

“WASPS”  
A Breakthrough  
Animal Monitoring System  
for  
Biomedical Research

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Co-Founder & CEO



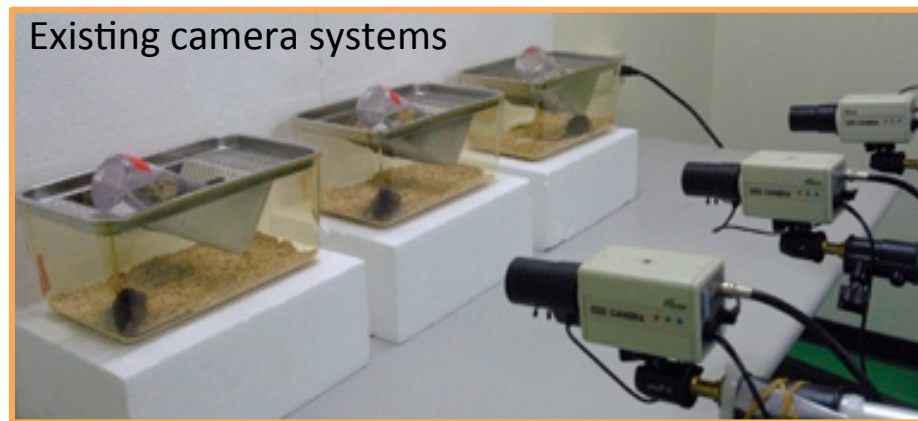
CASCUBE Ltd

# Why:

1. So many incurable diseases?
2. Drug and biomedical research so costly and time-consuming?

# One reason:

- Animal monitoring based on video recording:
  - Inefficient
  - Inconsistent
  - Unreliable
- Video cameras **only track 1 animal at a time!!!**



