

# What surgeons can learn from polar explorers and fighter pilots

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# Acknowledgements

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- Phil Bayman
- Chris Peters
- Petur Jonasson
- Terry Clark
- Aaron Williamon



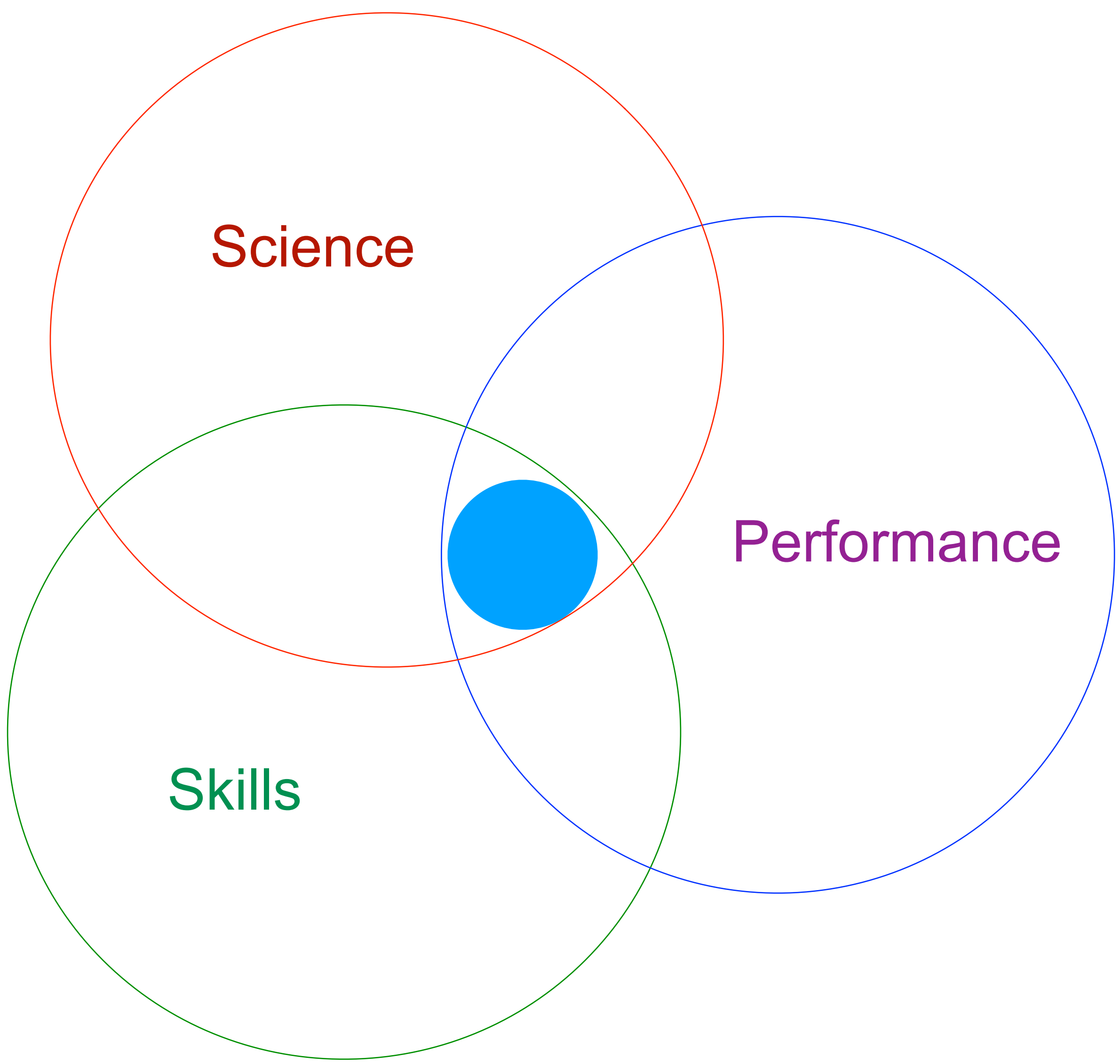
***Countercurrent* podcast**

<http://apple.co/2n5ROy1>



# Performing medicine, performing surgery





Science

Skills

Performance





