MANAGING RISK

The insider threat to biocontainment facilities

Mitigation through organizational security

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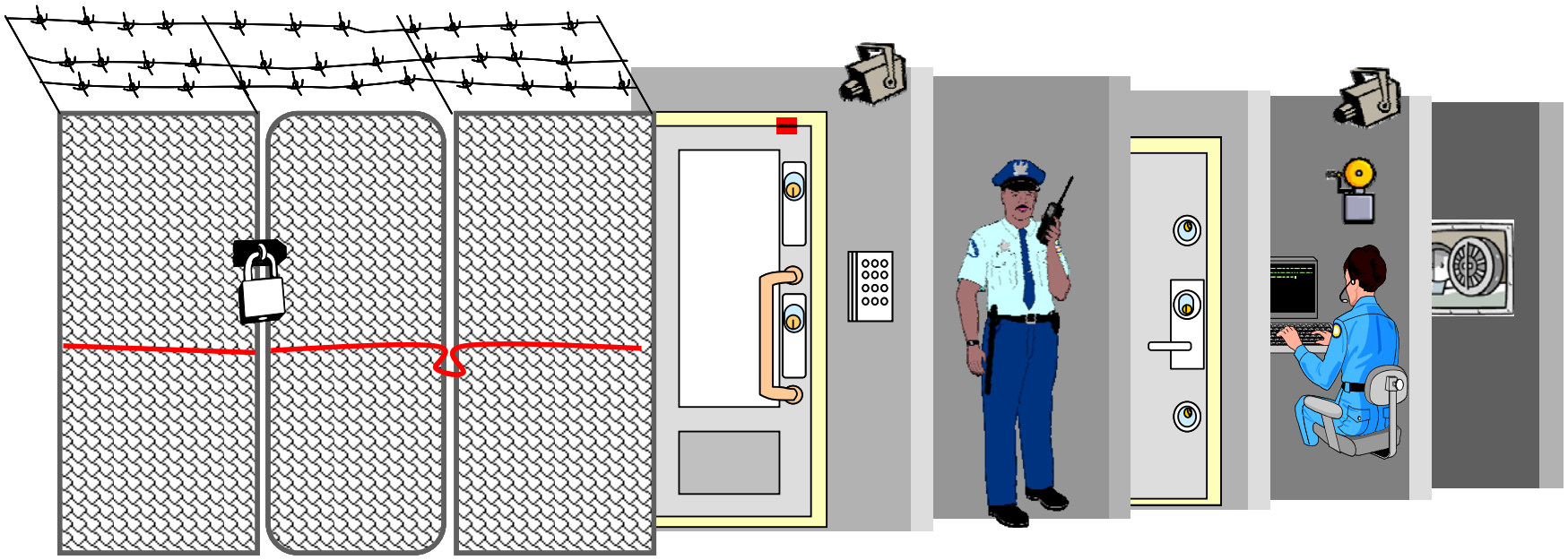
Common misperception of security



Security is much more than Guns, Guards and Gates

-“Security is fundamentally not a technology problem- it's a people problem”.

-(Bruce Schneier, Februar 2008)

Background

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- The most likely security threat to any biological containment facility
- Relatively little research / studies into the insider threat with respect to biological containment facilities

What is the insider threat?

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- The insider threat comes from trusted individual(s) that steal, distribute, sabotage, destroy, or release a dangerous biological agent, or other high consequence assets like sensitive information.

Preconditions for insider betrayal

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- The following conditions are often required before an employee carries out a serious betrayal of trust:
  - ✓ An opportunity to commit the crime
  - ✓ A motive or need to be satisfied by the crime
  - ✓ An ability to overcome natural inhibitions to criminal behavior
  - ✓ A trigger that sets the betrayal in motion

