

Risk Perception in Academic Laboratories

Imke Schroeder, Ph.D.
UC Center for Laboratory Safety
UCLA

Overview

- Background on risk perception
- Factors affecting risk perception in the laboratory
- Risk versus safety perception
- Impact of safety culture
- Conclusions and recommendations

Some Terminology

- Risk is a measure of the probability and severity of adverse effects
- Risk perception is the ability of an individual to discern a certain amount of risk



Lunch Atop A Skyscraper', by Charles Ebbets in 1932

(National Safety Council, 2003)



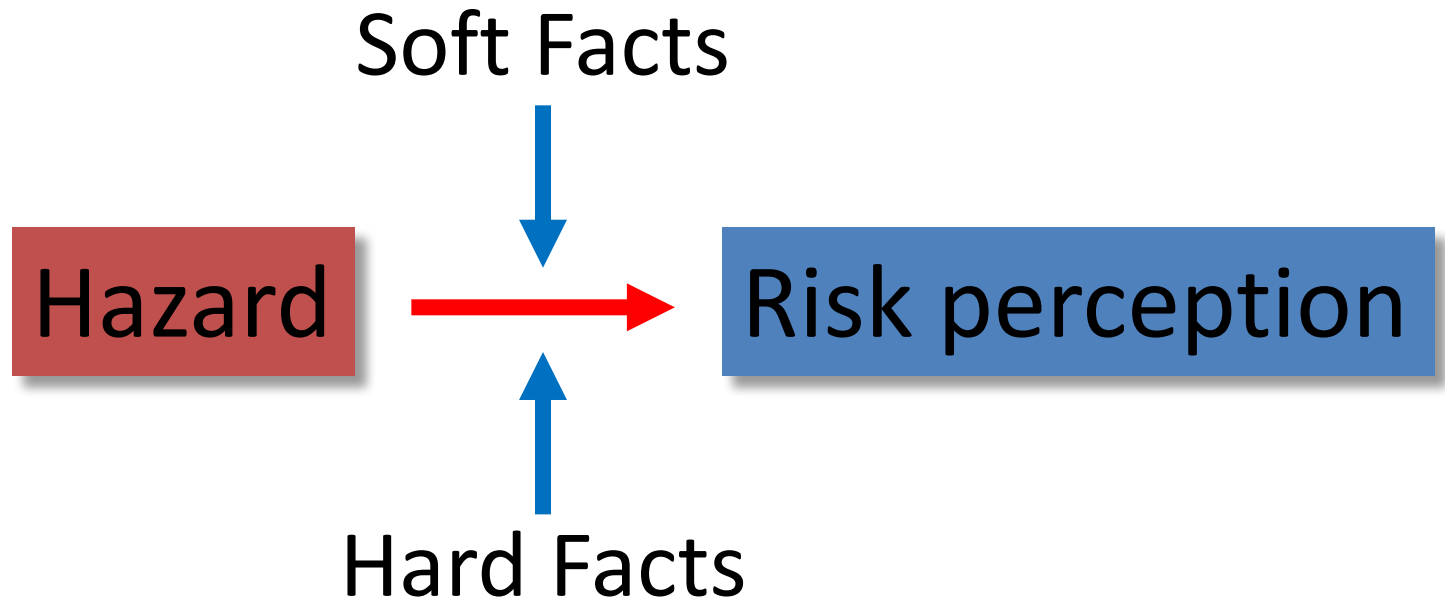
https://www.youtube.com/watch?v=UeB7l_O8T6o

Risk and Risk Perception



Inaccurately perceived risk can cause
inadequate safety behavior

Facts Influencing Risk Perception



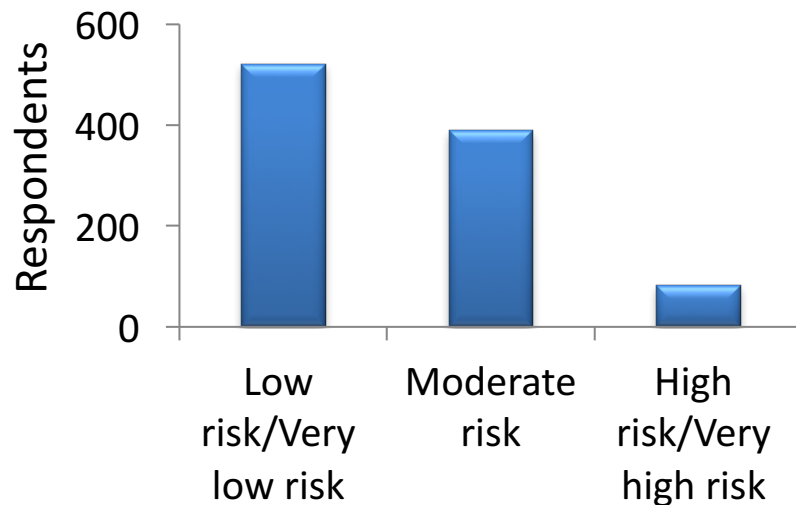
Quantitative Measures of Risk Perception