Performance



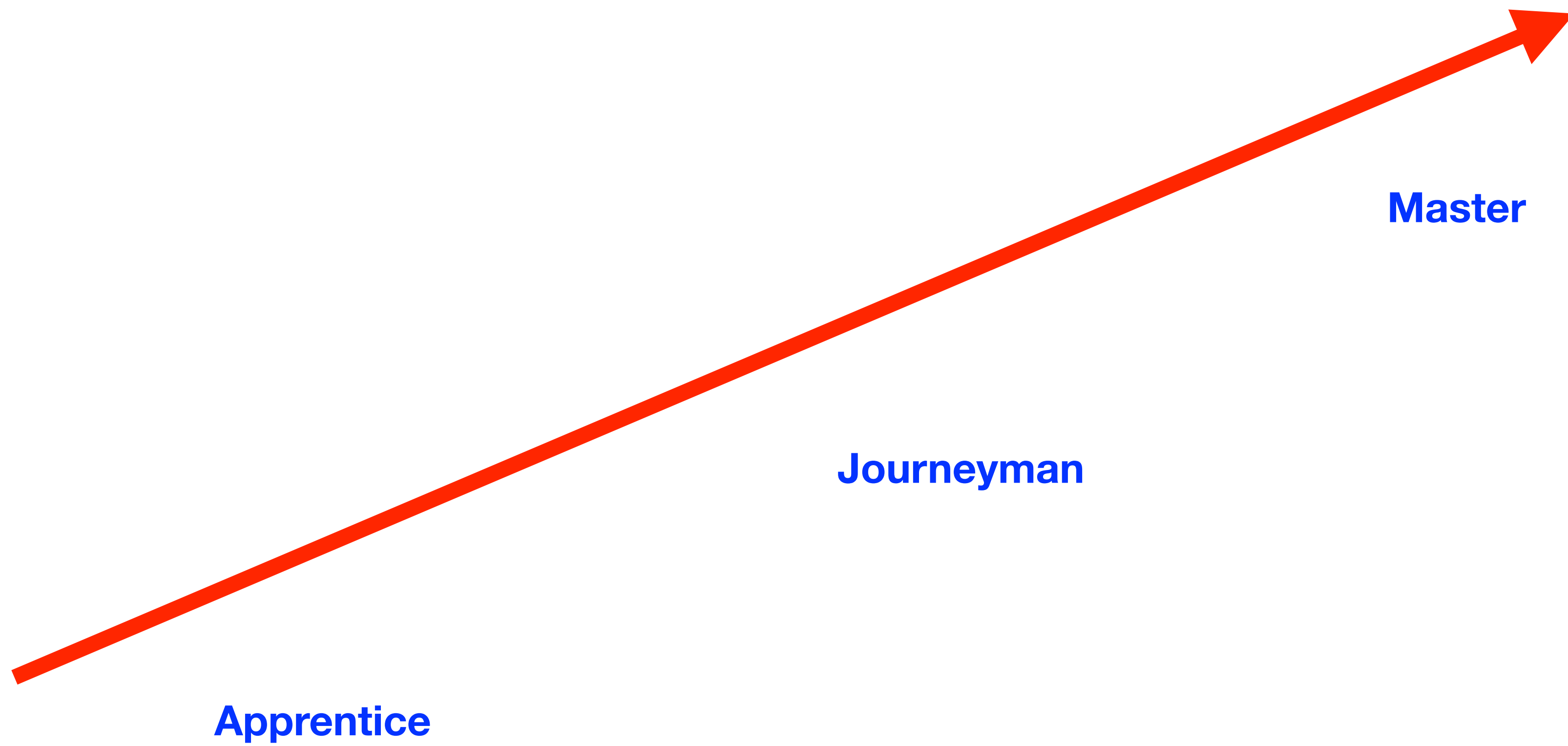
# Expert

Understanding  
the Path  
to Mastery

Roger  
Kneebone

‘If you want to do anything  
better, from surgery to  
embroidery, you can learn  
something from this book’  
**Christopher Peters,**  
**Imperial College London**







APPRENTICE

JOURNEYMAN

MASTER

DOING  
TIME

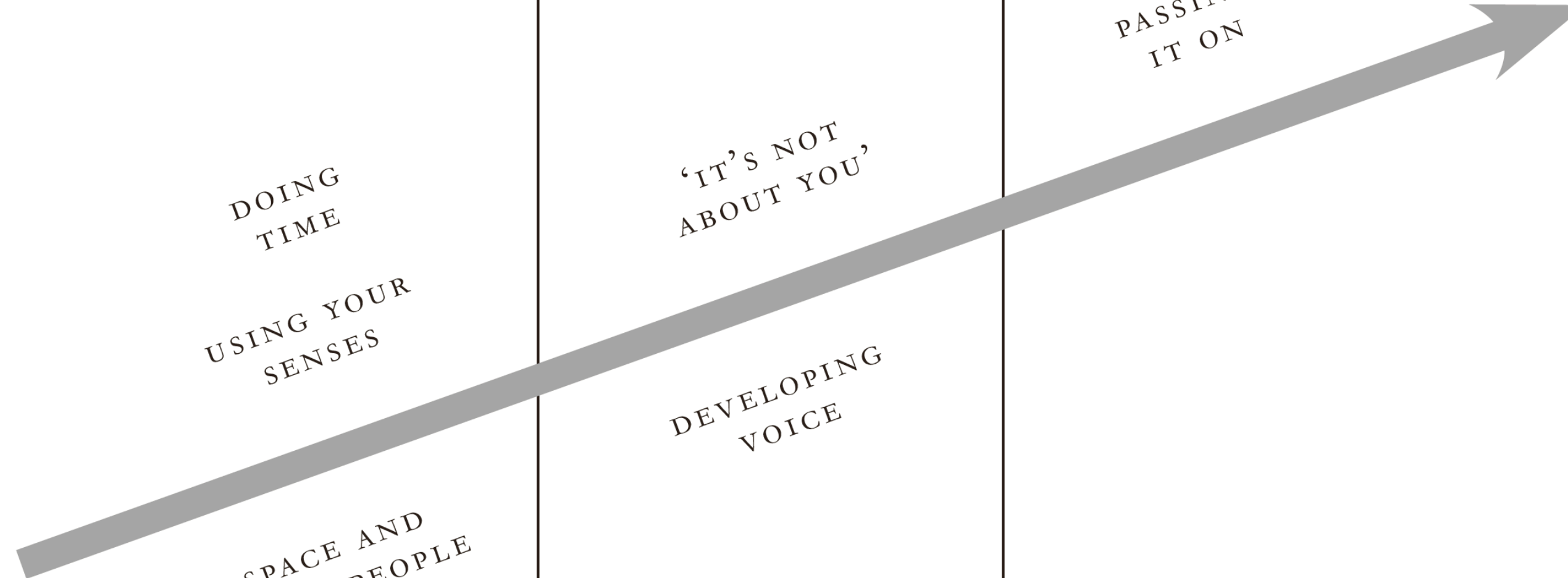
USING YOUR  
SENSES

SPACE AND  
OTHER PEOPLE

‘IT’S NOT  
ABOUT YOU’

