



Creature Study

Rodents

Chi-Chih Wang

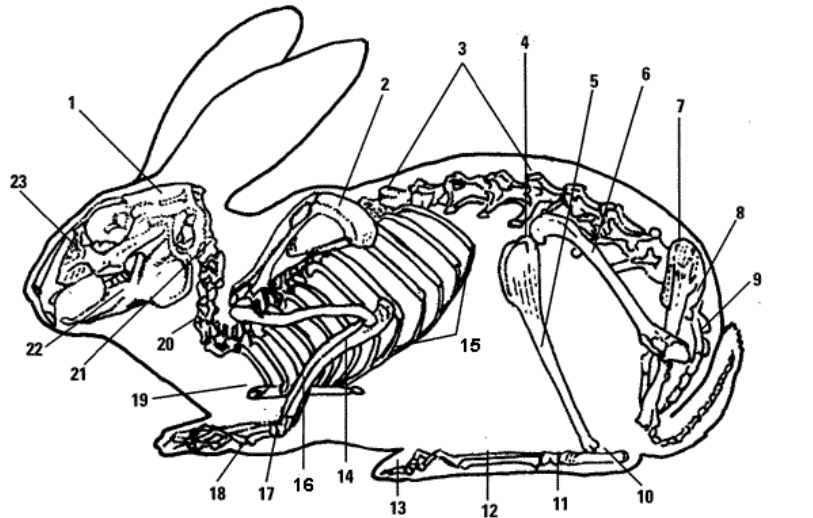
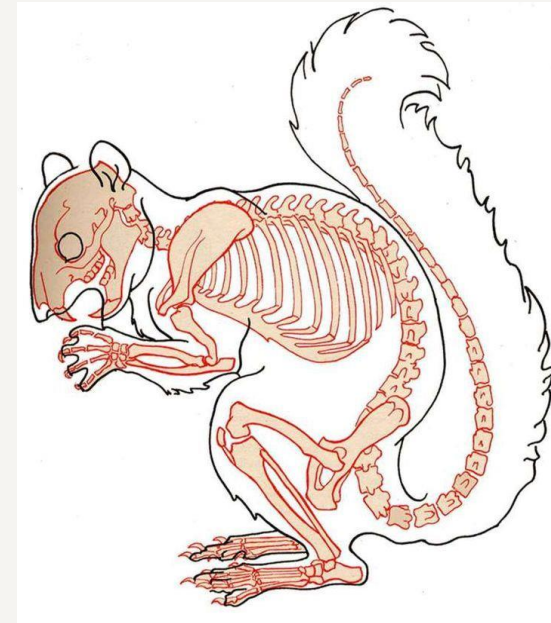
Elizaveta Kuznetsova

