



# MONASH University

Medicine, Nursing and Health Sciences

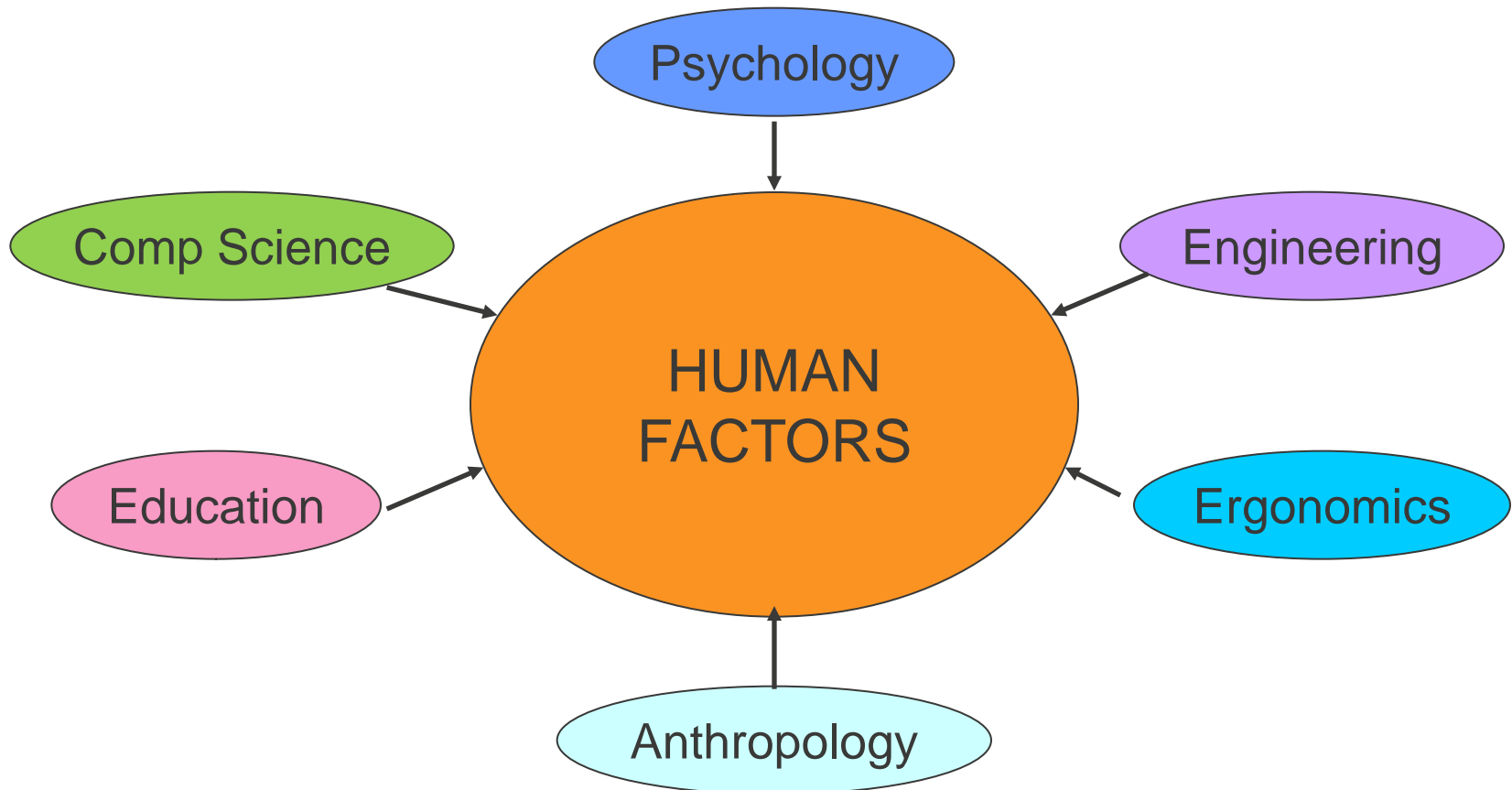


# Human factors (HF)

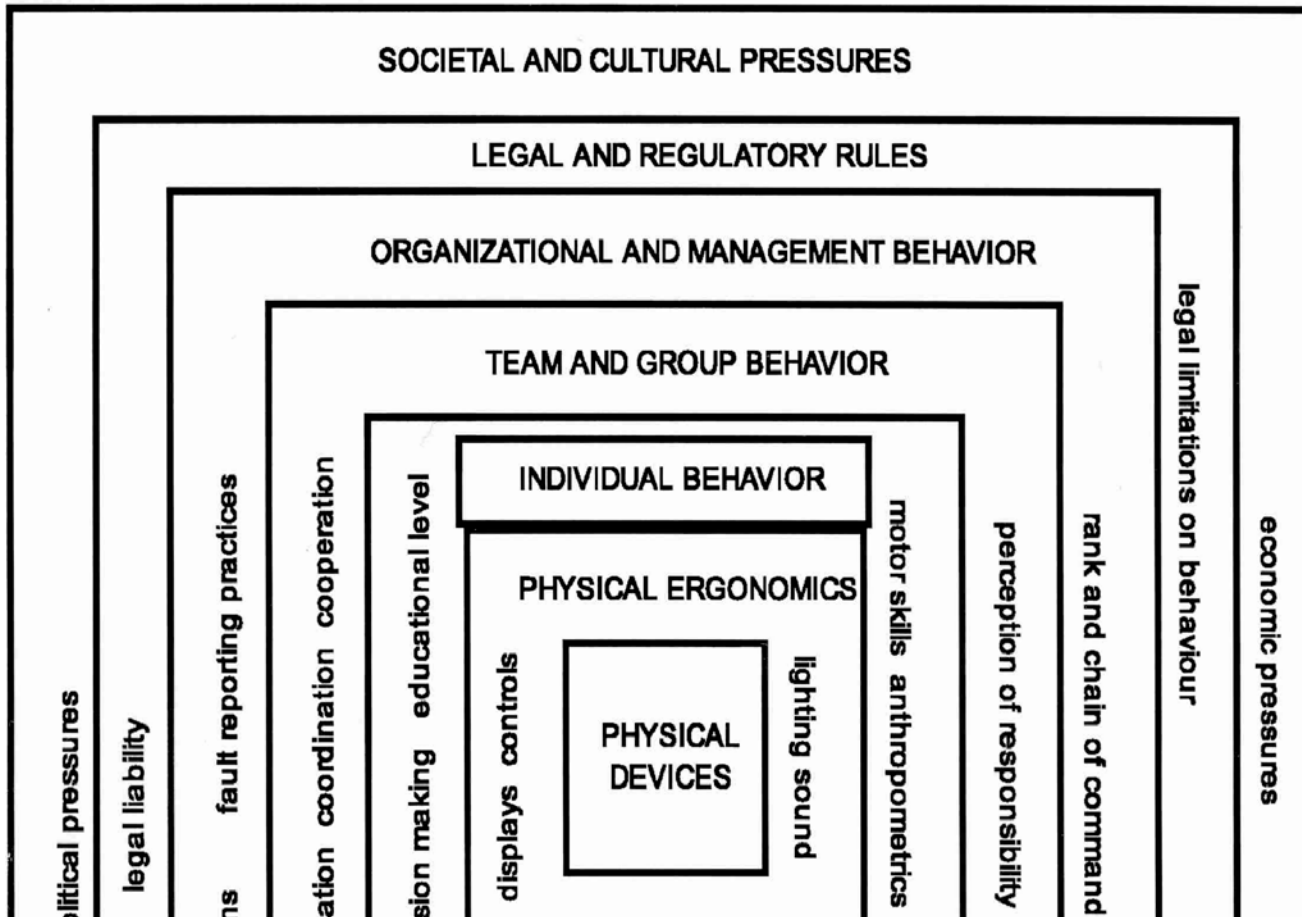
- HF is a broad science that deals with many factors influencing human performance
  - e.g. physical environment, task characteristics, individual characteristics and organizational or management systems
  - i.e. factors that affect how people perform, think, communicate, and interact with technology in complex socio-technical systems



# Multidisciplinary



# Systems approach!



# Clinical human factors

- A definition is being developed specifically for healthcare

*“Enhancing clinical performance through an understanding of the effects of teamwork, tasks, equipment, workspace, culture, organisation on human behaviour and abilities, and application of that knowledge in clinical settings.”*

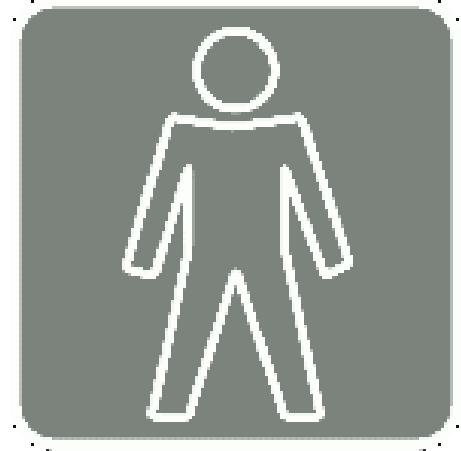
*Clinical Human Factors Group*

<http://www.chfg.org/>

# Goal

“The overall goal of human factors is to optimise the relationship between humans and systems with which they interact to reduce error and failure and so improve safety.”

- Systems should be designed to facilitate the acquisition, processing and response to information for a range of operators
- Operators should have the skills and knowledge to acquire, process, and respond to the information afforded by systems



# 5 principles (good)

1. Tools, machines, technology, and procedures are built to serve humans and must be designed with the user in mind;
