

# UAB Tree Shrew Core

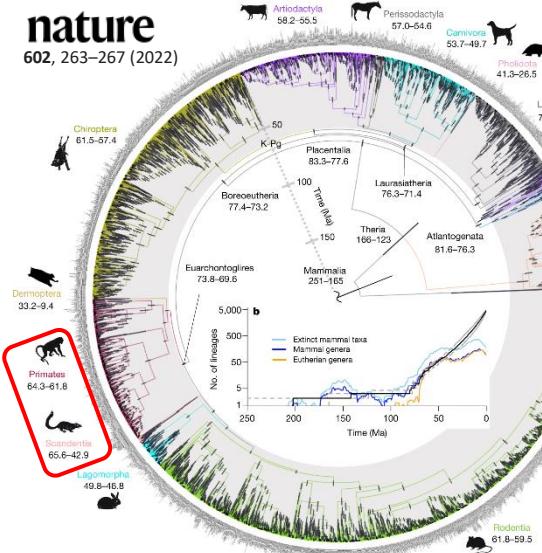
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## A Unique Opportunity for Translational and Pre-Clinical Research

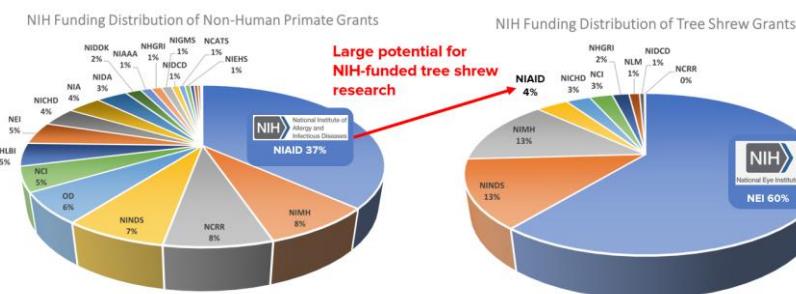
### What Are Tree Shrews?

- Small mammals
- Native to South-East Asia
- Larger neocortex than rats, well-differentiated thalamic nuclei
- Excellent vision and hearing
- *Highest brain-to-body mass ratio* of any mammal (including humans)
- Although squirrel-like in appearance, **tree shrews (order Scandentia) are phylogenetically closely related to primates**



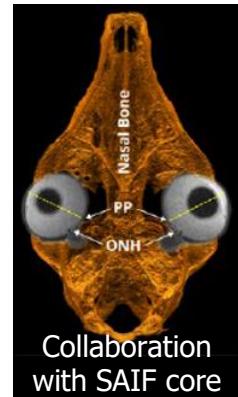
### Why Use Tree Shrews in Research?

- The **NIH** encourage investigators **to choose the best model for their research without constraints**
- Tree shrew models are ideal for **translational and pre-clinical research** due to genetic and anatomic similarities to humans and non-human primates
- Research results are more likely to be translatable compared to common laboratory animals
- Tree shrews offer **several benefits over non-human primates** (rhesus macaque) research:
  - Smaller size: 150-220 g vs. 4-12 kg
  - Lower cost: \$1,065 vs. \$30,000-\$50,000
  - Lower per diem: \$2.01 vs. \$9.48
  - Rapid reproduction:
    - Gestation: 41-55 days vs. 5-6 months
    - Litter size: 1-5 vs. 1
  - Rapid postnatal development and aging:
    - Sexual maturity: 2-3 months vs. 3-7 years
    - Max. lifespan: 10 vs. 40 years
  - Large potential for NIH funding: \$10 million vs. \$2.0 billion



### A Unique Opportunity

- Tree shrew research is rapidly growing
- No commercial tree shrew vendor exists
- UAB has the only Tree Shrew Core of the world
- We breed Northern Tree Shrews (*Tupaia belangeri*)
- We have established the **largest tree shrew colony in the US** allowing you to use large numbers of animals for research with high statistical power
- Established protocols and collaborations with other UAB cores
- Established disease models:
  - **Infectious Diseases:** Hepatitis (HBV, HCV), Influenza (H9N2), Dengue virus
  - **Neurological/Psychiatric:** Depression, Parkinson's disease, visual perceptual decision-making
  - **Metabolic Disorders:** Diabetes, fatty liver disease, metabolic syndrome
  - **Cancer:** Breast cancer
  - **Autoimmune/Musculoskeletal:** Systemic sclerosis (SSc), rheumatoid arthritis, lupus
  - **Ophthalmology/Vision Research:** Myopia, Glaucoma
- Genome sequencing and recent gene editing are expanding the utility of tree shrews



### How To Begin Using Tree Shrews?

Please contact the UAB Tree Shrew Core: [treeshrew@uabmc.edu](mailto:treeshrew@uabmc.edu)