# No Animal Research, No Medicines...

Vaccine



Medicine



Device



Drug delivery



Techniques

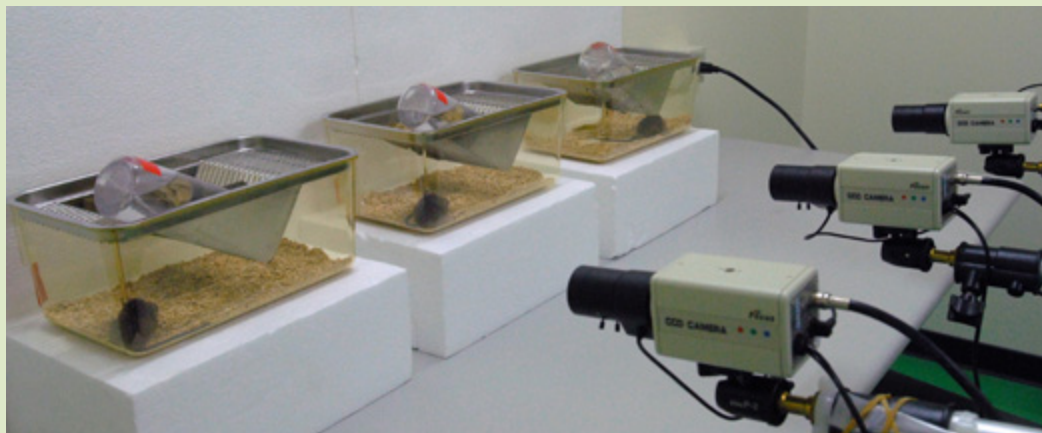


Disease models

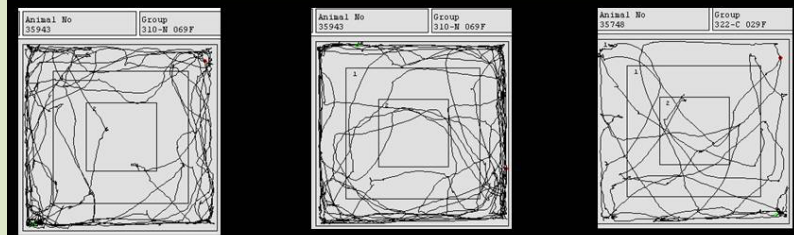
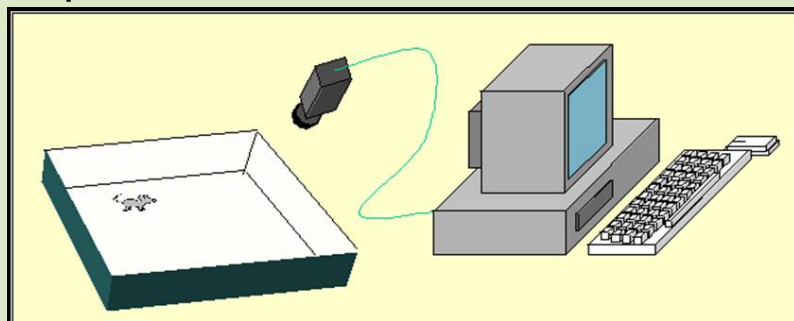


# Cameras: one animal at a time

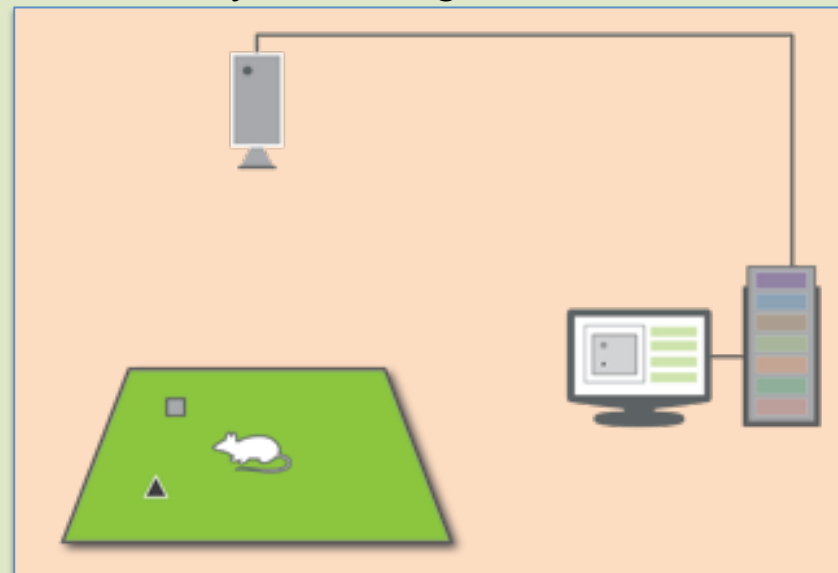
## Home Cage Activities



## Open Field Test



## Novel Object Recognition



# CASCUBE

**Mission:** Drastically improve the efficiency and quality of drug & biomedical research via innovations in animal testing

**Support:**



# WASPS

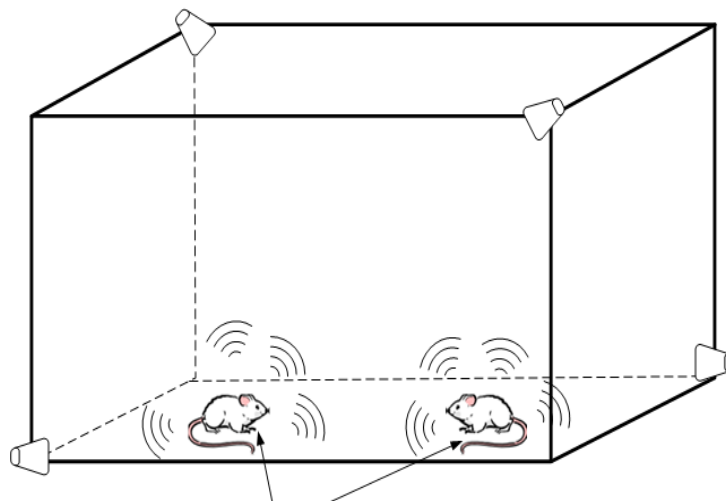
Wireless Animal Spatial Positioning System