Keyi Cheng

Body structure

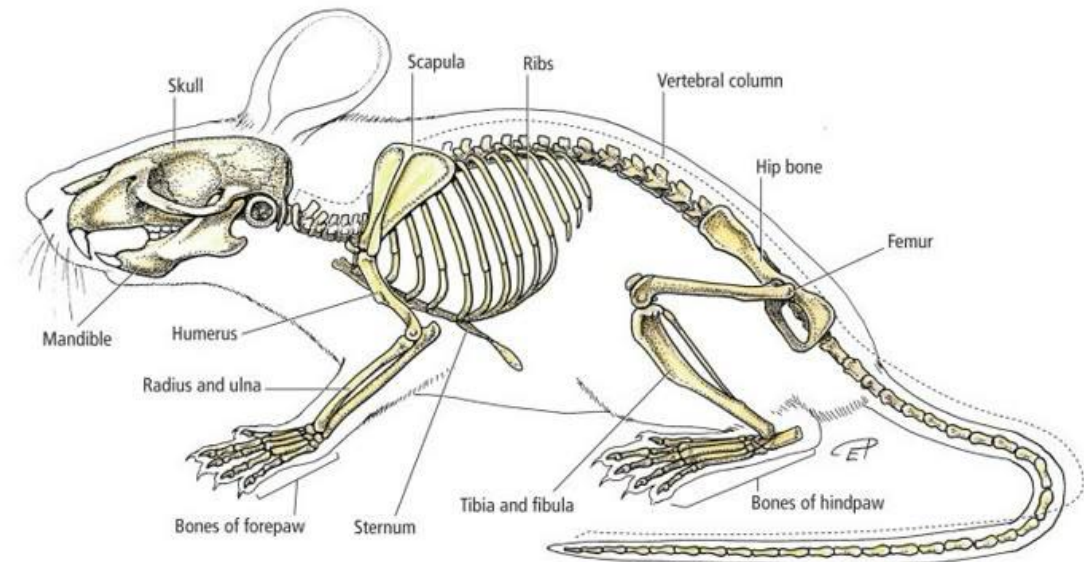
Anatomy

- Rodents are mostly **plantigrade**.
- The Scapular Spine Shape.



- | | | | | |
|--------------------|---------------------|----------------|------------------------|--------------|
| 1. Cranium (Skull) | 6. Femur | 11. Tarsus | 16. Radius | 21. Atlas |
| 2. Scapula | 7. Ilium | 12. Metatarsus | 17. Carpus | 22. Mandible |
| 3. Spine | 8. Sacrum | 13. Phalanges | 18. Metacarpus | 23. Maxilla |
| 4. Fibula | 9. Caudal Vertebrae | 14. Ulna | 19. Sternum | |
| 5. Tibia | 10. Calcaneus | 15. Ribs | 20. Cervical Vertebrae | |