DEVELOPING  
VOICE

PASSING  
IT ON



























**A close call**

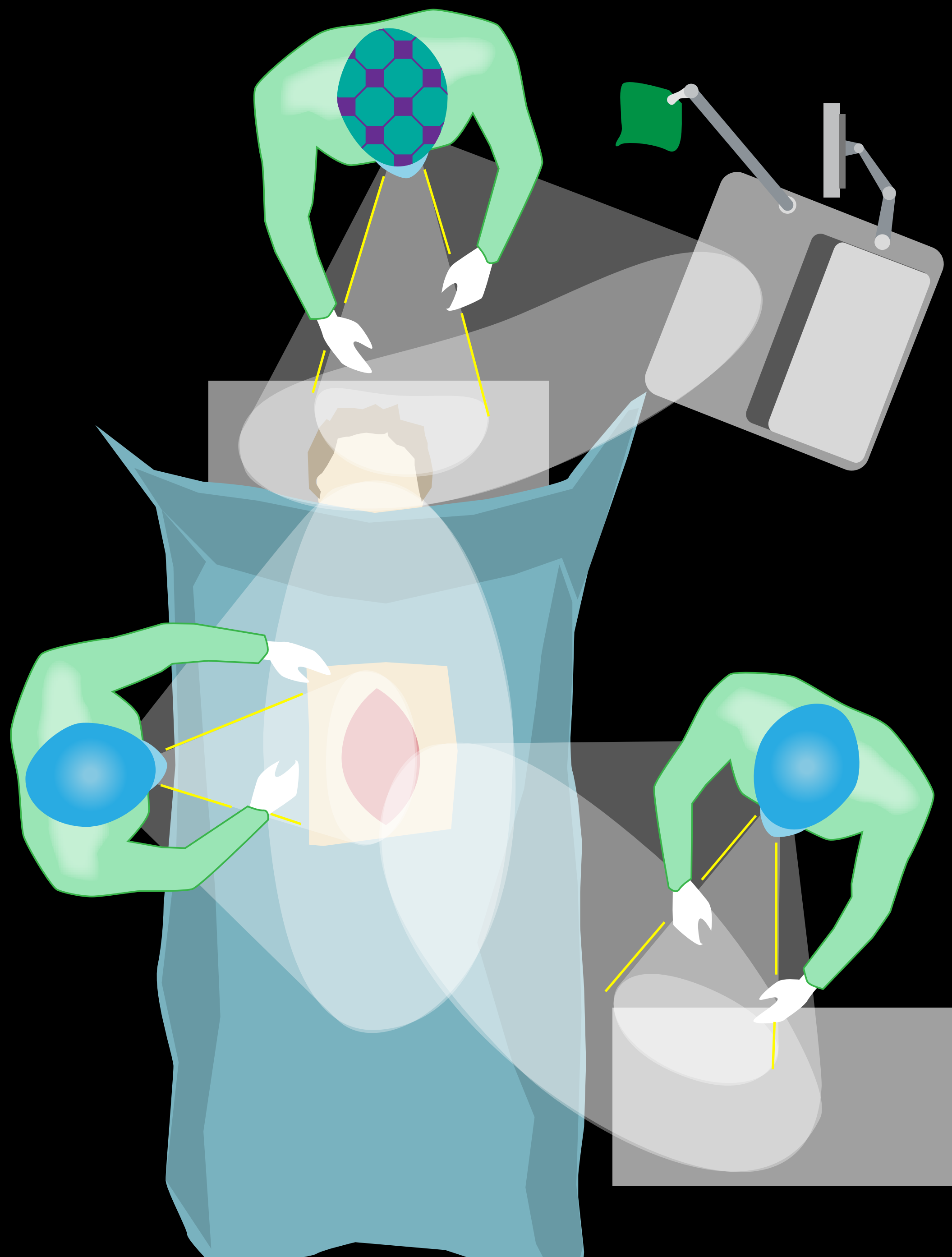




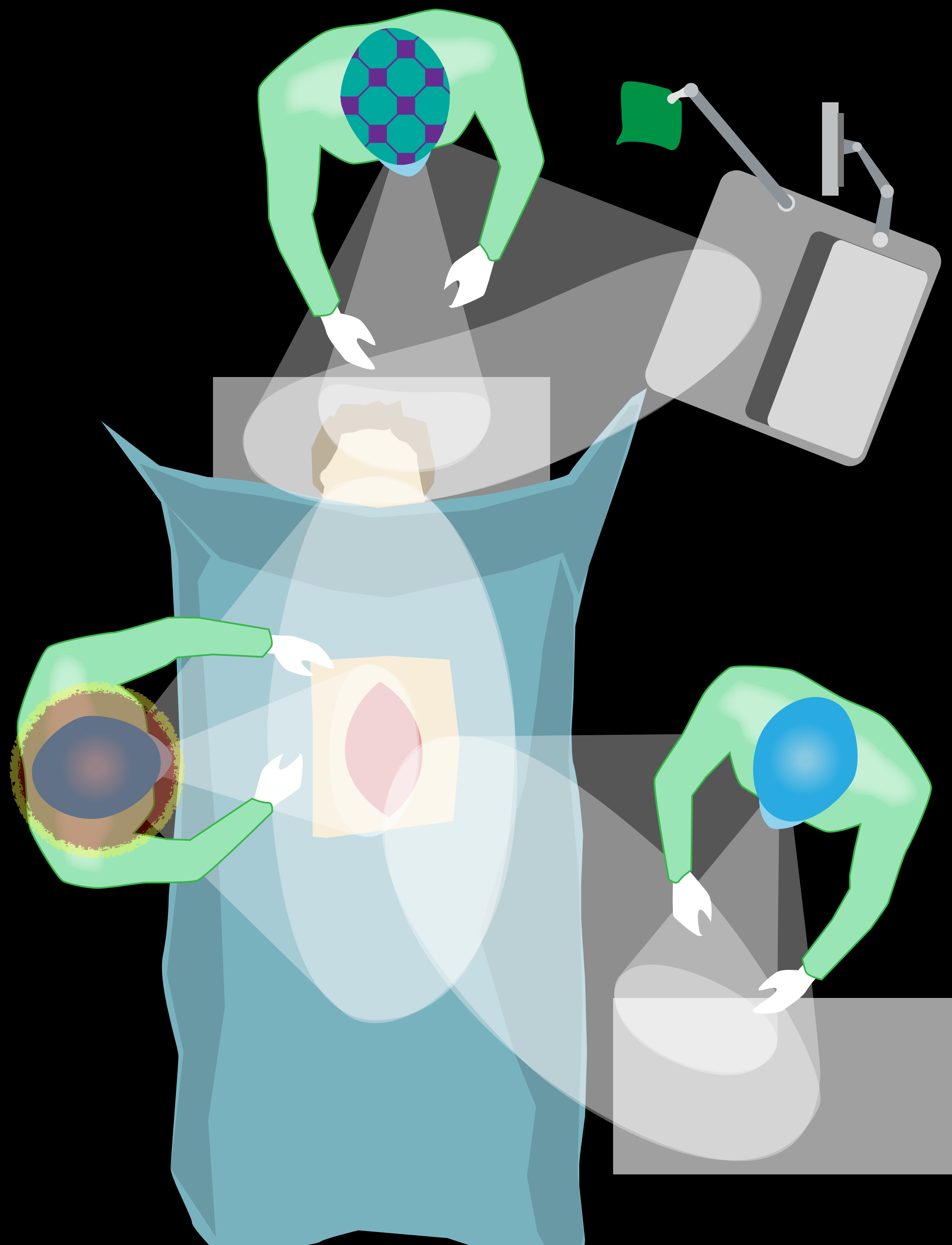


# Beams of attention

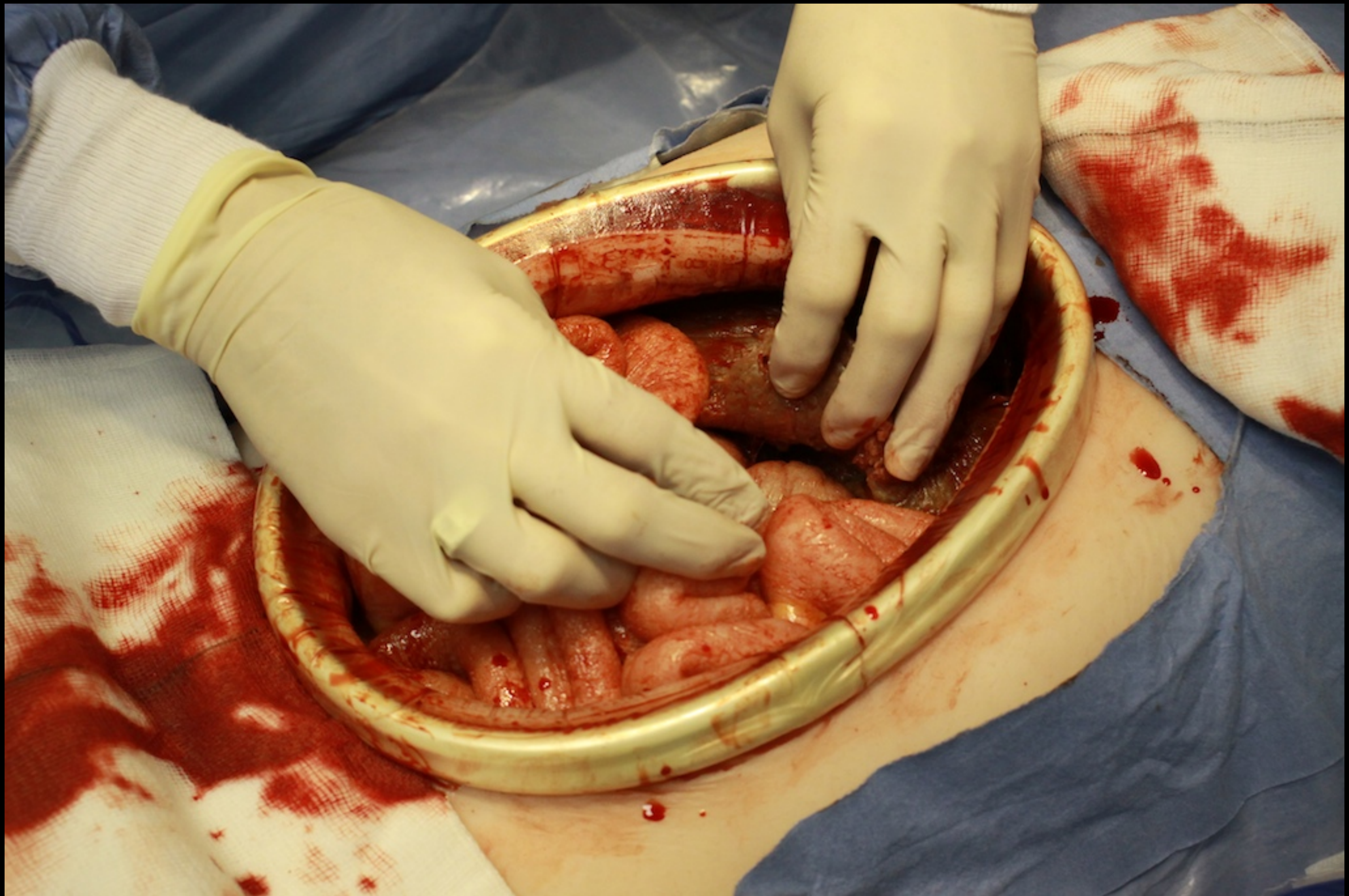




