Tangible Privacy: User-Centric Sensor Designs for Assured Privacy
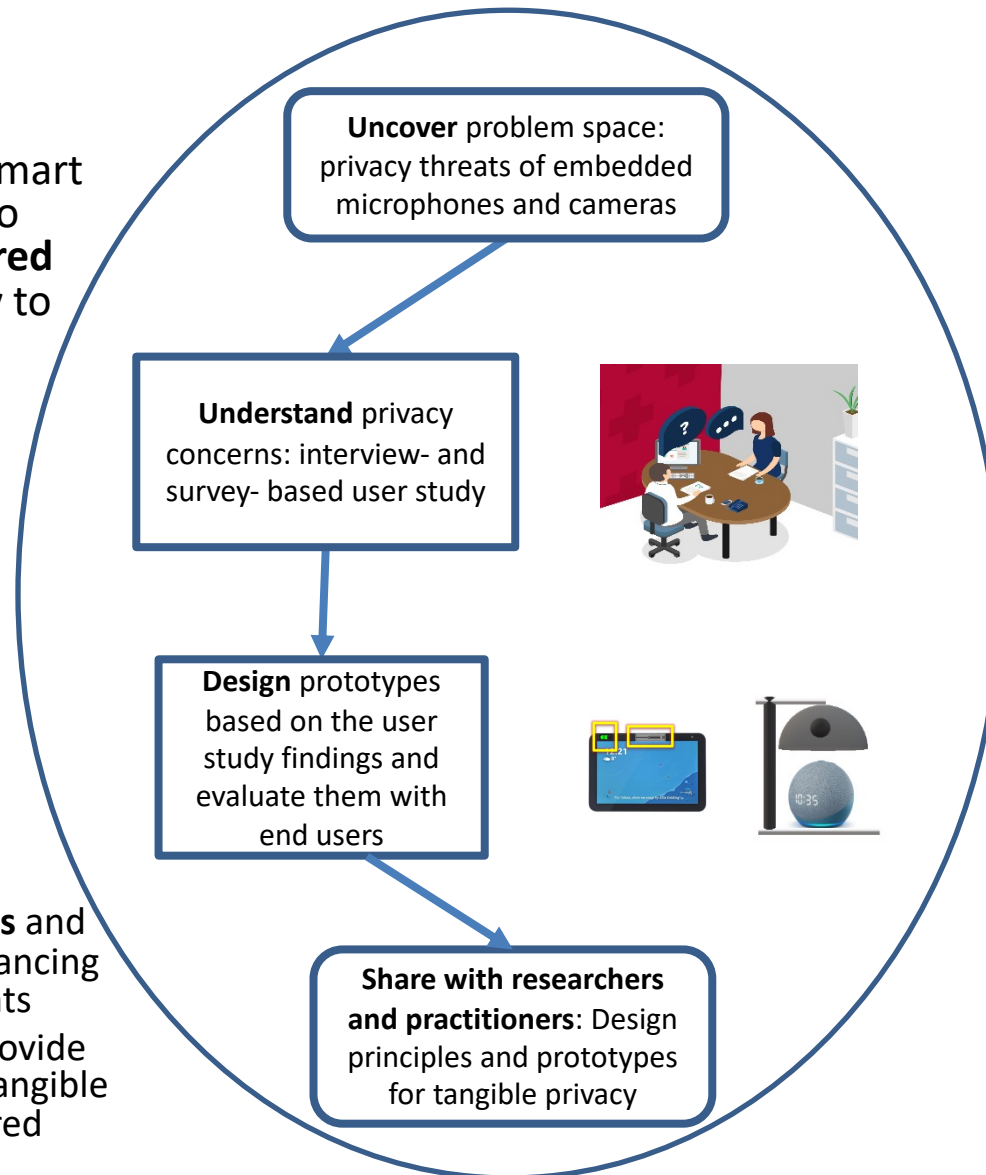
Challenge:

- How to design smart device sensors to provide an **assured sense of privacy** to users

Solution:

- Understand users' privacy **perceptions** and derive privacy enhancing **design** requirements
- Devices need to provide **tangible privacy**: tangible controls with assured feedback

Uncover problem space: privacy threats of embedded microphones and cameras

Understand privacy concerns: interview- and survey- based user study

Design prototypes based on the user study findings and evaluate them with end users

Share with researchers and practitioners: Design principles and prototypes for tangible privacy

Designing for Tangible Privacy

Scientific Impact:

- Emphasizing the need of using hardware-based controls to protect user privacy (CSCW '20)
- Providing research community with design principles and prototypes for tangible privacy (CSCW '22)
- Technical approaches for 'masking' microphones (PoPETs '21)

Broader Impact and Broader Participation:

- Privacy enhanced designs for **ubiquitous** IoT devices
- **Design principles** for industry
- **REU** research experiences, **URM** DoD placement

Image source: ampla-edu.com