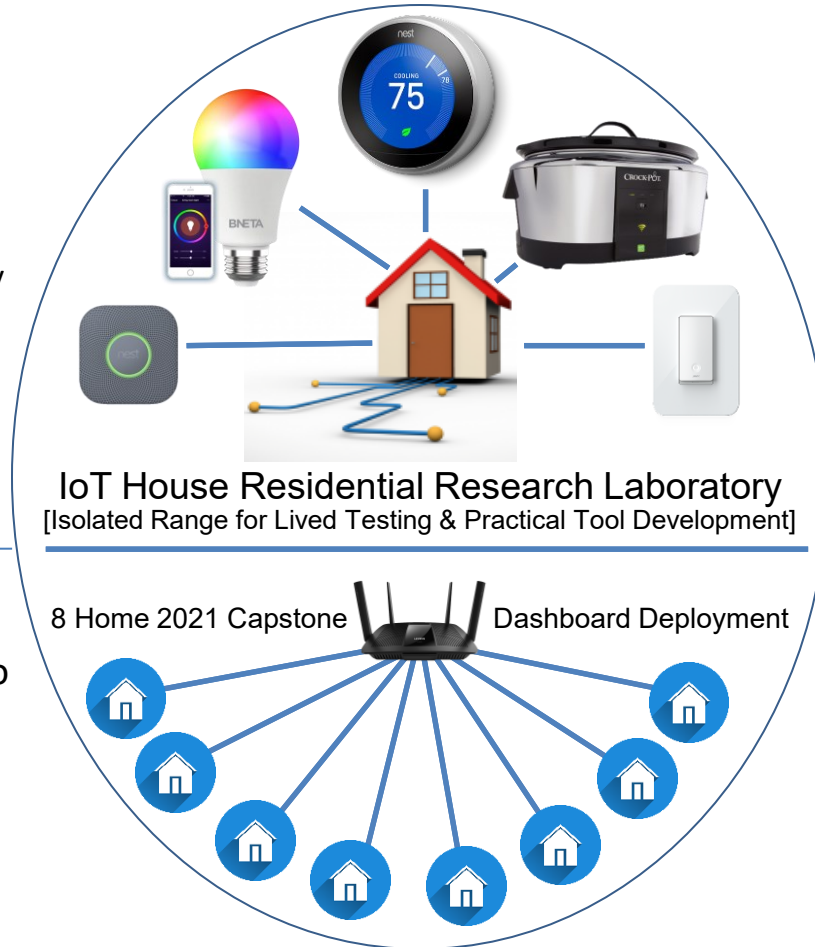


TWC: Large: Collaborative: Living in the Internet of Things

Challenge:

- IoT devices interact with people in ways that conventional computers do not
- IoT devices are used by many stakeholders with different computing backgrounds
- Challenge: Develop foundations to provide humans with security and privacy in an IoT-enabled world



Solution:

- Significant user studies to understand key risks for different populations, as well as key opportunities
- Develop technical defenses for mitigating harms

Lived Laboratory Formative & Cumulative:

Technical and human testing resulted in zero-day device discovery, human testing results, student design & software development leading to the deployment of and dashboard advancing SBOM, MUDs, and fingerprinting in a practical applications in 8 residential user homes

Scientific Impact:

- The computational world is changing as devices permeate our environments in new ways
- This work provides a foundation for security and privacy for the next 20 years by contributing to the foundation of knowledge of
 - People's concerns and the risks they may face
 - The technical risks implied by present and future technologies
 - Defenses to mitigate these risks

Broader Impact and Broader Participation:

- Societal impact: Contributing to the foundations for protecting stakeholder security and privacy in an IoT world
- 25 REUs, 11 DEI Pre-College STEM Mentees, 7 Capstone, 6 Graduate Internships
- 18 Public speaking events, 2 workshops, 3 hackathons K12 Cyber CTF Game Fielded

NSF Award

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