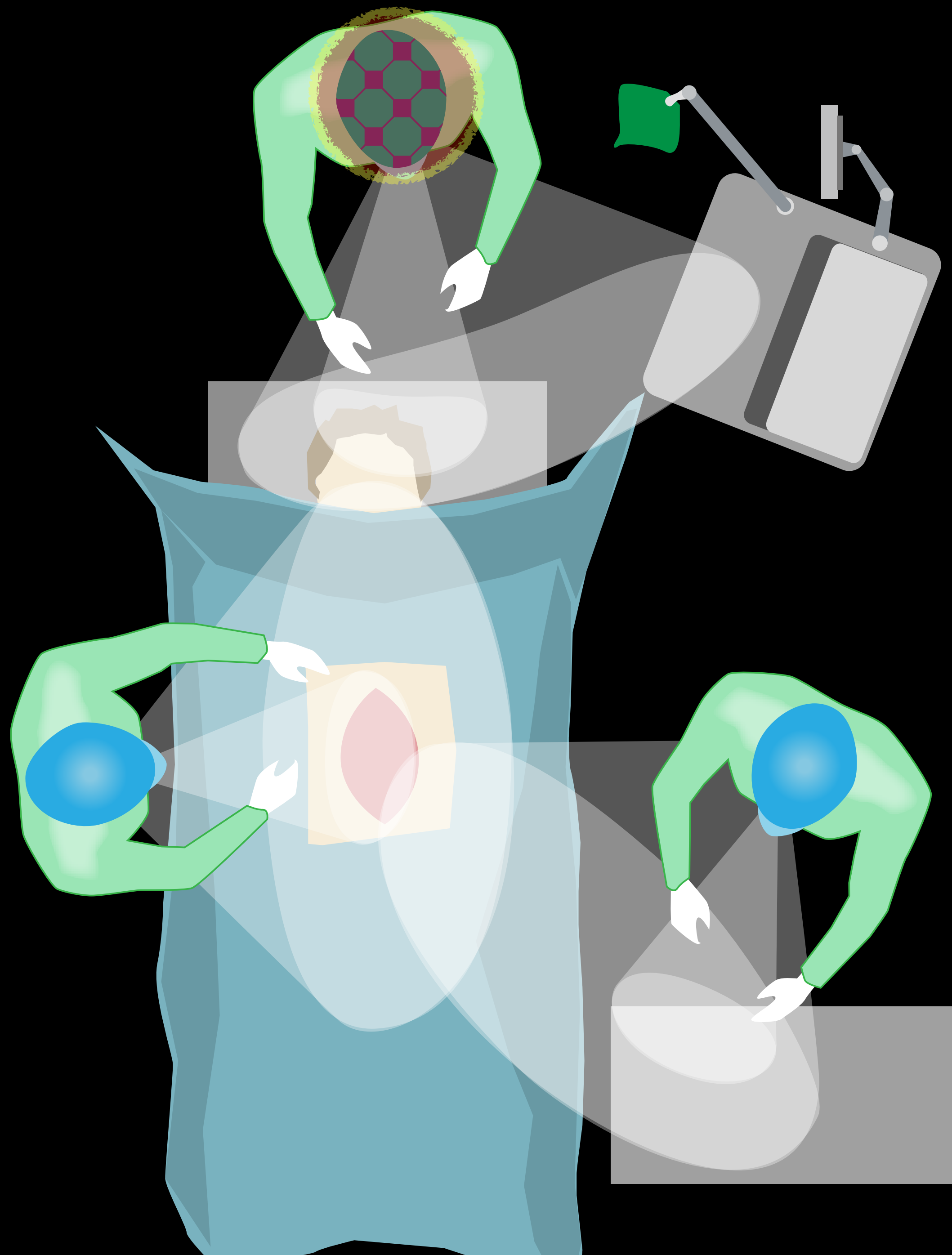












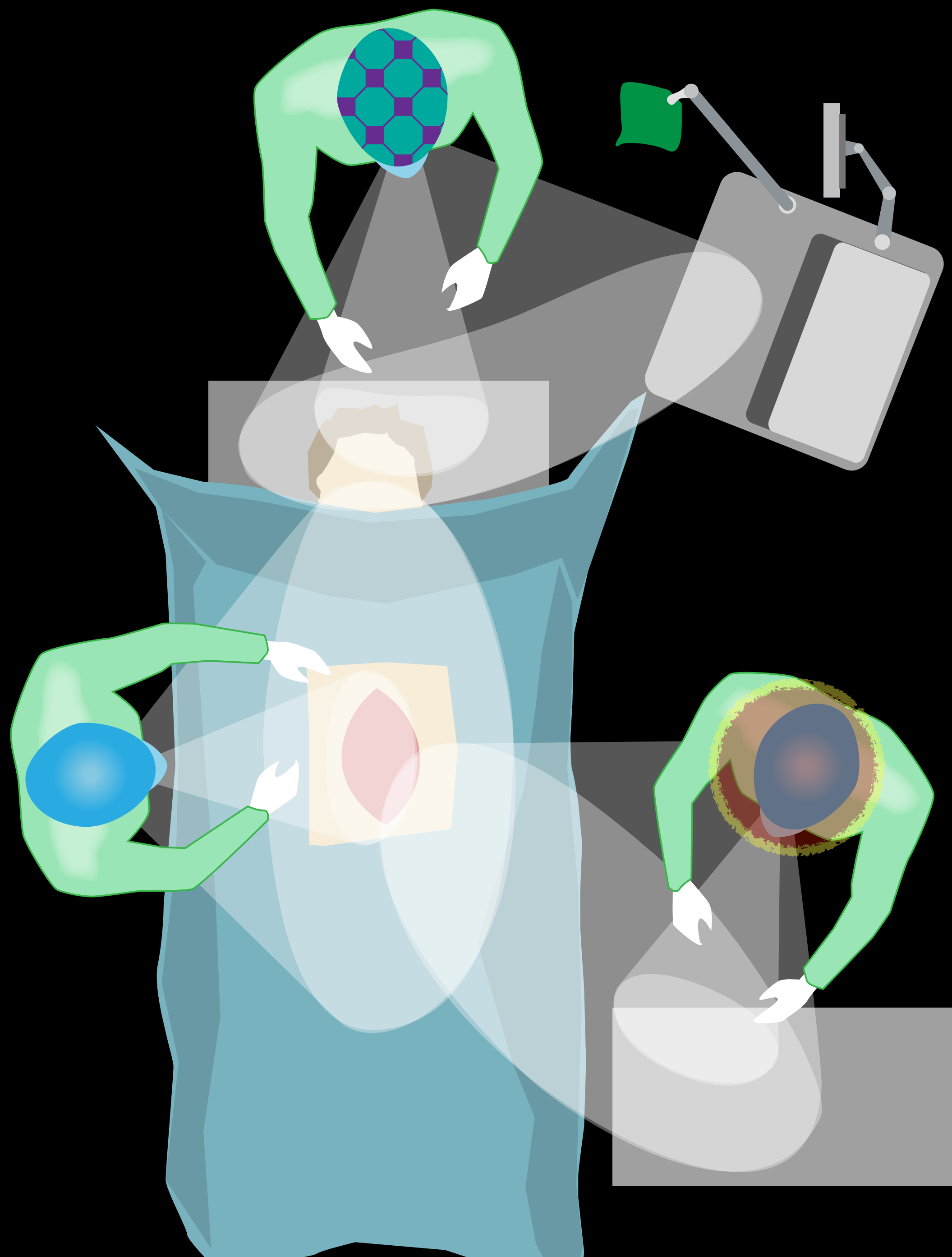


















Sharing perspectives  
from outside medicine



**Risk, error, recovery  
and resilience**