World's 1<sup>st</sup> and only system capable of

- Large number (1000's)
- Simultaneous
- Real-time
- 3-D
- Ultra-Precise (mm)

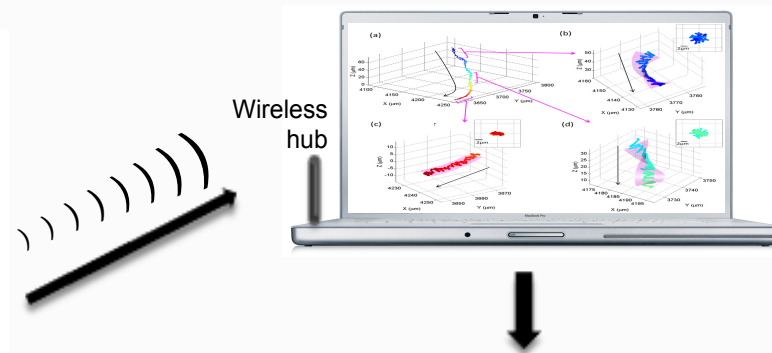
# WASPS

Base  
Receivers



Tracking Units

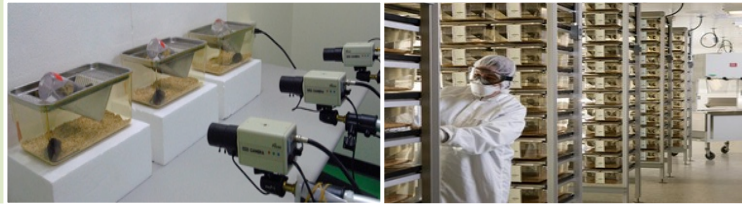
Data fusion & Processing



Behavioral Analysis & Output



# Breakthrough (1) – Efficiency



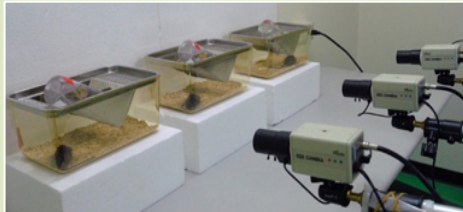
A typical expt. (60 mice, 24-hr monitoring)	Cameras	WASPS	Saving w/ WASPS
Cost/mouse (US\$)	12	12	
Maintenance cost/mouse/day (US\$)	2	2	
Labor cost (1 FTE)/day (US\$)	200	200	
<b>Time / expt (days)</b>	<b>21</b>	<b>1</b>	<b>95 %</b>
Animal Cost	720	720	
Maintenance cost for 1 expt	2,520	120	
Total Labor Cost	4,200	200	
<b>Total cost / expt (US)</b>	<b>\$7,440</b>	<b>\$1,040</b>	<b>86 %</b>

