

# Human Factors

Chris May

Technical Director, Cyber Workforce Development

Software Engineering Institute  
Carnegie Mellon University  
Pittsburgh, PA 15213

Copyright 2015 Carnegie Mellon University

This material is based upon work funded and supported by the Department of Defense under Contract No. FA8721-05-C-0003 with Carnegie Mellon University for the operation of the Software Engineering Institute, a federally funded research and development center.

NO WARRANTY. THIS CARNEGIE MELLON UNIVERSITY AND SOFTWARE ENGINEERING INSTITUTE MATERIAL IS FURNISHED ON AN “AS-IS” BASIS. CARNEGIE MELLON UNIVERSITY MAKES NO WARRANTIES OF ANY KIND, EITHER EXPRESSED OR IMPLIED, AS TO ANY MATTER INCLUDING, BUT NOT LIMITED TO, WARRANTY OF FITNESS FOR PURPOSE OR MERCHANTABILITY, EXCLUSIVITY, OR RESULTS OBTAINED FROM USE OF THE MATERIAL. CARNEGIE MELLON UNIVERSITY DOES NOT MAKE ANY WARRANTY OF ANY KIND WITH RESPECT TO FREEDOM FROM PATENT, TRADEMARK, OR COPYRIGHT INFRINGEMENT.

This material has been approved for public release and unlimited distribution except as restricted below.

This material may be reproduced in its entirety, without modification, and freely distributed in written or electronic form without requesting formal permission. Permission is required for any other use. Requests for permission should be directed to the Software Engineering Institute at [permission@sei.cmu.edu](mailto:permission@sei.cmu.edu).

Carnegie Mellon® and CERT® are registered marks of Carnegie Mellon University.

DM-0002852



# Cyber Problems with a Human Focus



- Security is only as good as the weakest link
- People are one of the weakest links
- Projects focus on human elements of cyber

# Human/System Intersection



“Provide innovative human-centric science solutions to enhance the readiness and reduce the cost of our all volunteer force”

- Projects tie in to Reliance 21 Human Systems COI
- People manage, operate, and interact with systems
  - Secure systems and networks
  - Analyze security logs and data
  - Access to sensitive systems and information



# Human/Cyber Issues for the DoD



- need to certify cyber operators as mission ready
- Limited cognitive capacity for analyzing large sets of data
- Leaks of sensitive and classified information



# Unique Positioning

SEI is well poised to address human/cyber issues

- World renowned cyber expertise
- Close relationships with DoD partners

Collaboration with CMU faculty in complimentary fields

- Cognitive psychology
- Machine learning
- Computer vision



# Human Factors Research Projects



## Generalized Automated Cyber-Readiness Evaluator (ACE)

- Rotem Guttman

## Human-Computer Decision Systems in Cybersecurity

- Brian Lindauer

## Insider Threat Mitigation

- Dr. William Claycomb
- Andrew Moore