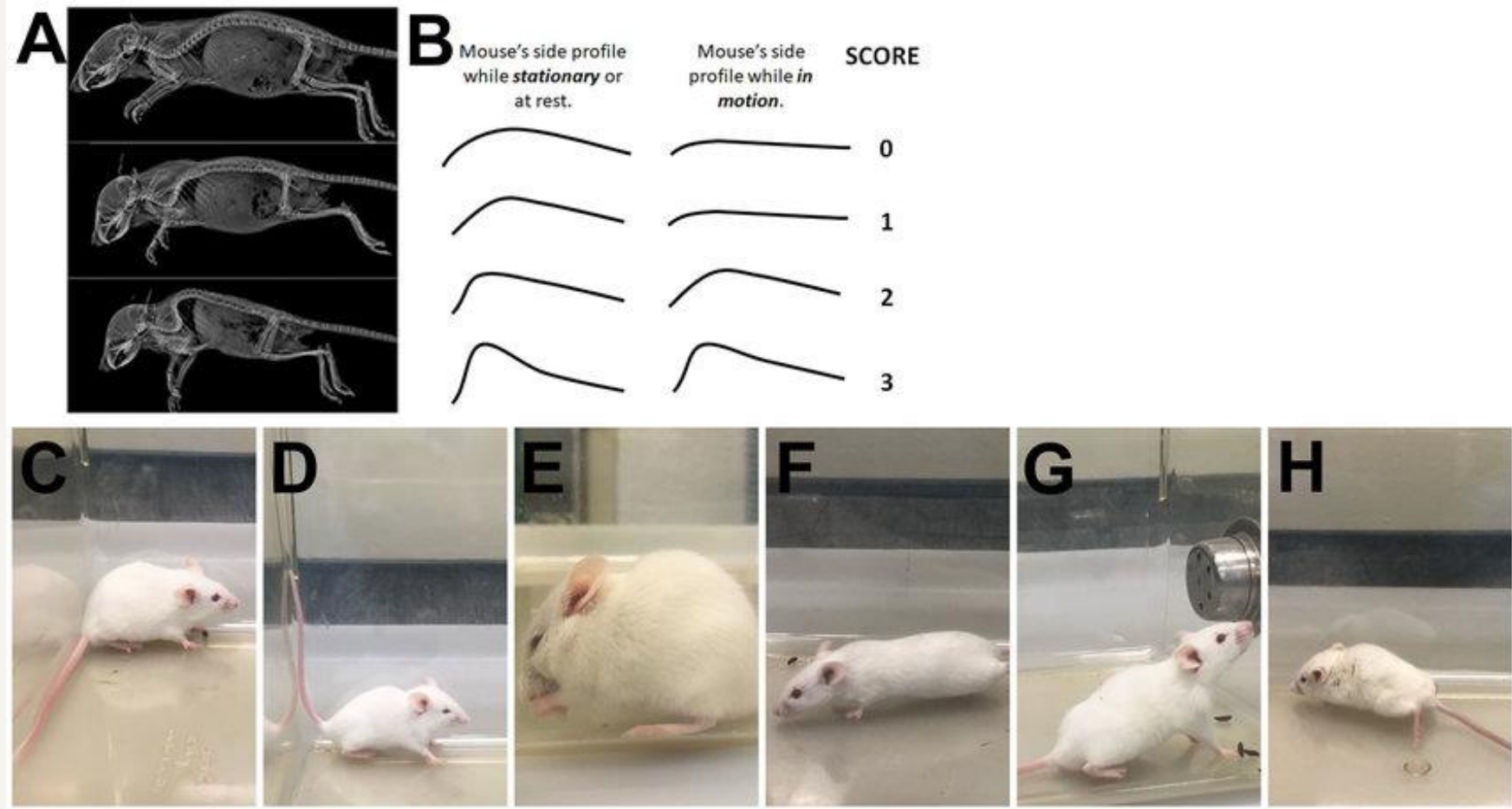
SKELETON OF THE MOUSE



Body structure

Anatomy

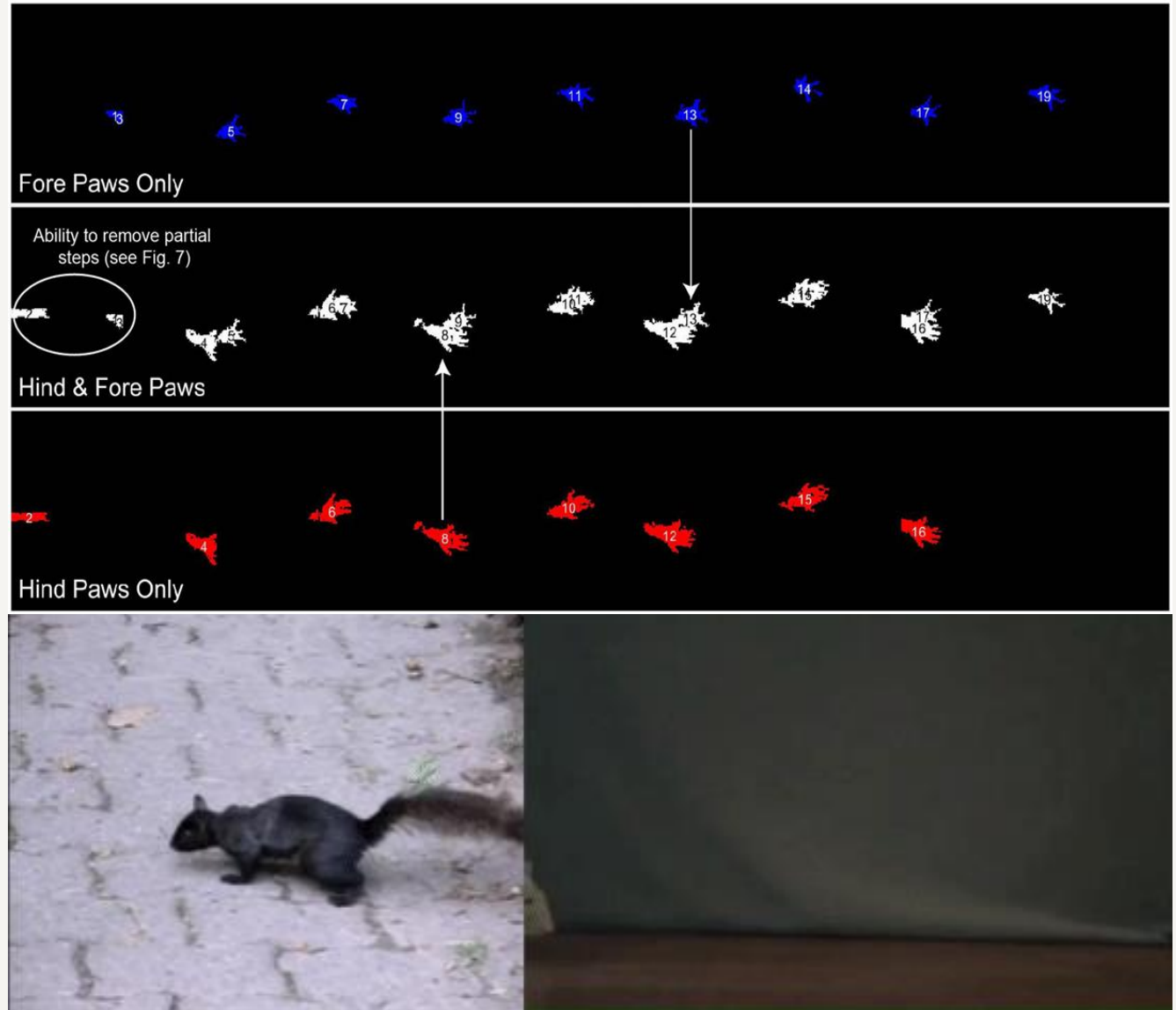