PERSEREC Findings

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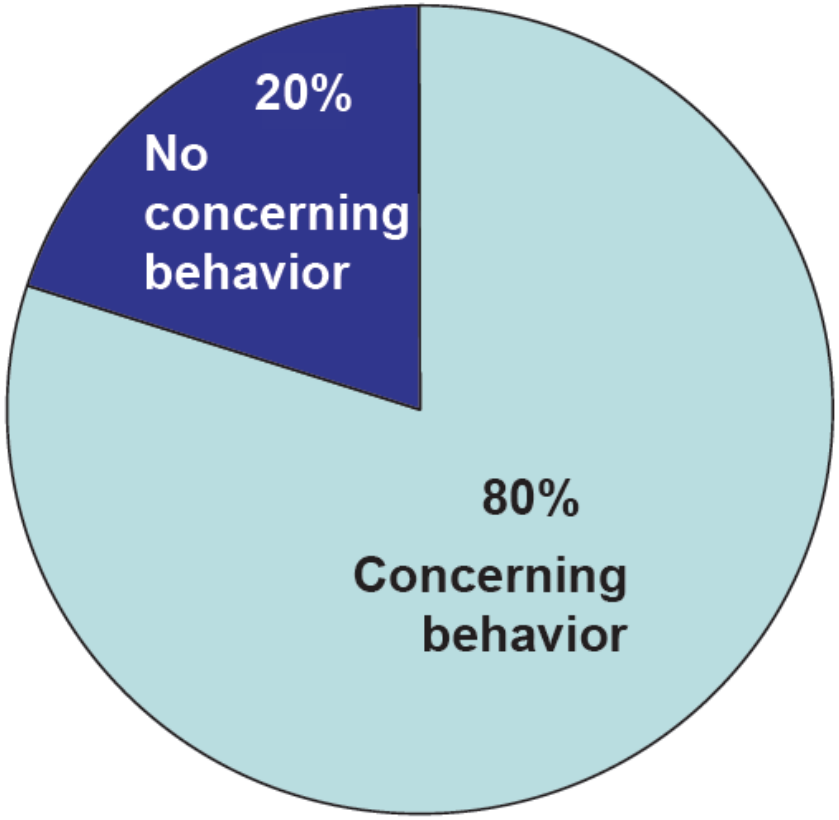
- A negative work-related event triggered most of the insiders' actions.
- 80% of th …viour of a security concern i …ut their activities.
- 57% of ir …bilities in applicatic
- 43% of ir …he time of the incident.



*Source: D …nter (PERSEREC)

Acquiring Biological Agents

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Table 4: Acquisition of biological agents

Type	Terrorist	Criminal	Other/ Uncertain	Total Instances
Legitimate supplier	1	9	1	11
Theft	1	3	0	4
Self-manufactured	1	4	1	6
Natural source	2	4	0	6
Unknown	3	3	0	6
Total instances	8	23	2	33

Note: This table reflects the predominant method of acquisition; some individuals or groups acquired agent through multiple paths.

- 11 of the 33 cases involving non-state actors - obtained biological agents or toxins from legitimate suppliers (data from 1900 to 2000)

  All thefts involved people who had legitimate access to the facilities where the biological agents were kept