2. Human capabilities and limitations, along with individual variability, must be recognised and embedded in the design process;
3. Human behavior is influenced by the design of tools, machines, technology, and procedures;
4. Work is an integrated system involving the human in concert with tools, machines, technology, procedures, and in a given environmental context; and,
5. The scientific method, involving empirical data collection and hypothesis testing is critical to the science of Human Factors

## 6 assumptions (bad)

1. That all operators are the same (skills, motives, experience)
2. That the outcomes of errors are intentional
3. That errors are necessarily the product of 'poor operators'
4. That there are always simple solutions that will prevent error
5. That errors are isolated from the system in which they occur
6. That to fix errors we must focus on failure rather than success

# Human factors for patient safety?

‘given the complexity of health and formidable obstacles it presents to change, to overcome those barriers and create a safe culture does indeed seem to be the ultimate challenge for those who specialise in human factors.’

(Leape, 2004)

‘because of the complexity of healthcare and the need to understand healthcare work in naturalistic settings, field research in human factors should be strongly encouraged. This research must be done in close collaboration with healthcare researchers, healthcare professionals and their organizations.’

(Carayon, 2007)



# Human Factors: As Seen on TV

- Created by the San Jose State University Human Factors and Ergonomics Student Chapter
- 'YouTube' competition 2011 winner 😊