How do researchers perceive risk?

- International survey on Lab Safety Practices (2012)
- Analysis of responses from 991 researchers in academic U.S. laboratories
- Chi-square, ANOVA, regression analysis

How do researchers perceive risk?

I believe that the level of risk of the work conducted in my lab is:



- Risk perception is independent on age and job experience
- Risk perception is independent on whether or not safety training was received

Majority underestimates the risk of work in the lab

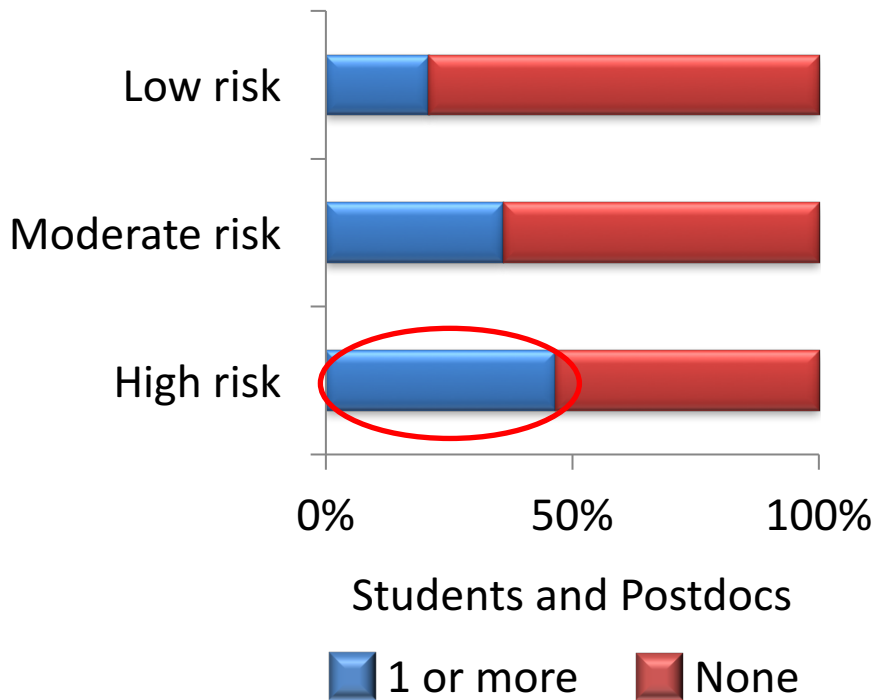
Risk Perception: Working alone and with hazards

Researchers with high-risk perception

- Work more often alone in the lab
- Work more often with hazards - especially pyrophorics, human bodily fluids or tissues, animals and hazardous machines

