

20 IMPERATIVES OF SCIENCE



CHANCE IS FUNNY

Differences and chance cause variation.
Randomization avoids bias.
Controls are important.
Extreme measurements may mislead.

IT'S MORE COMPLICATED THAN THAT

Dependencies change the risks.
No measurement is exact.
Extrapolating beyond the data is risky.
Study relevance limits generalizations.

UNIVERSE ISN'T ON YOUR SIDE

Correlation does not imply causation.

DON'T BE SILLY

Scientists are human.
Data can be dredged or cherry picked.
Seek replication, not pseudoreplication.

PLAY WITH DICE MORE

Significance is significant.
Separate no effect from non-significance.
Effect size matters.
Bigger is usually better for sample size.

STOP AND THINK

Bias is rife.
Beware the base-rate fallacy.
Feelings influence risk perception.
Regression to the mean can mislead.