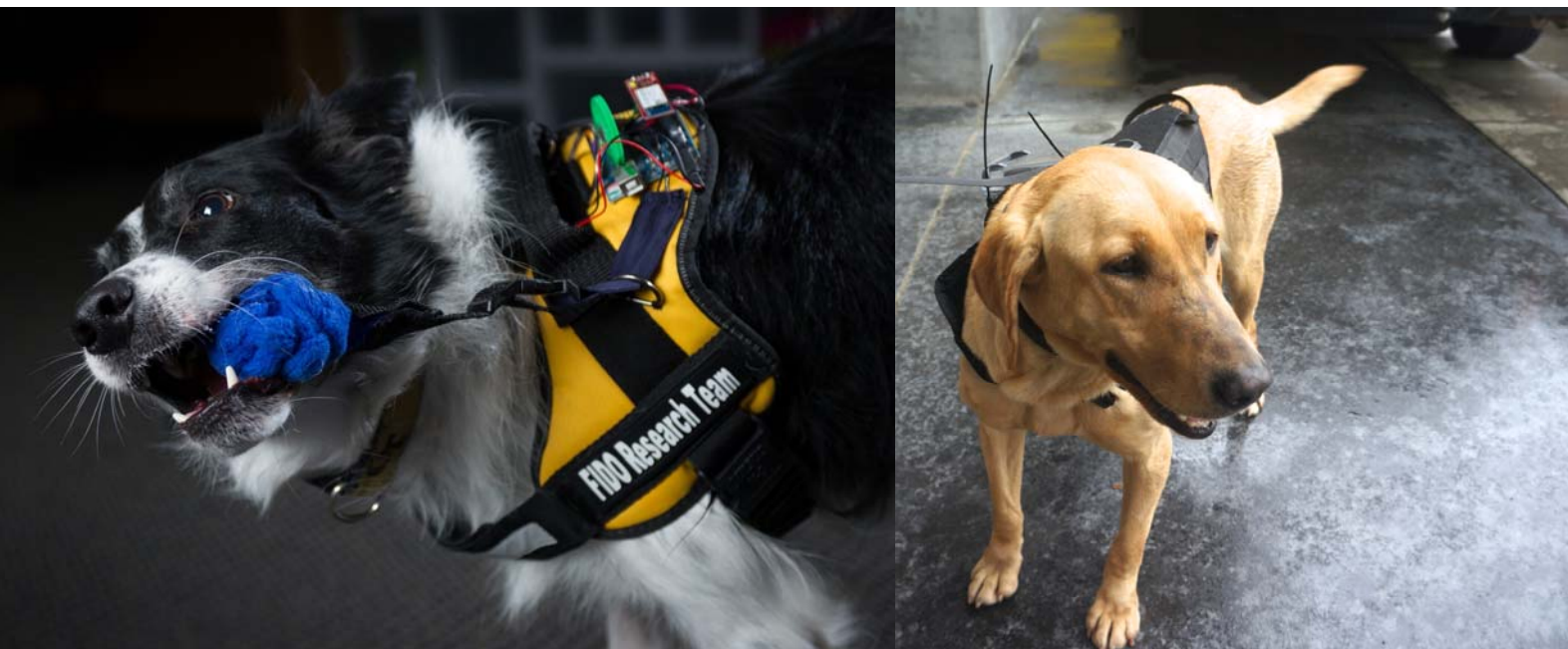


Quantimetric Analysis of the Relationship Between Restfulness & Dog Training Outcomes



Joelle Alcaidinho
Nate Yoder
Stephanie Tai
Kerinne Levy
Paul Mundell



Working Dogs & Technology

- Animal-Computer Interaction Lab @ Georgia Tech
- Canine Instruction with Instrumented Gadgets @ NC State
- Canine Detection Research Institute @ Auburn

Canine Companions



Research Question

Is there a relationship between the amount of nightly rest (inactivity in the evening) a dog receives during Advanced Training and the rate of graduation?

Whistle Activity Monitor



How it works



Attaches to any
dog's collar



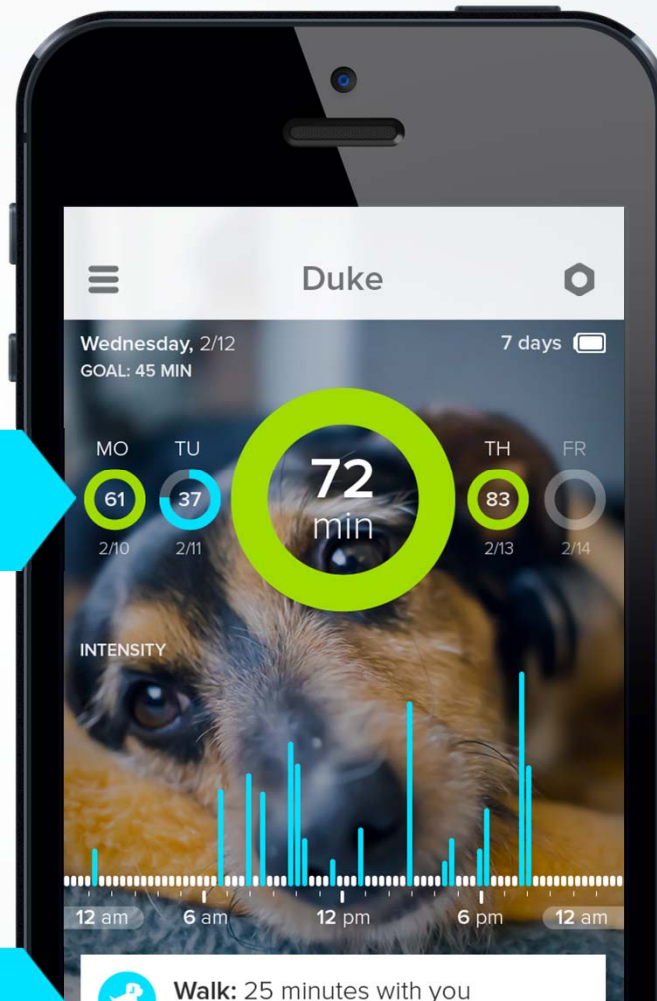
Collects data on
the dog's
activities 24/7