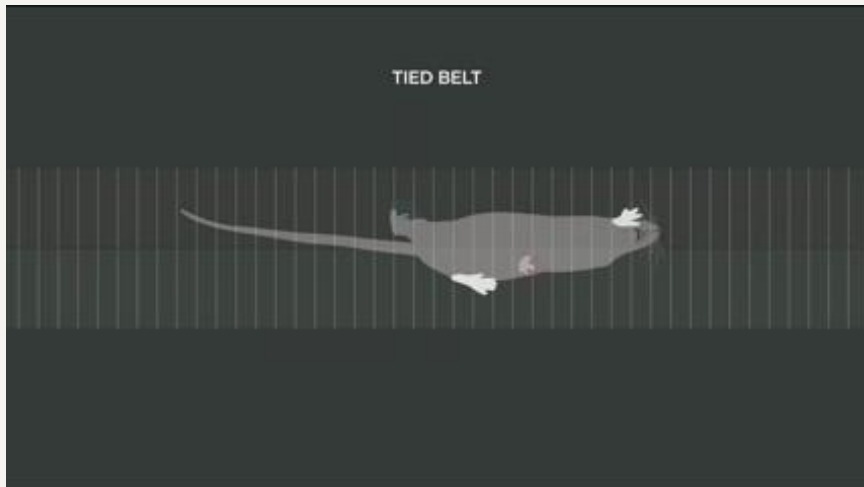
- Rodents have a flexible spine that allows them to squeeze through narrow spaces.