Introducing ...



# Phil Bayman



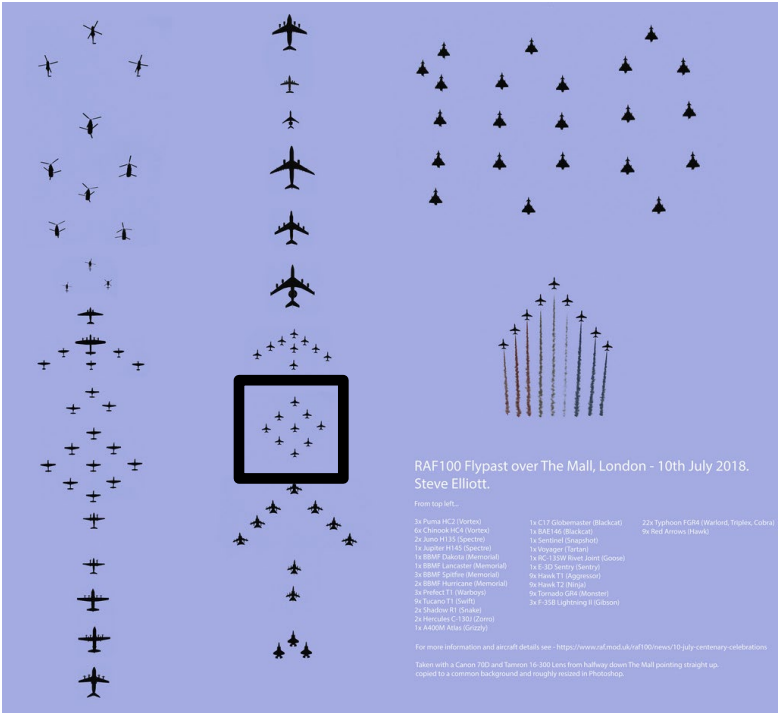
## RAF & Royal Navy

- Mainly Tornado & Hawk
- Fighter instructor
- Performance coach
- 4500 hours, 450 students