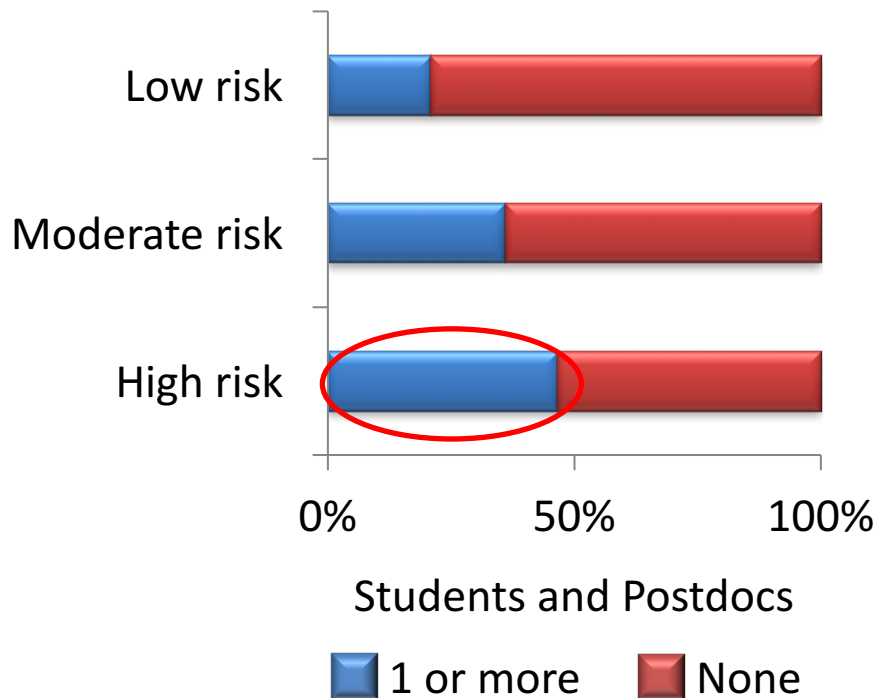


Risk perception is influenced by major lab-related injuries



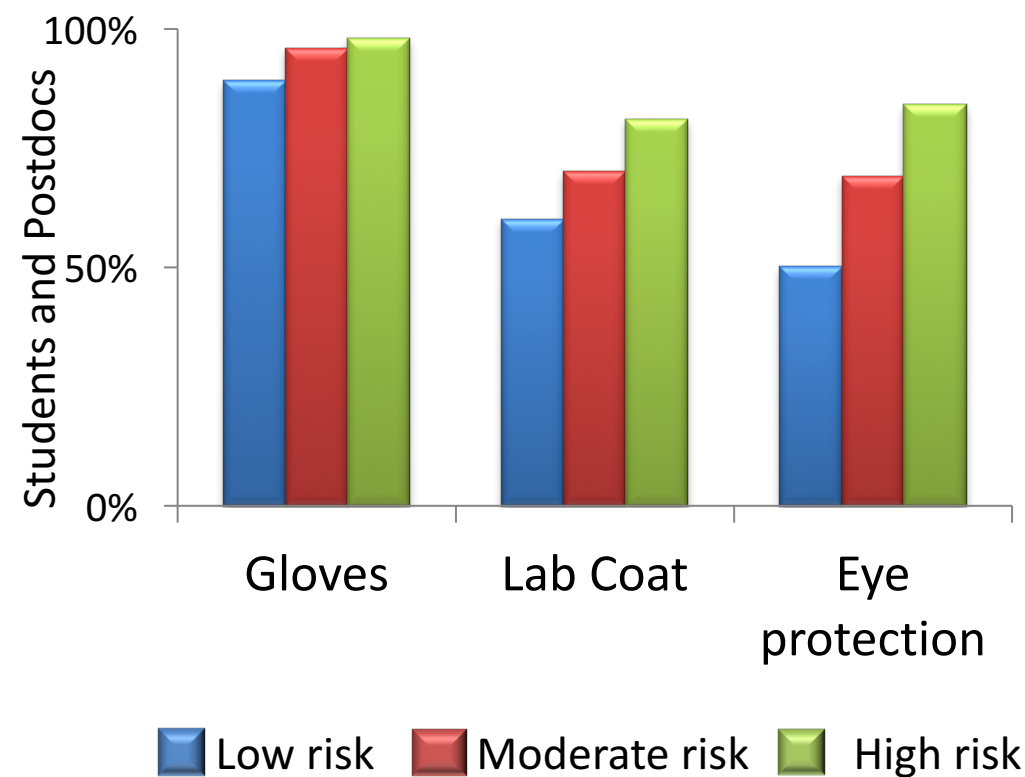
deseretnews.com

Risk perception is influenced by major lab-related injuries



- Severity of the injury matters
- In accordance with Protection Motivation Theory: “People are more likely to protect themselves when they anticipate negative consequences, have the desire to avoid them and feel they have the ability to take preventive measures”*