Movement

Walking

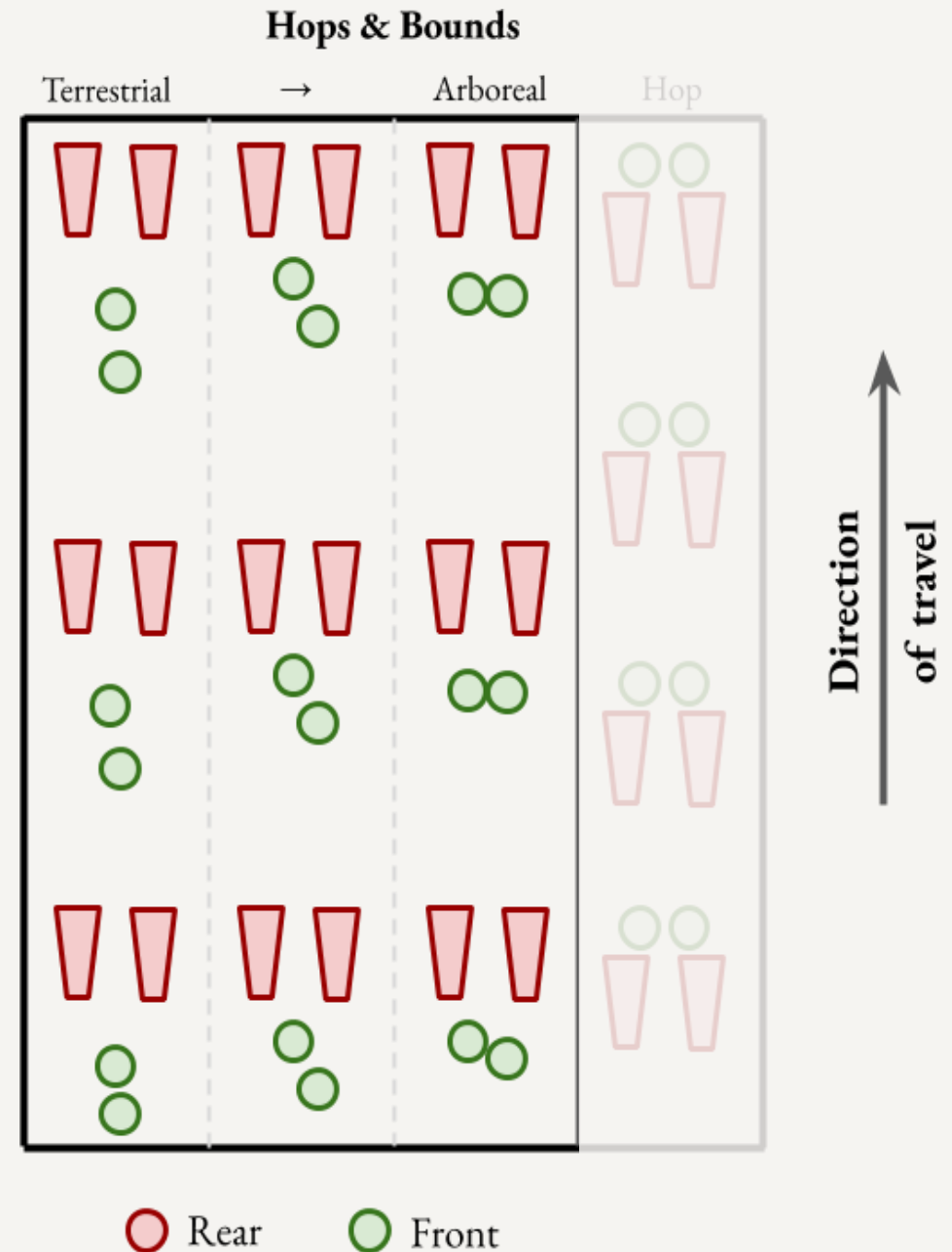
- Rear feet land closely to front feet.
- They move limbs in diagonal pairs.