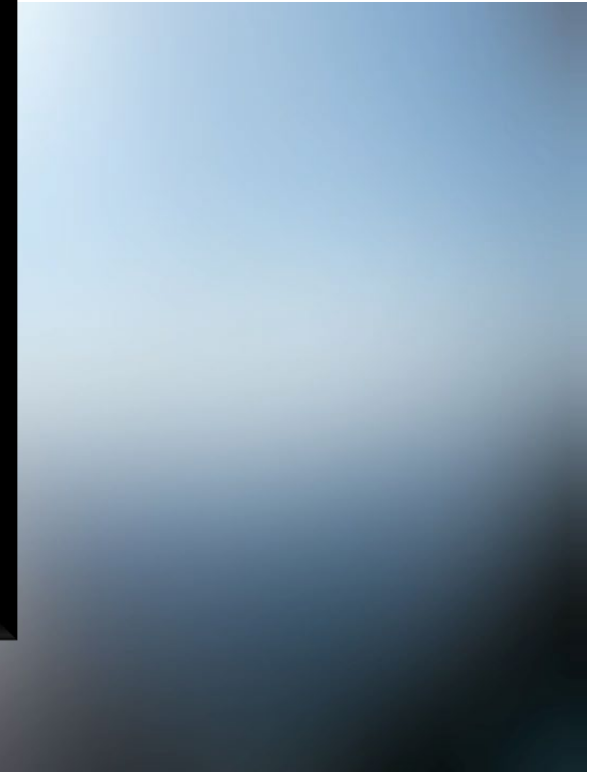




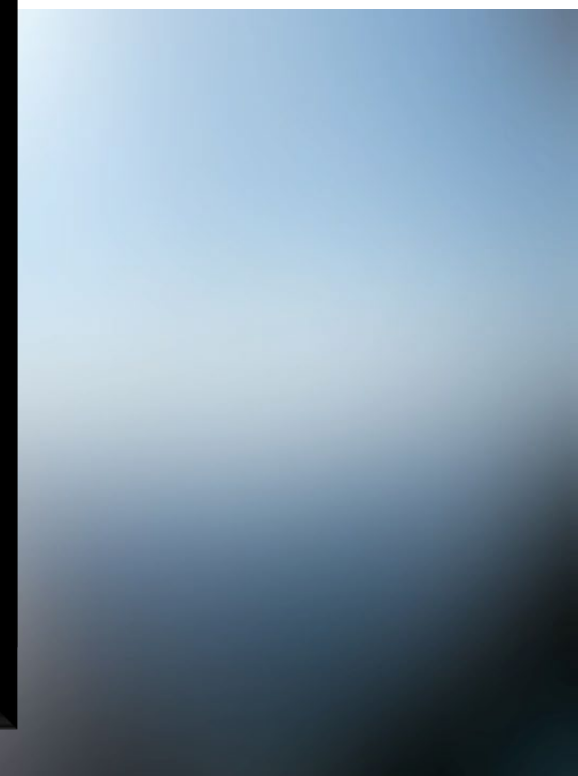
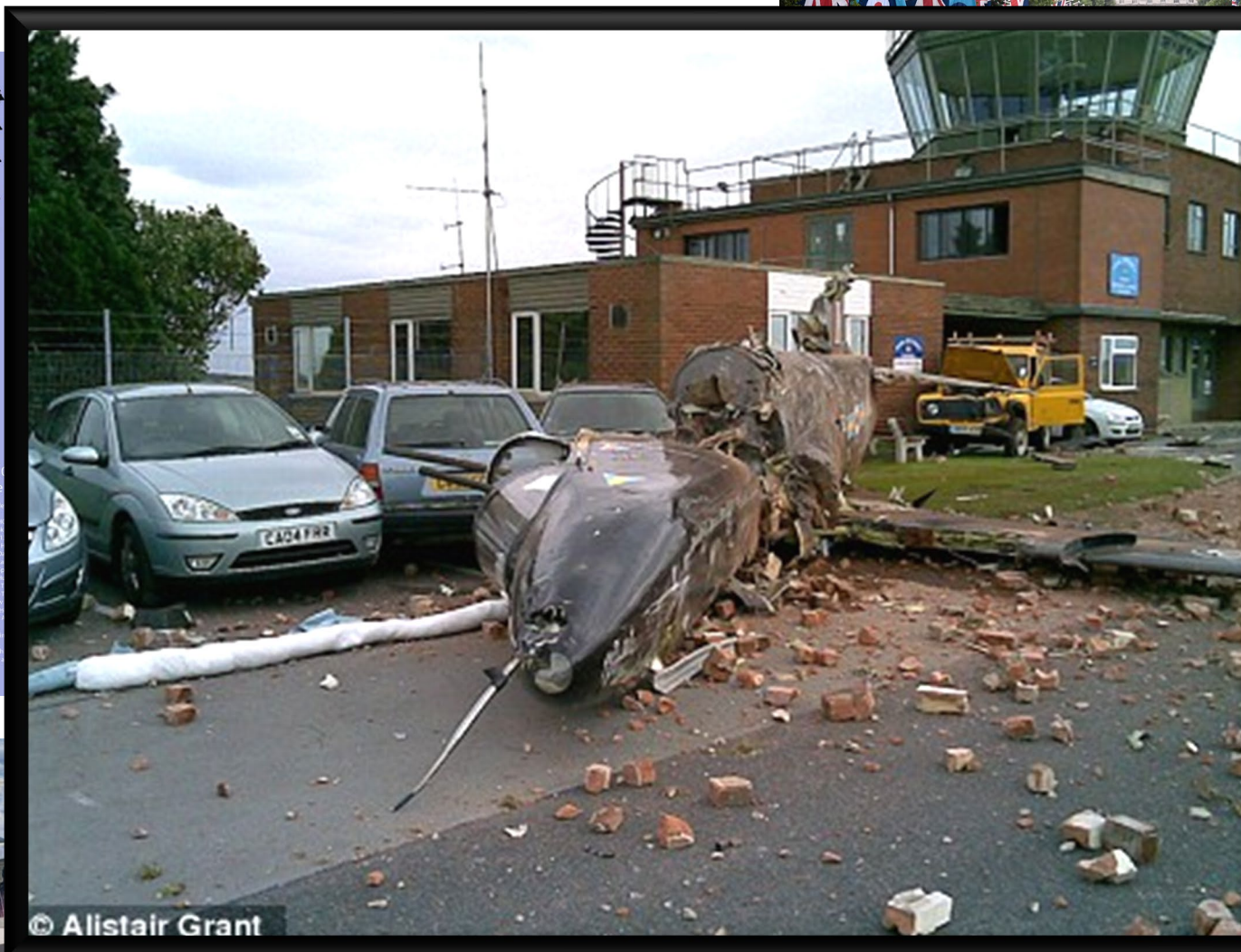
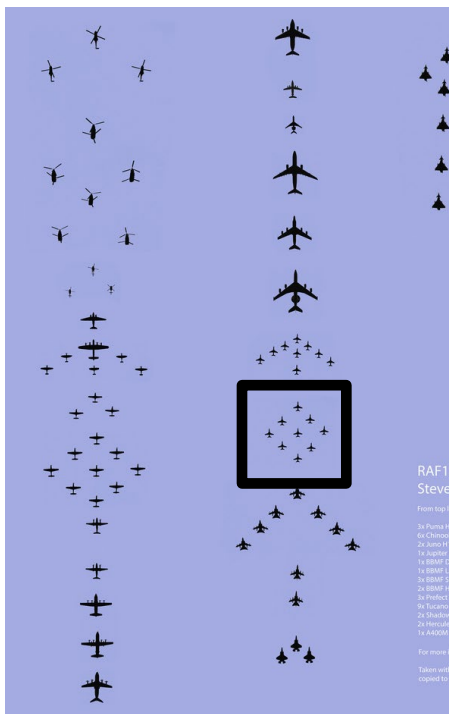
# What its like ... RAF 100