***Source: Bioterrorism and Biocrimes; The Illicit Use of Biological Agents Since 1900 - W. Seth Carus**

External/internal adversaries

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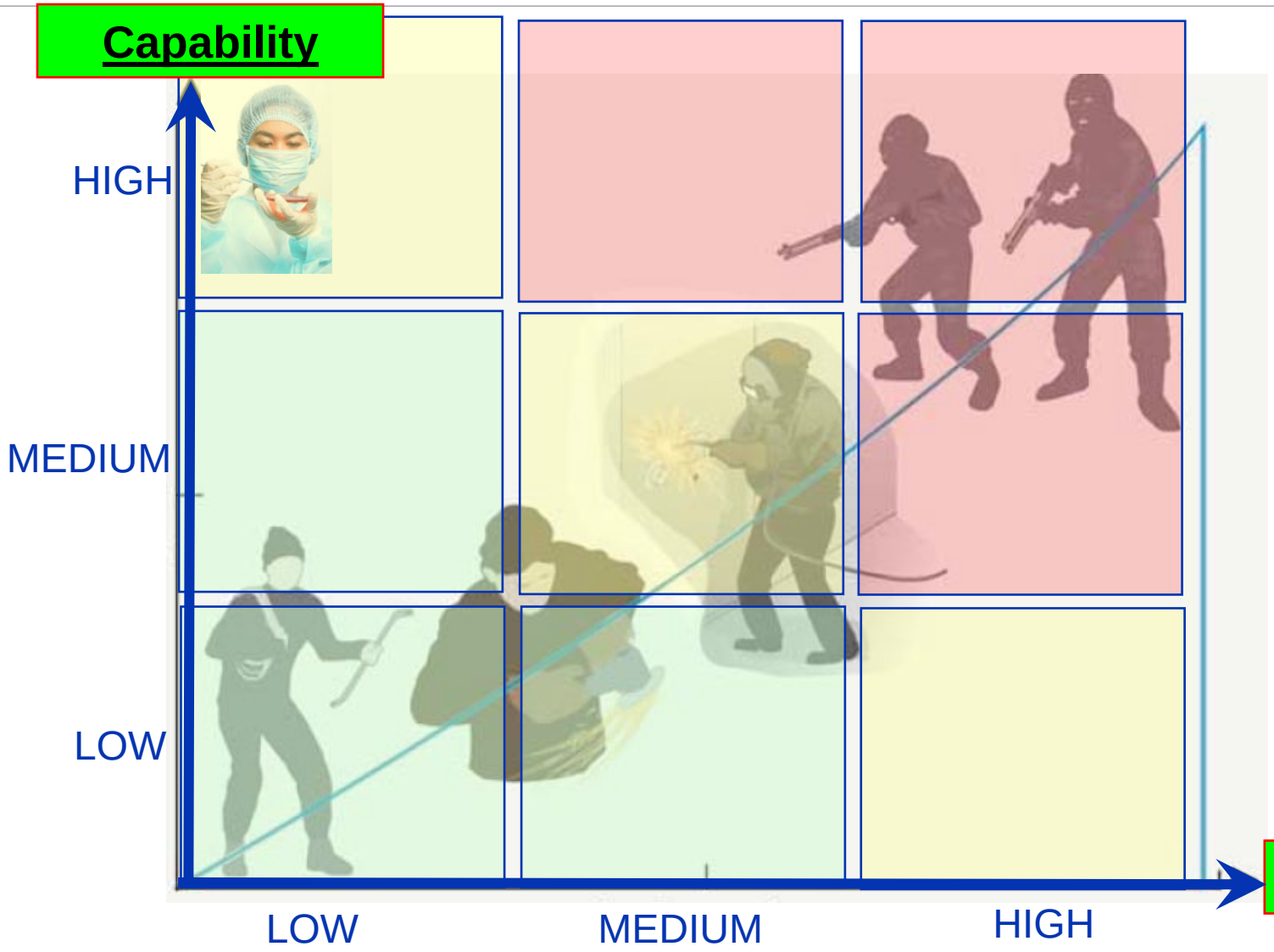