Movement

Bounding

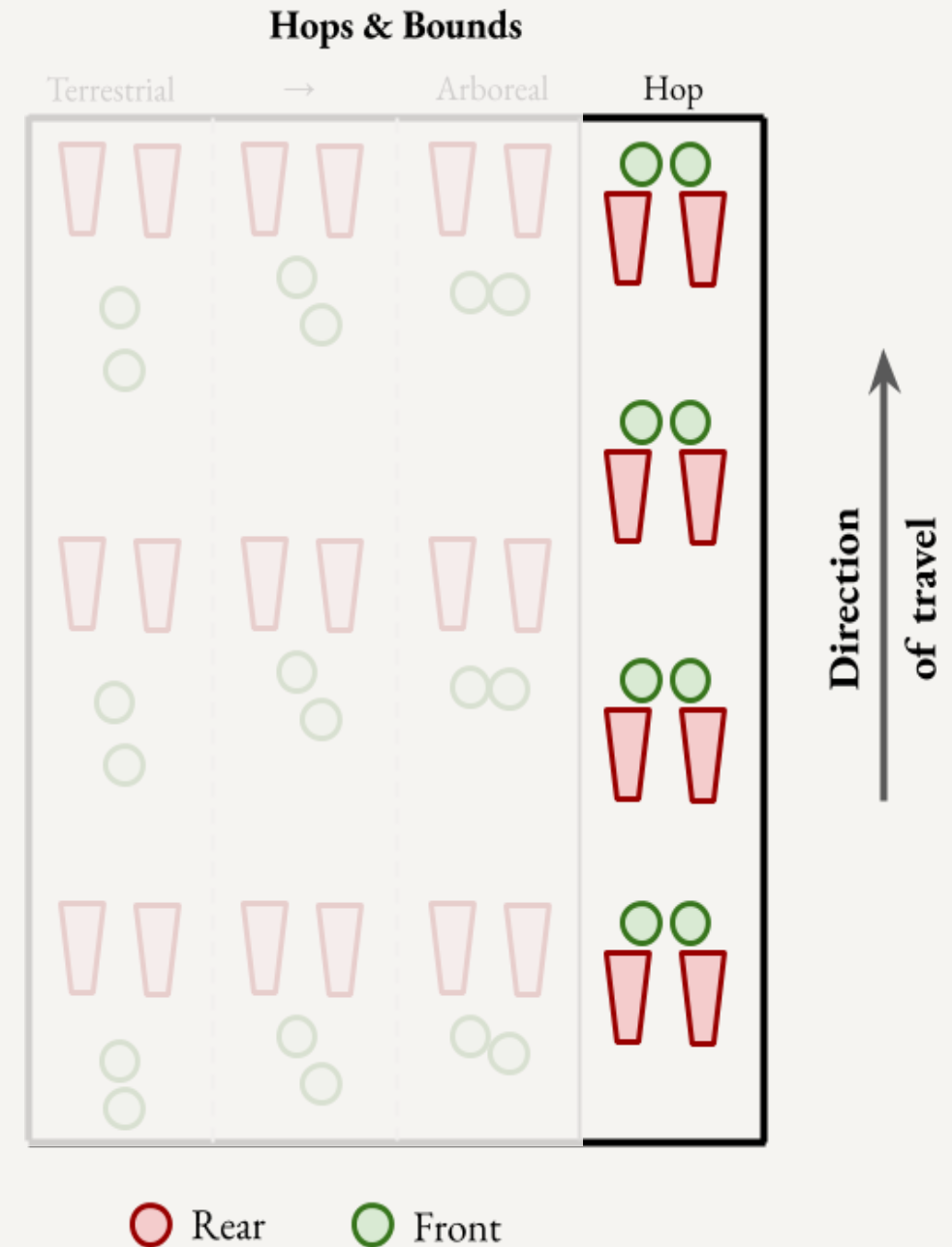
- Rear feet land as front feet lift, creating an **airborne phase**.
- Ground-dwellers have a wider front-foot offset than tree-dwellers.



