

# What is Security?



# Security vs Safety

- Basic model of safety:
  - *Assets* (things you want to protect)
  - *Threats* (things which could damage your assets)
  - Safety is ensuring *threats* don't damage *assets*

# Safety Scenario

- Climber climbing a rock wall
- Assets?



# Safety Scenario

- Climber climbing a rock wall
- Assets
  - Climber's safety



# Safety Scenario

- Climber climbing a rock wall
- Assets
  - Climber's safety
- Threats?



# Safety Scenario

- Climber climbing a rock wall
- Assets
  - Climber's safety
- Threats
  - Falling
  - Getting hit by falling rock



# Safety Scenario

- Climber climbing a rock wall
- Assets
  - Climber's safety
- Threats
  - Falling
  - Getting hit by falling rock
- Safety measures?



# Safety Scenario

- Climber climbing a rock wall
- Safety measures
  - Harness
  - Rope
  - Helmet





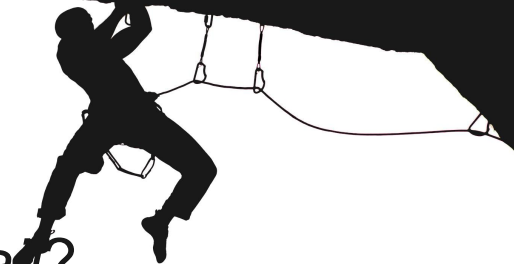
# Safety Scenario

- Climber climbing a rock wall
- Safety measures
  - Harness
  - Rope
  - Helmet
- How well do the safety measures mitigate the threats?



# Safety Scenario

- Climber climbing a rock wall
- Another perspective:
  - How can the safety measures *fail*?
  - How likely are these failures?



# Safety Scenario

- Climber climbing a rock wall
- Introduce a new threat:
  - A person who wants to make the climber fall
  - Whatever safety measures are in place, this person is going to try to make them fail



# Safety Scenario

- Climber climbing a rock wall
- Introduce a new threat:
  - A person who wants to make the climber fall
  - Whatever safety measures are in place, this person is going to try to make them fail
- How could the person make the safety measures fail?



# Safety Scenario

- Climber climbing a rock wall
- How could the person make the safety measures fail?
- What new safety measures should we introduce to deal with this new threat?

# Safety Scenario

- Climber climbing a rock wall
- Why is it so much harder to deal with this new threat?

# Safety Scenario

- Climber climbing a rock wall
- Why is it so much harder to deal with this new threat?
  - The threat is *intelligent*
  - The threat is *motivated*

# Safety Scenario

- Normal threats: likelihood
  - May randomly cause safety measures to fail
  - Less likely to happen => worry about it less
- Intelligent, motivated threats: possibility
  - *Induce* failures
  - Seek out failure points in safety measures, no matter how unlikely it would be by random chance
  - Less likely is of no help; threat will seek it out anyway



# **What is Security?**



# Security vs Safety

Definition for this course:  
Security is like safety, but it  
deals with *intelligent*,  
*motivated* threats

# Security vs Safety

- Basic model of security:
  - *Assets*
  - *Threats (or attackers)*
  - Security is ensuring *threats/attackers* don't damage *assets*