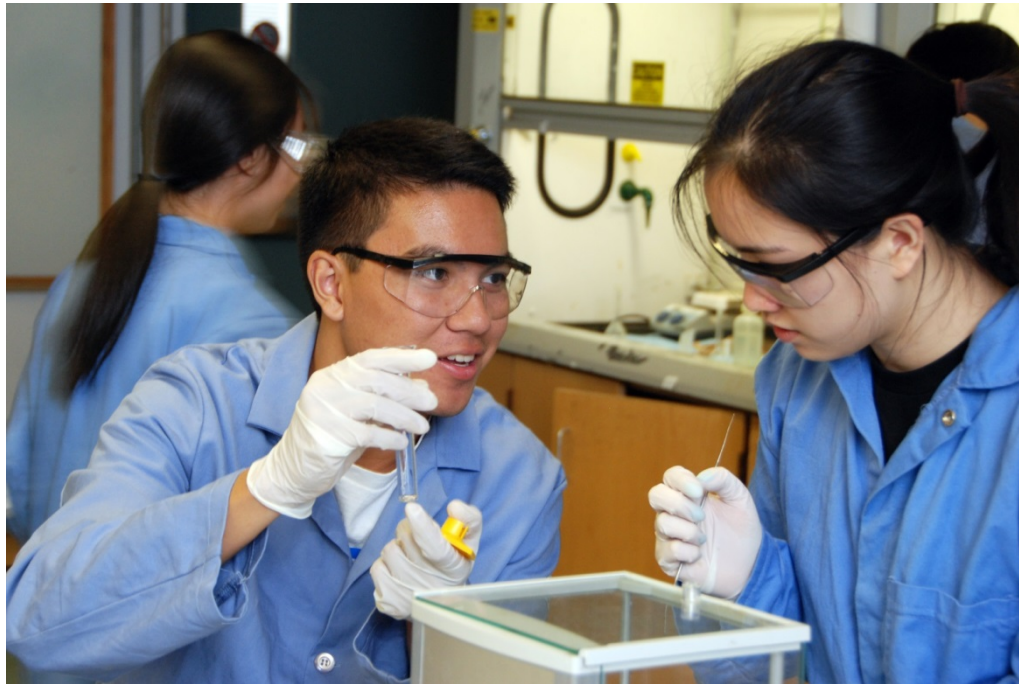
Risk Perception Motivates Safety Behavior



- The higher the perceived risk the more consistently researchers wear PPE
- Not true for wearing gloves
- Industry safety behavior is independent of risk perception
- Safety behavior in industry is standardized

"I feel that my lab is a safe place to work"

The lower the perceived risk, the safer researchers feel



What affects feeling safe in the
research environment?