Movement

Hopping

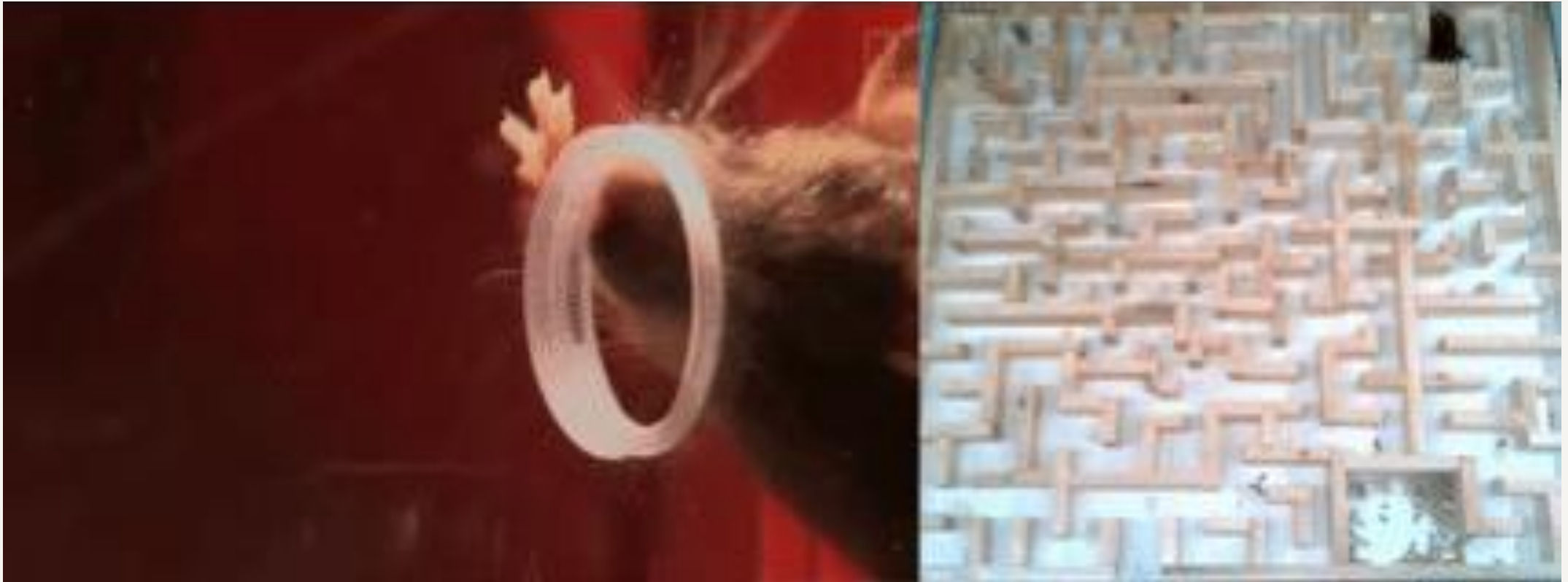
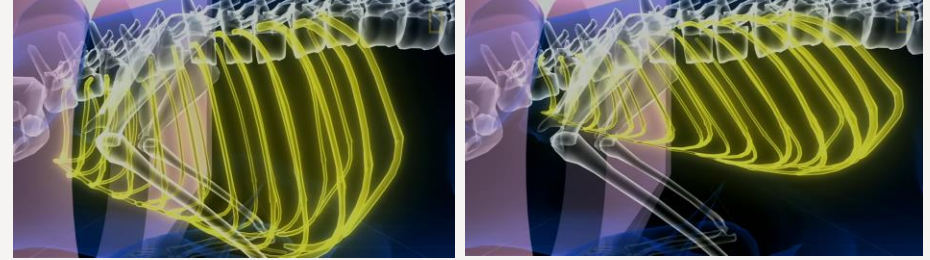
- Front feet land side-by-side, followed by rear feet.
- All four feet plant before the next stride.



Movement

Flexibility

- Able to flatten their ribcages make them highly compressible.
- So don't be afraid to squash and stretch your mouse!



Characteristic Action Logic

- **Personality**
Cautious, highly sensitive to environmental stimuli
- **Action Core: Sniffing**
The main source of information collection
 - The tip of the nose moved up and down rapidly, accompanied by slight tremors of the head and a search for direction.
 - The repeated expansion and contraction of the chest cavity caused by sniffing, as well as the vibration of the beard



Characteristic

Action Logic

- **Personality**
Cautious, highly sensitive to environmental stimuli
- **Action Core: Sniffing**
Forelimb: Executing decisions
Hind limbs: Movement mechanism
 - The initial decision is made through the sense of smell, and then further exploration or standing on the front half of the body to collect more information, the hind limbs are relatively lazy.



Characteristic

Action Pattern

- **2 Easy Divisions: Strange & Safe**

- **Strange Environment**

Stay still- Rapidly move/ rotate- Stay still

-It is very similar to the sensation of eye movement in character animation.