Inefficient  
Expensive  
Labor-intensive

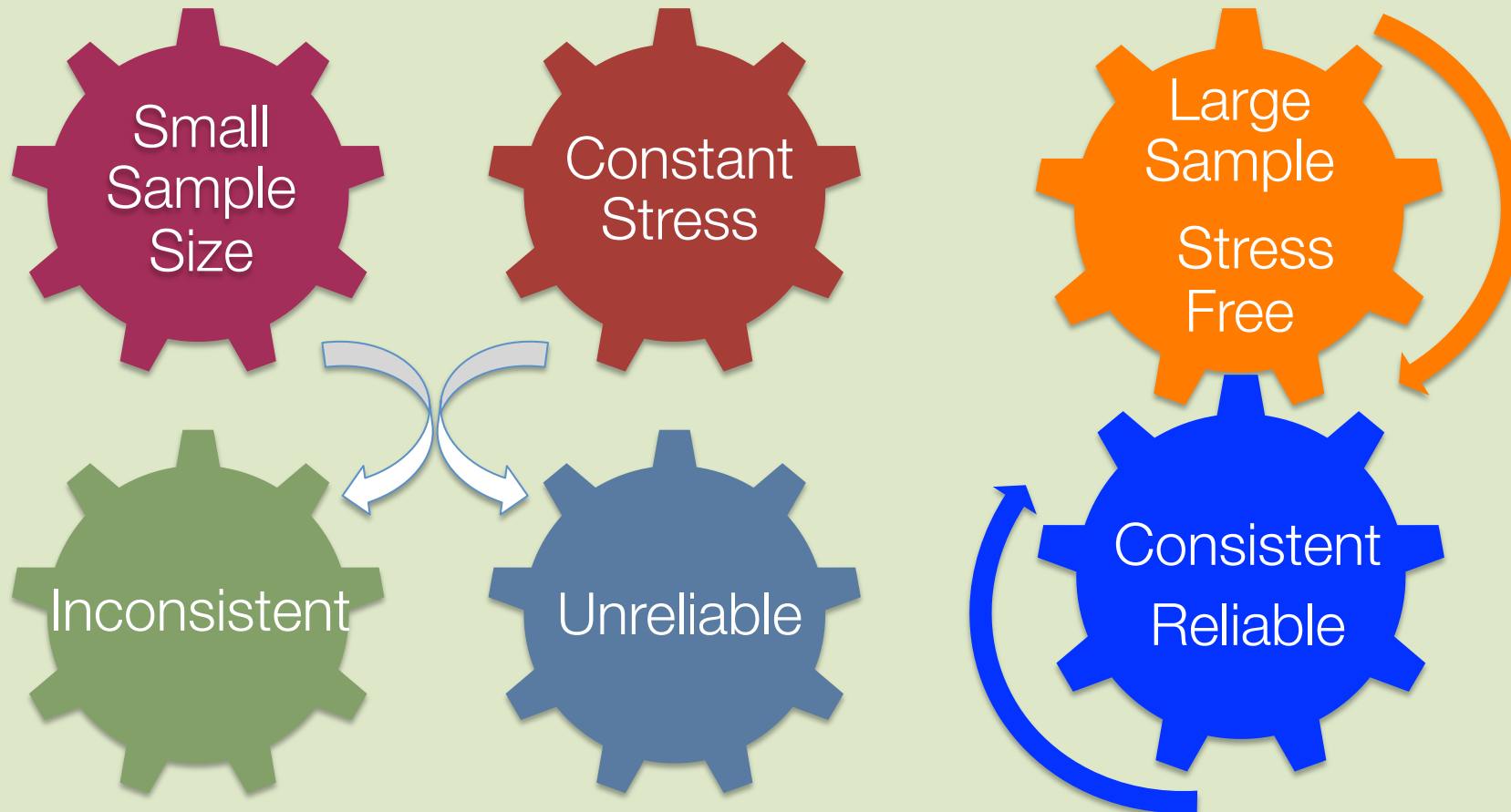
Time saving  
Cost reduction

# Breakthrough (2) – Data Quality

## Cameras

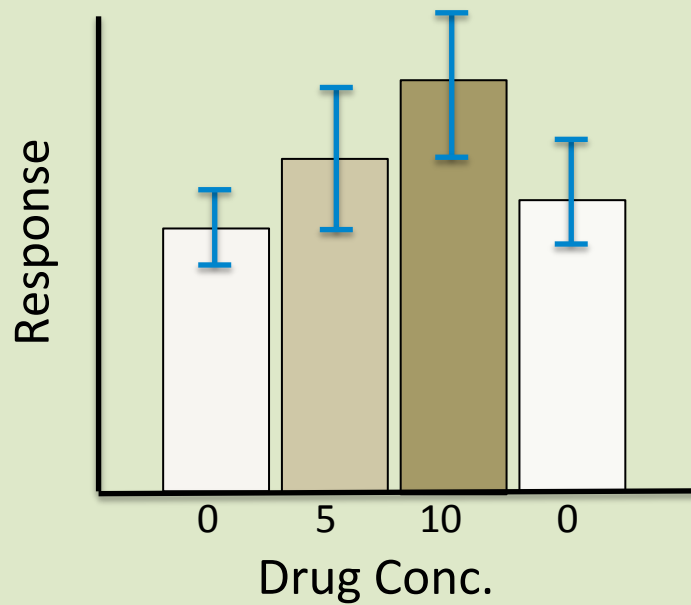
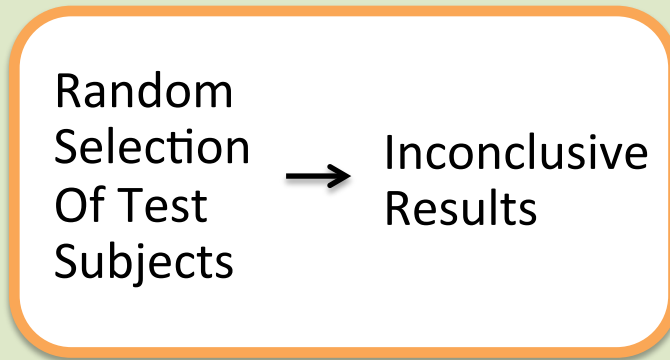