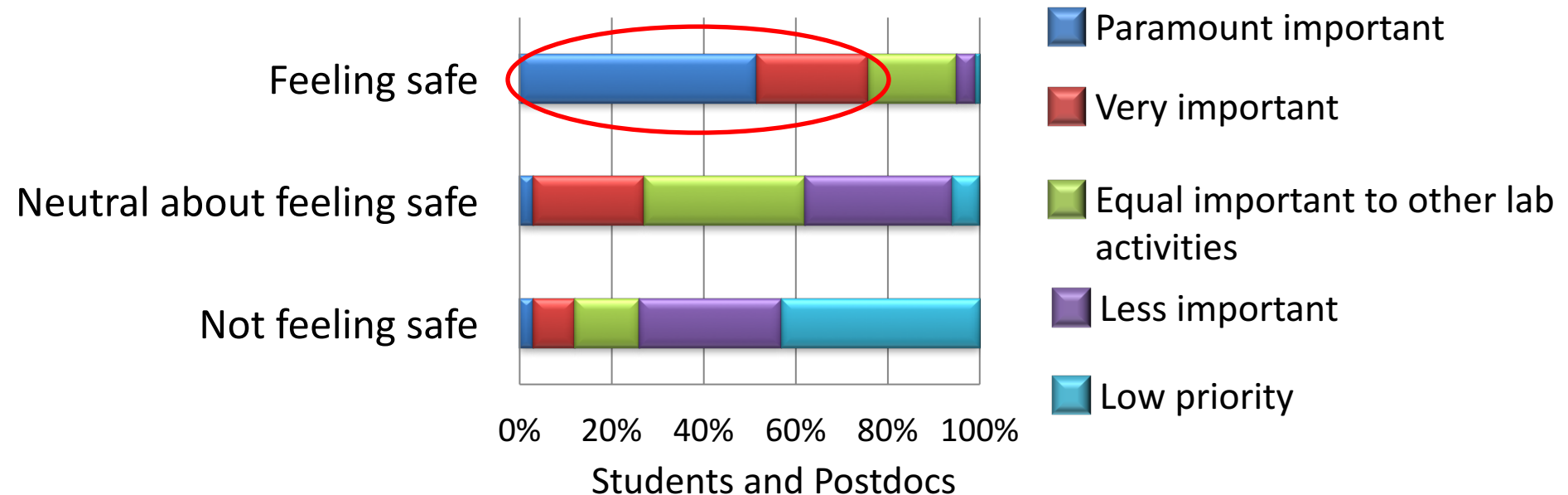
Feeling safe at the work place

- Dependent on general safety training
- Dependent on hazard-specific training



Feeling safe at the work place

Question: Which of the following statements best describes your laboratory in regards to safety? Safety is



The more safety is of paramount importance or very important the safer researchers feel

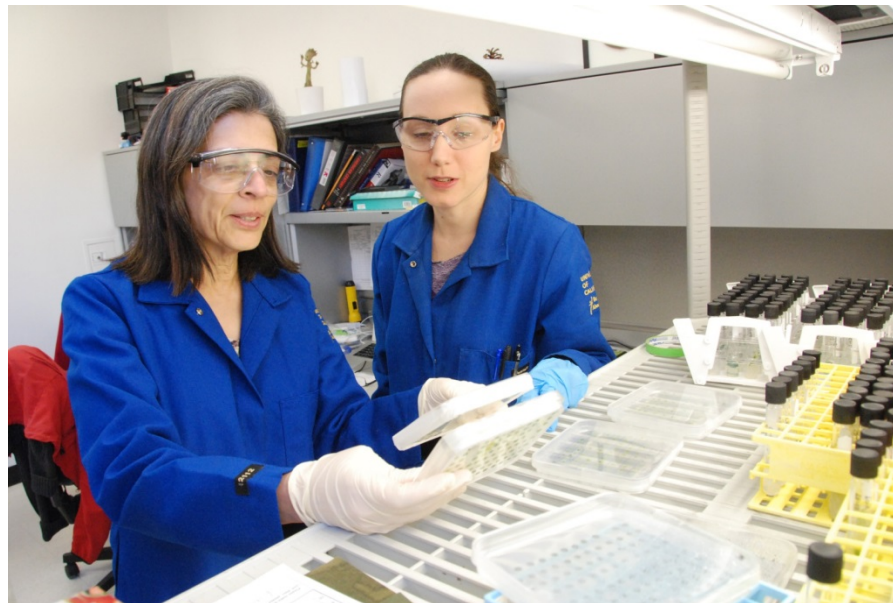
Feeling safe is dependent on how safety
is prioritized in the lab

Safety Culture

- ✓ “How we do things around here”
- ✓ A community where everyone cares about one’s own and others’ well being

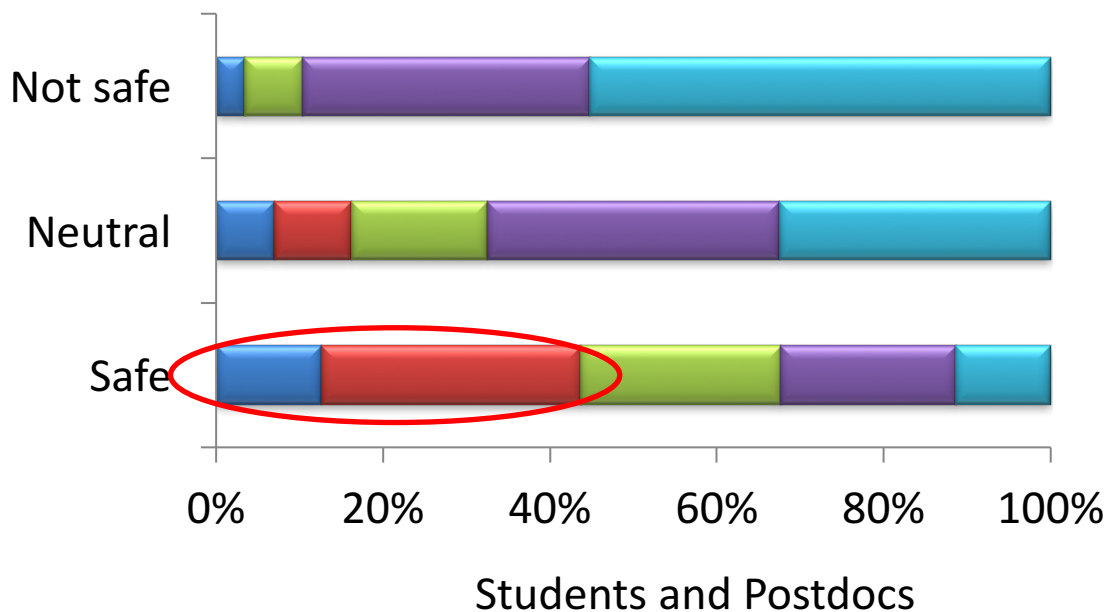
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Safety Culture



