Daniela Oliveira
Associate Professor
ECE
University of Florida

daniela@ece.ufl.edu
http://www.daniela.ece.ufl.edu/Home.html

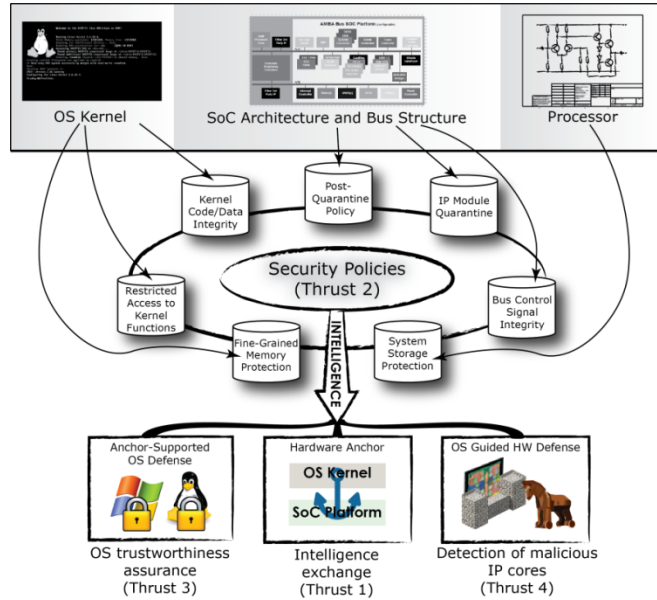**PhD University of California Davis, 2010**

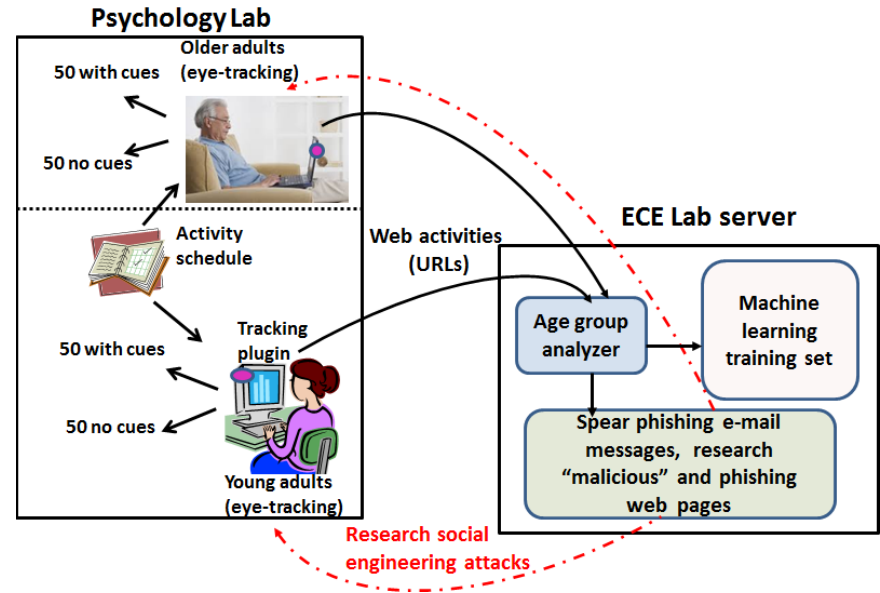**Research Highlights**

NSF CAREER 2012

PECASE 2012

Organizer of NAE Frontier of Engineers Symposium (FOE) and Cyber Security Panel at FOE - 2015

A Cross Boundary System-on-Chip Architecture with Flexible Security

OS Kernel • SoC Architecture and Bus Structure • Processor

Kernel Code/Data Integrity • Post-Quarantine Policy • IP Module Quarantine

Restricted Access to Kernel Functions • Security Policies (Thrust 2) • Bus Control Signal Integrity

Fine-Grained Memory Protection • System Storage Protection

INTELLIGENCE

Anchor-Supported OS Defense — OS trustworthiness assurance (Thrust 3)

Hardware Anchor — OS Kernel — SoC Platform — Intelligence exchange (Thrust 1)

OS Guided HW Defense — Detection of malicious IP cores (Thrust 4)

Age-Targeted Automatic Cueing Against Social Engineering Attacks

Psychology Lab

Older adults (eye-tracking)
50 with cues
50 no cues
Activity schedule

Tracking plugin
50 with cues
50 no cues
Young adults (eye-tracking)

Web activities (URLs)

ECE Lab server
Age group analyzer
Machine learning training set
Spear phishing e-mail messages, research "malicious" and phishing web pages

Research social engineering attacks

Capturing, Understanding and Addressing Blind Spots in APIs

Vulnerability database /bug tracker

Puzzles

```
urllib.urlopen
('https://python.org/')
```
Python SSL

Recruited developers

Blind spot understanding

OSVDB — Search OSVDB — Browse
Alter Search

ID	Disc Date	Title
98429	2013-10-12	D-Link DIR-100 / Planex BRL-04U
98381	2013-10-11	Bilboplanet auth.php Multiple Par
98382	2013-10-11	Bilboplanet signup.php Multiple P
98352	2013-10-11	Cart66 Plugin for WordPress adm
98353	2013-10-11	Cart66 Plugin for WordPress adm
98344	2013-10-11	Claroline index.php coursesearch
98345	2013-10-11	Claroline auth/inscription.php Ref

...

```
char buff[4];
strcpy(buff,"largeString");
```
Buffer overflow

Online session

Automated tools
Checklists/Guidelines
Educational materials