6<sup>th</sup> January, 2021  
Presentation for Gresham College

What surgeons can learn from  
polar explorers and fighter pilots

Response to a lecture by  
Professor Roger Kneebone

Dr Dougal Goodman OBE FREng  
Vice President  
The Foundation for Science and Technology

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# Covid-19

Stay at home

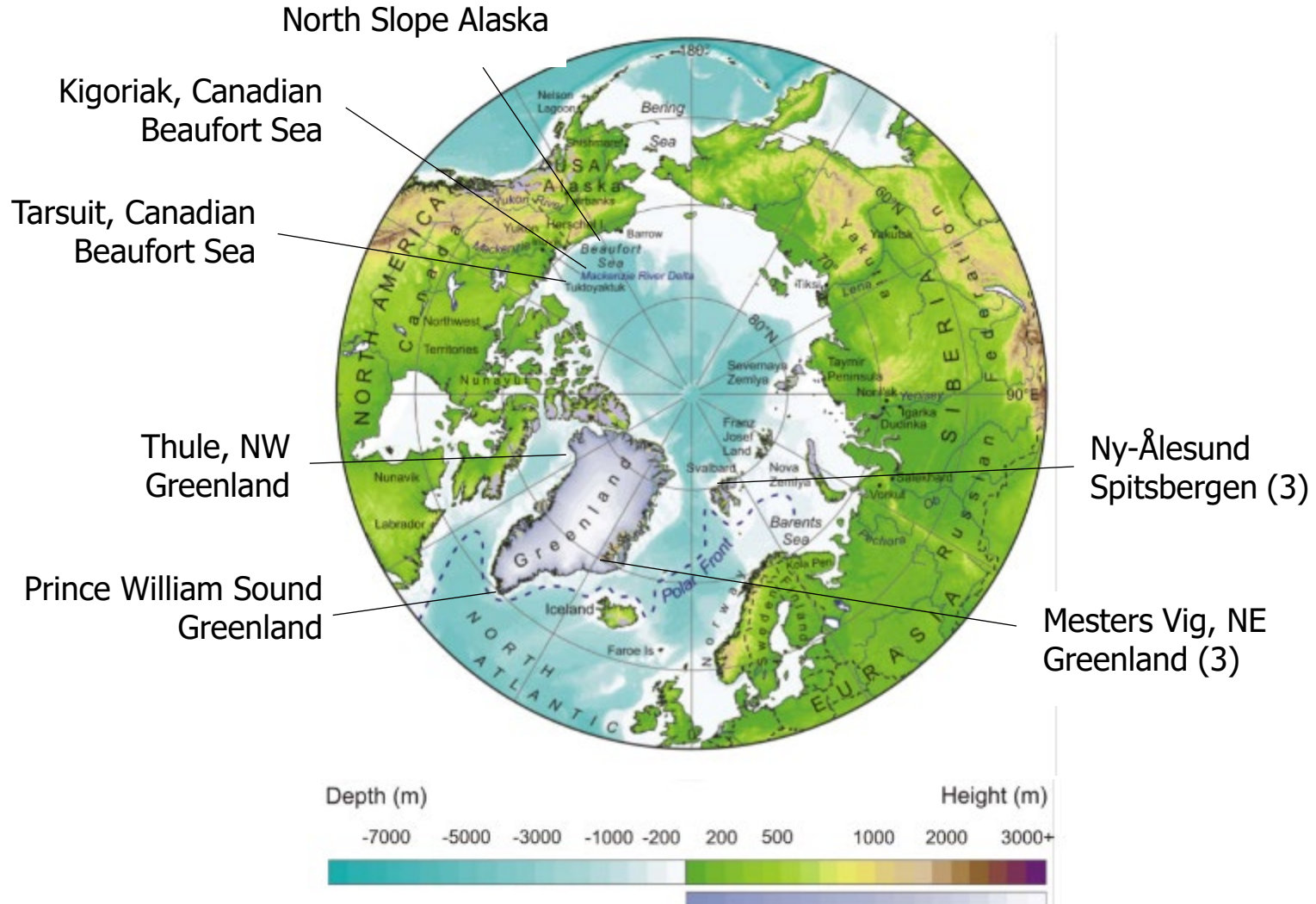
Protect the NHS

Save lives

*Assess the risk*



## Arctic Expeditions and Visits









# Antarctic Expeditions and Visits

## **BAS on South Georgia and South Orkney Islands**

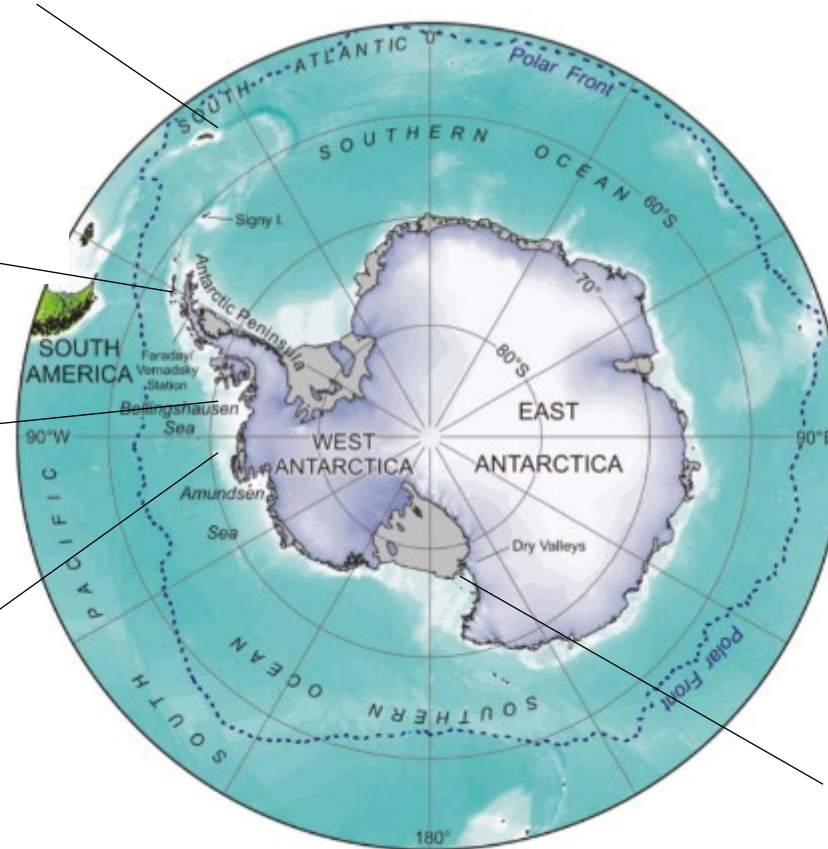
KEP, Bird Island  
Signy Island

## **BAS Bases**

Rothera,  
Fossil Bluff  
Sky Blue  
Halley

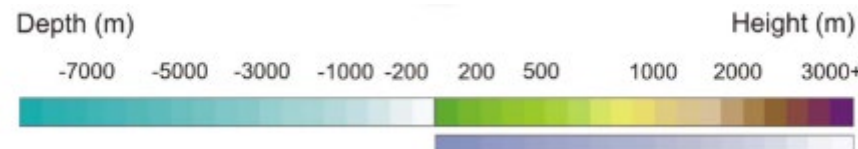
## **Voyage on Fram**

Weddell Sea  
Antarctic Circle



## **US Antarctic Research Programme**

McMurdo Sound  
Erebus Glacier  
Tongue

















Victory awaits him who has everything in order — luck, people call it. Defeat is certain for him who has neglected to take the necessary precautions in time; this is called bad luck.

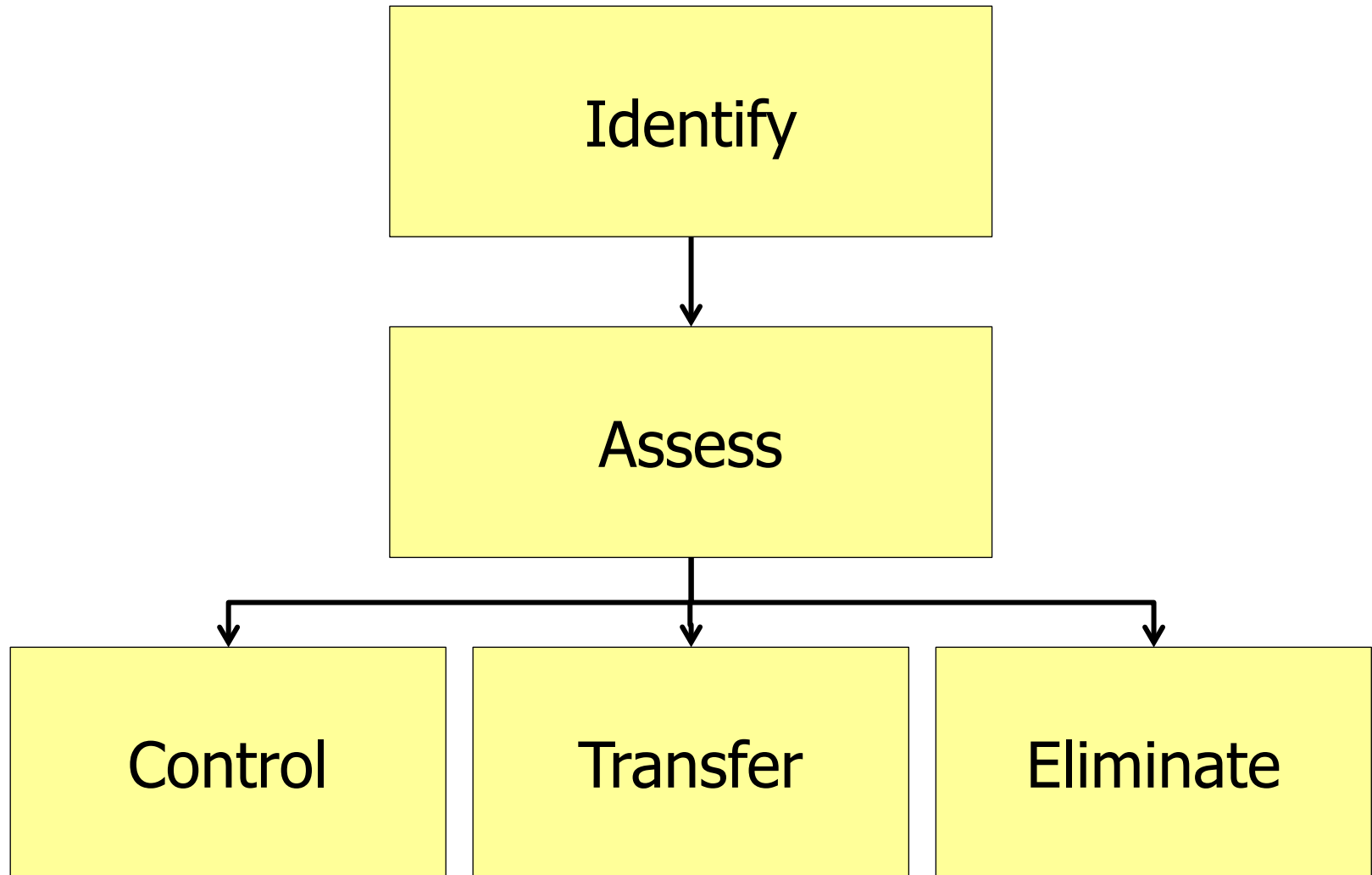
— from *The South Pole*, by Roald Amundsen

For scientific leadership, give me Scott; for swift and efficient travel, Amundsen; but when you are in a hopeless situation, when there seems to be no way out, get on your knees and pray for Shackleton.

— Sir Raymond Priestley



# Fundamentals of Risk Management





# What is an acceptable risk?

## A senior management decision

### As Low As Reasonably Practicable (ALARP)

$\text{Risk} = \text{Consequences} * \text{Vulnerability} * \text{Likelihood}$

Role of Standards and Regulations - so far as is reasonably practicable  
("SFAIRP")



# Comparing Notes

## Surgeons

- Training
- Special skills
- Simulation
- Team dynamics
- Hospital rules and regulations
- Professional conduct
- Liability issues
- Hippocratic Oath – do no harm
- Take measured risks
- Learn lessons
- Peer review
- Performance statistics
- Check lists

## Explorers

- Training and fitness
- Special skills
- Scenario analysis
- Look after each other
- Risk assessments
- Improvise, innovate, adapt
- Kit – clothes, cooking, travel, tent
- Learn lessons from near misses and accident reports
- Discuss plans with others
- Track record
- Communication
- Check lists