External/internal adversaries

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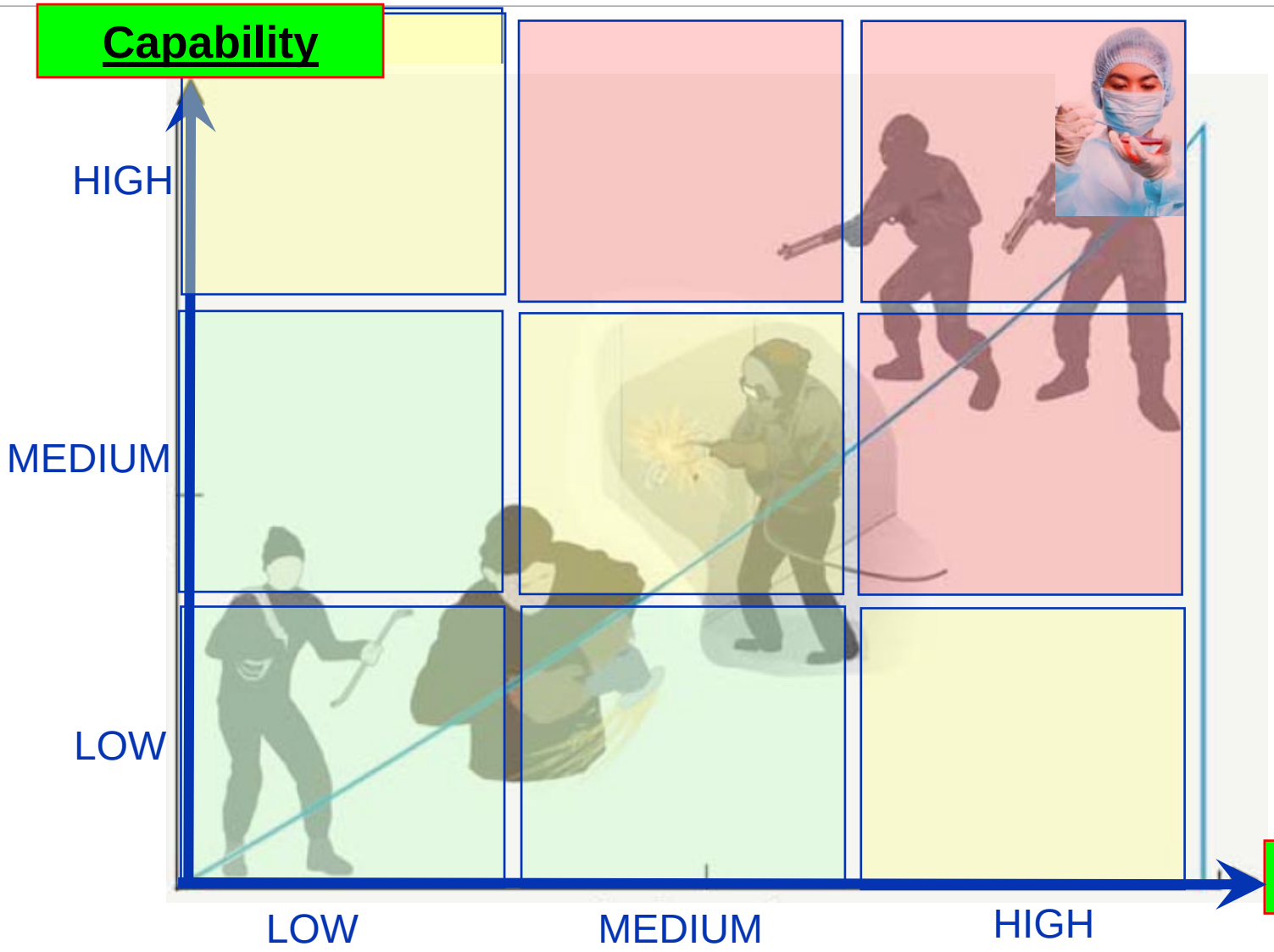

Insider pre-attack behavior

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- Previous incidents have shown
  - Insiders acted in a concerning manner in the workplace prior to the event
  - Most insiders planned their activities in advance
  - In many cases, others had information about their intentions, plans, and/or activities
  - Many insiders communicated negative sentiments to others, and even made threats of harm

➢ *Organizations should document reports of problematic behavior and develop procedures to respond to such reports*

Recognition of behavior, not stereotypes

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- No demographic “profile” of insiders
  - ages range from late teens to retirement
  - both men and women
  - at all levels: technicians, managers, executives, current / past and temporary employees, contractors

➢ Security awareness training needs to focus on behavior, not on stereotypical characteristics

➢ Behaviors that should be a cause for concern include:
  - threats against the organization
  - statements that damage could be done
  - attempts to obtain access to restricted areas through trickery or exploitation of trust

Examples of behavioural precursors

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- Drug/alcohol abuse
- Conflicts (co-workers, supervisor)
- Aggressive or violent behaviour
- Mood swings over time
- Turning more and more introvert
- Poor performance or apathetic behaviour
- Excessive money spending
- Frequently absent with no apparent reason
- Unusual interest in information outside job scope
- Unusual work hours

U.S Secret Service and CERT Insider Threat Study 2002

What is organizational security?

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- How the organization deals with security – from a human perspective
- Leadership and management
- Policies, standards, procedures
- Organizational culture
- Human Resources (HR)
- Communication
- Training and security awareness

Mitigation through organizational security

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- Executive commitment to biosecurity – top down process
- Recruiting and vetting – get the right people onboard
- Policies and procedures reinforced by education and controls
- Security awareness training with focus on behavior, not on stereotypical characteristics.
  - *Conduct activities to promote deterrence, greater possibility for detection and guard against the potential threat from the insider*

Mitigation through organizational security

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- There is a delicate balance between rigid security systems and productivity
- Enforce separation of activities
- Proactive access controls based on need
- Protect of “whistleblowers”
- To recognize behavioural change, we need to know what is a person’s typical behaviour

Not necessarily expensive

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- First rate management – know and care about your colleagues
- Organizational security is a process, not a product
- Emphasize, define and prioritize the desired organizational culture
- Implement processes to promote responsibility- regardless of position in the organization
- Organizational security can be effective without significant capital investment
- **Working with organizational security = changing mindsets**

