Identifying and tracking the consequences of inadequate sleep

Research Topics:

1) Model the changes in sleep and wakefulness to determine biological aging due to inadequate sleep.

- **.Use metabolomic techniques to determine molecular changes that leave the animal vulnerable to chronic disease.**

2) Develop a novel actigraphy algorithm that converts activity into sleep and wakefulness calls.

- **Algorithm works better than clinically approved devices**

- **Correlate interim metrics to outcome metrics to determine what patterns of sleep contribute to good and bad outcomes.**
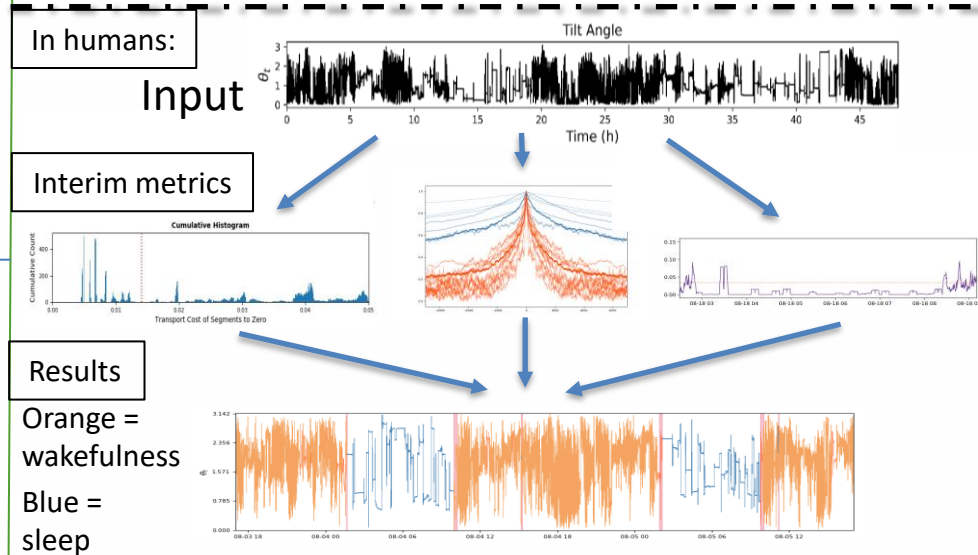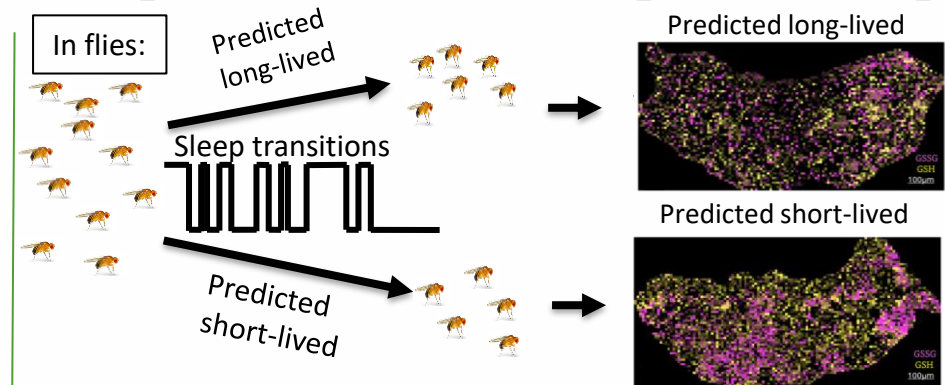
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In flies:
Predicted long-lived
Predicted long-lived
Sleep transitions
Predicted short-lived
Predicted short-lived
Predicted long-lived
Predicted short-lived

In humans:
Input
Tilt Angle
Time (h)
Interim metrics
Cumulative Histogram
Results
Orange = wakefulness
Blue = sleep

Keywords: Sleep, mathematical modeling, actigraphy, cognitive performance, biomarkers