PIs Impact

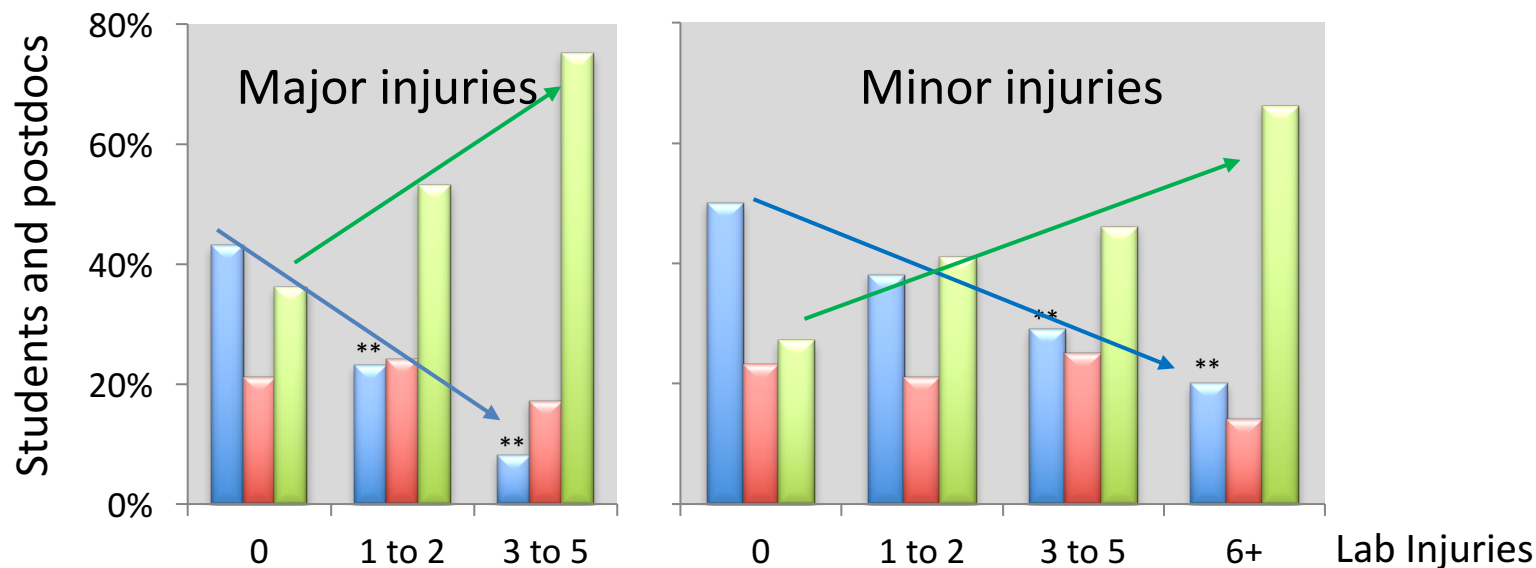
- PI has no direct impact on risk perception
- BUT, PI impacts students feeling safe



■ Strongly agree
 ■ Agree
 ■ Neutral
 ■ Disagree
 ■ Strongly disagree

Impact of PI on Student Safety

Injuries witnessed or personally experienced by students and postdocs (n=406)



Conclusions and Recommendations

- Risk perception is affected by:
 - working alone
 - types of hazards included in work
 - severe injuries or accidents experienced
 - feeling safe in the lab
- Feeling safe in the lab is affected by:
 - safety training
 - how safety is prioritized in the lab
 - PI or supervisor monitoring safety
- Engage leadership on all levels but especially PIs to monitor safety and discuss risks
- Provide risk assessment training

Thank You



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✉ Email: ischroeder@ehs.ucla.edu
www.cls.ucla.edu