-This also happens in the learning process and complex situation due to information collection and cautiousness to danger.

- **Safe Environment**

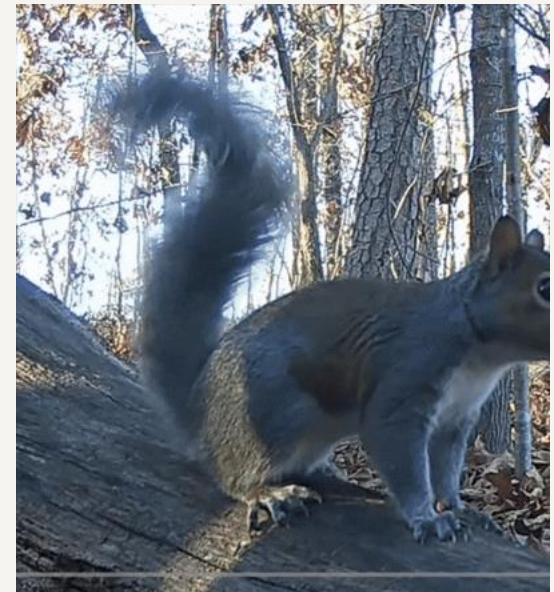
Spline instead of blocking.

-The behavior of the rodents became more continuous and stable, with the sniffing and information-gathering behaviors decreasing.

-It occurs more in low-risk environments, such as in nests or during group activities.

Characteristic Tail Details

- **Stay Still Usually**
 - Long-tailed rodents do not flap their tails like cats and dogs, It almost stay still and follow a certain curve when moving.
- **Flap as Signal**
 - Squirrels use it to communicate with each other and could twitch due to small stimuli when at rest.



Facial Eyes

- Rodents have limited depth perception because their eyes are on either side of their head.
- They do have the ability to move each eye independently.
- Are only able to focus on an object that is about one or two feet away.
- They don't turn their heads to look as much as they tilt their entire body to aim an eye at a sound.
- Move head, scanning the environment to get depth perception.



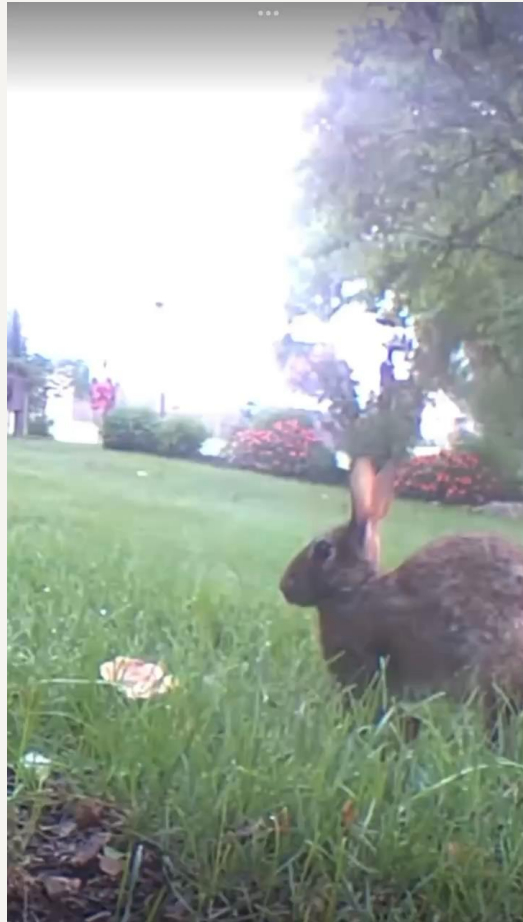
Facial Nose

- Nose is almost never still.
- It vibrates at a high frequency.
- This should be a constant secondary animation.



Facial Ears

- Ears are constantly moving and twitching
- Can do a 270 degrees turn



Facial Teeth



Thank you

Chi-Chih Wang

Elizaveta Kuznetsova

Keyi Cheng