## WASPS

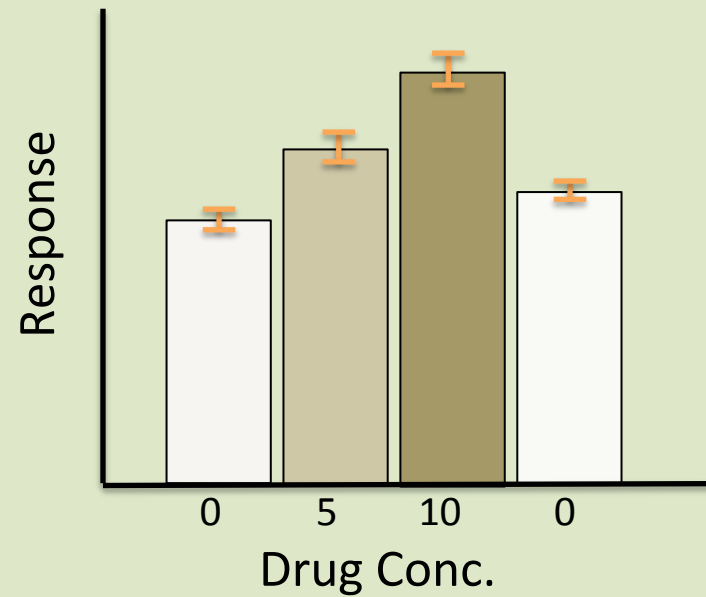
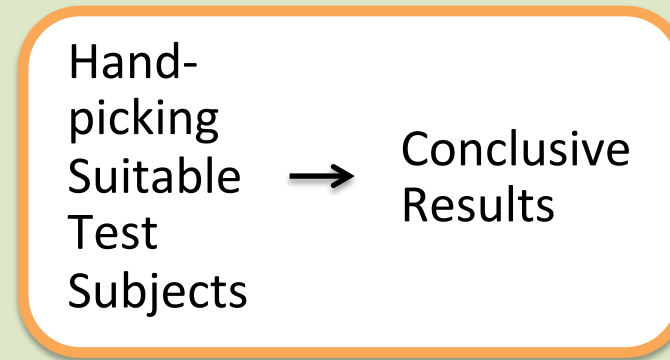


# Breakthrough (3) – Methodology

## Cameras



## WASPS



# Competitive Advantages

Capability	Cameras	WASPS
Large-scale	X	✓
Long-term Tracking	X	✓
Interactive Behaviors	X	✓
Fast Data Rendering	X	✓
Small Data File	X	✓
Sample Pre-selection	X	✓

# Market

- Global and scalable
- US & Europe spend > US \$20B on animal studies annually
- Addressable market est. US \$10B
- > 115M animals used annually

# Why:

1. So many incurable diseases?
2. Drug & biomedical research so costly & time-consuming?

## WASPS

- ★ Game-changing technology
- ★ Time saving + Cost reduction
- ★ New and better drugs
- ★ Faster to market
- ★ New medical discoveries



C A S C U B E

T  
echnology

S  
cience

I  
nnovation

E  
xcellence

