

# Secure and Usable Requirements Engineering

Jose Romero-Mariona

[jromerom@uci.edu](mailto:jromerom@uci.edu)

Department of Informatics

Donald Bren School of Information and Computer Sciences  
University of California, Irvine



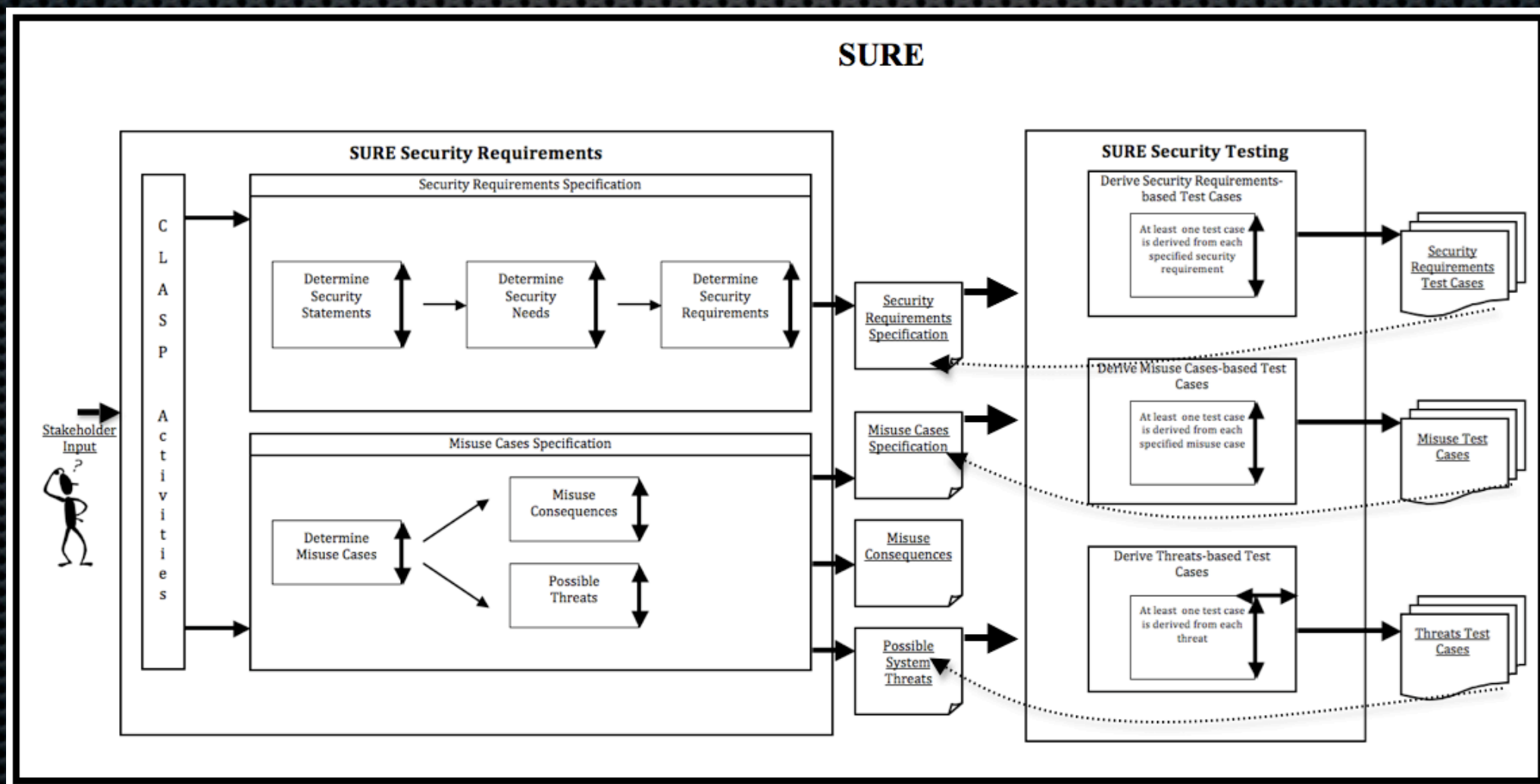
# Motivation & Background

- ✦ Security risks are increasingly more frequent, widespread, and volatile
- ✦ Often, the need for security is realized too late in software development
- ✦ Traditional Requirements Engineering (RE) approaches are not well suited for security-focused systems
- ✦ Literature survey Results highlights:
  - ✦ Need for a SRE approach that provides **Later Stages Support**
  - ✦ Current approaches lack meaningful **testing support**



# SURE Technique

- ✦ Project plans
- ✦ Security requirements specifications
- ✦ Testing artifacts





# ASSURE

- ✦ Automated Support for Secure and Usable Requirements Engineering
- ✦ Implements the SURE technique
- ✦ Web-based system that manages,
  - ✦ Users
  - ✦ Projects
  - ✦ Requirements artifacts
  - ✦ Testing artifacts
  - ✦ Development progress



# ASSURE

[HOME](#) [PROJECTS](#) [USERS](#) [HELP](#) [CONTACT](#) [LOGOUT](#)

**USER: VIRJOSE**

**New Project**

▼ **Proj1**

Show Project

Edit Project

Security Words

Show CLASP Activities

Requirements

Misuse Cases

Testing

▼ **Proj2**

Show Project

Edit Project

Security Words

Show CLASP Activities


Requirements

Misuse Cases

Testing

REQUIREMENTS

TESTING

 **Proj2**

Project Requirements - Full View

Add Security Statement

[E-mail notification]

Add Security Need

[Secure channel]

Add Security Requirement

[Secure channel enforcer]

[kjsdf]


Add Security Requirement

[Authorized user checker]

Add Security Need

[Password enforcer]

Add Security Need





# ASSURE- User Analysis

- ✦ Software Developer- Target user
- ✦ Assumptions
  - ✦ Familiar with traditional RE methods like narrative text, shall statements, and use cases
  - ✦ Security specification novice- Some knowledge about specifications in general, but needs support
  - ✦ Familiar with basic security concepts like threats and attacks
  - ✦ Software testing basics- test plan, test cases, etc.



# Thank You

## Secure and Usable Requirements Engineering

Jose Romero-Mariona

[jromerom@uci.edu](mailto:jromerom@uci.edu)

Department of Informatics

Donald Bren School of Information and Computer Sciences

University of California, Irvine