Security awareness - not paranoia

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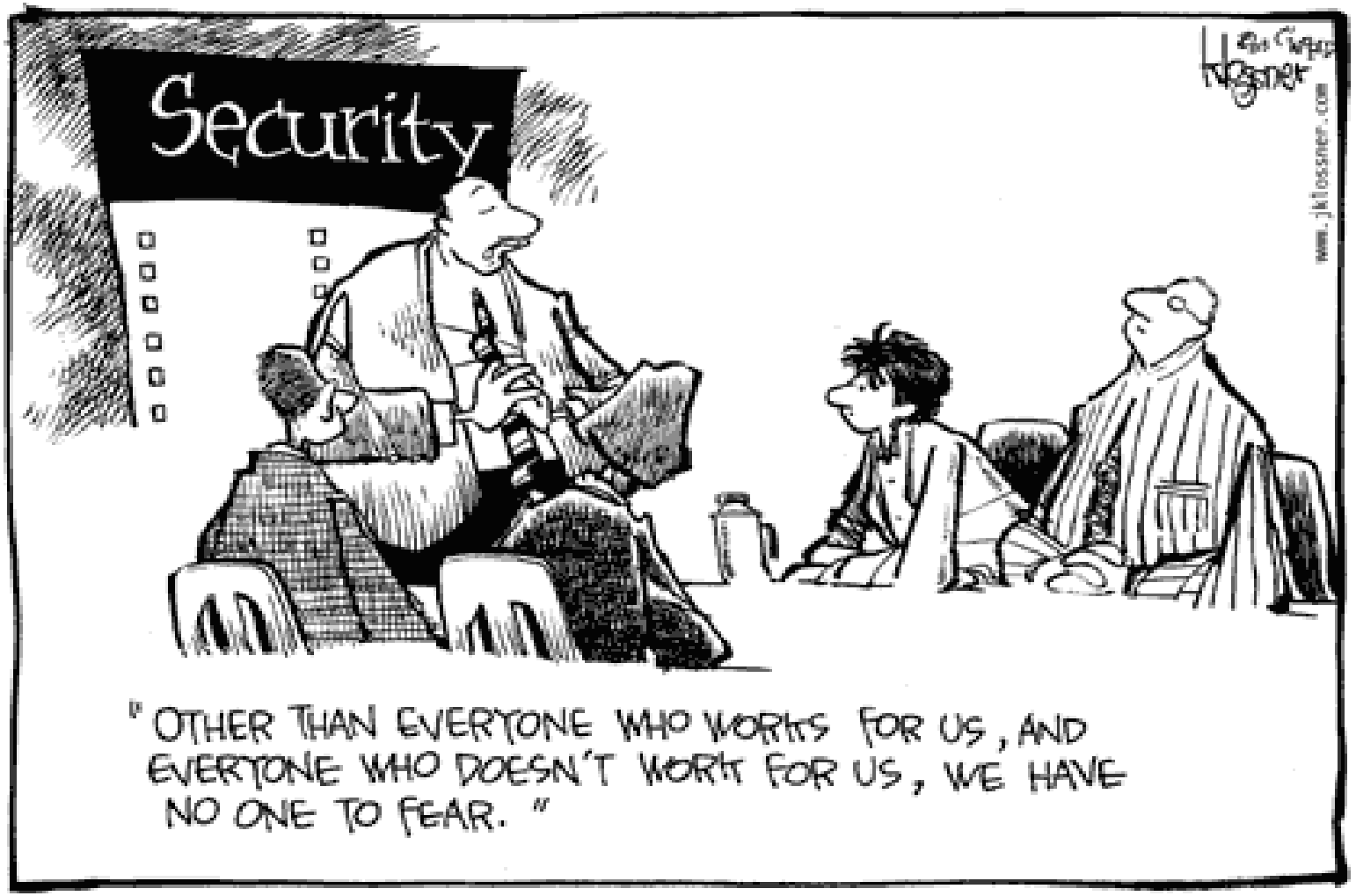
- It is essential to encourage and promote a climate of trust, versus one of apprehension, oppression, paranoia and distrust



Conclusions

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- Executive commitment to biosecurity is vital to mitigate the insider threat
- To identify and stop the insider threat, we must focus on human behavior and not just stereotypes
- Organizational security is the key strategy in mitigating the insider threat
- The first line of defense: colleagues and managers

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