Syncs hourly over
Wi-Fi & Bluetooth

iOS & Android

Swipe the dials to navigate between days

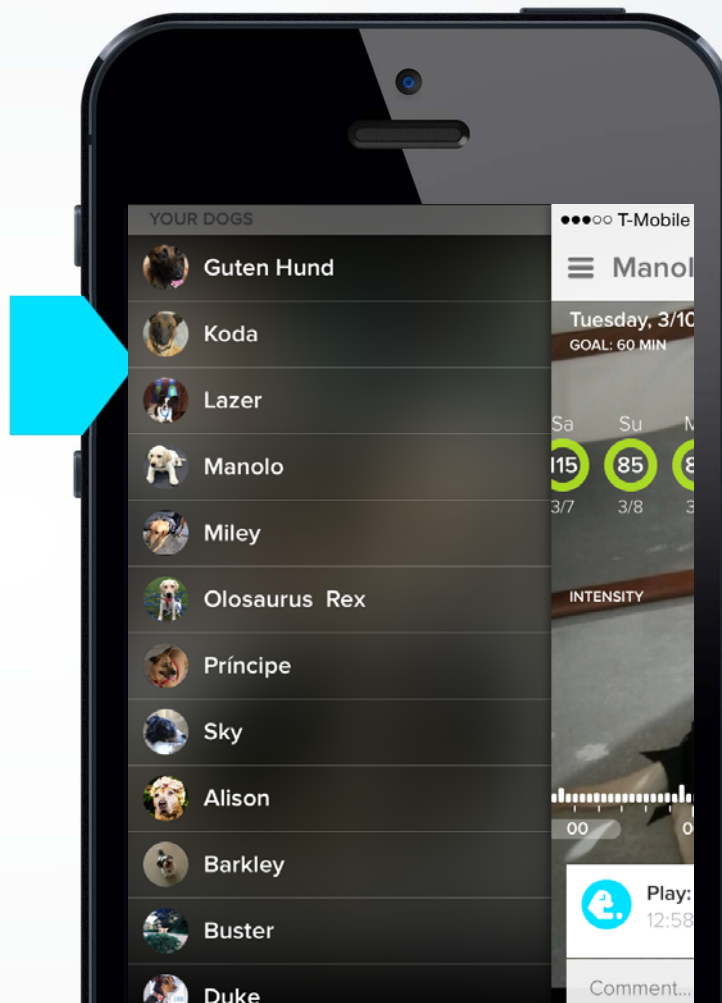


Events, including proximity automatically

Whistle App

List of dogs appears in a column on the left

Whistle mobile application is designed for consumer use by pet



Part 1

Whistle Training Center Placement Guide

June 2014



1. Slide the collar, close to the male snap end, in between the rubber strap & attachment.



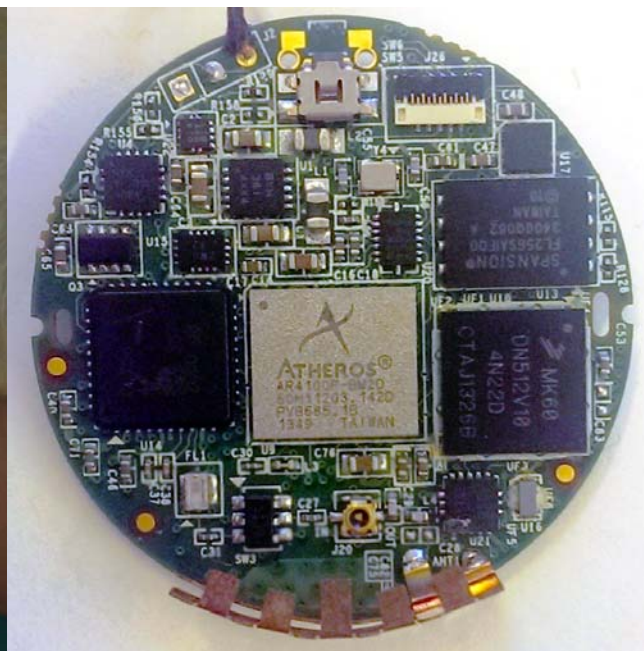
2. Pull the rubber strap taut and secure the closest strap hole over the post with gentle pressure.



3. Fold the adjacent strap over the post, ensuring that the post is securely through the hole.

Adaptation for Kennel Environment

- Breakaway collars
- Attachment variation
- CSV activity reports
- Syncing primarily via mobile



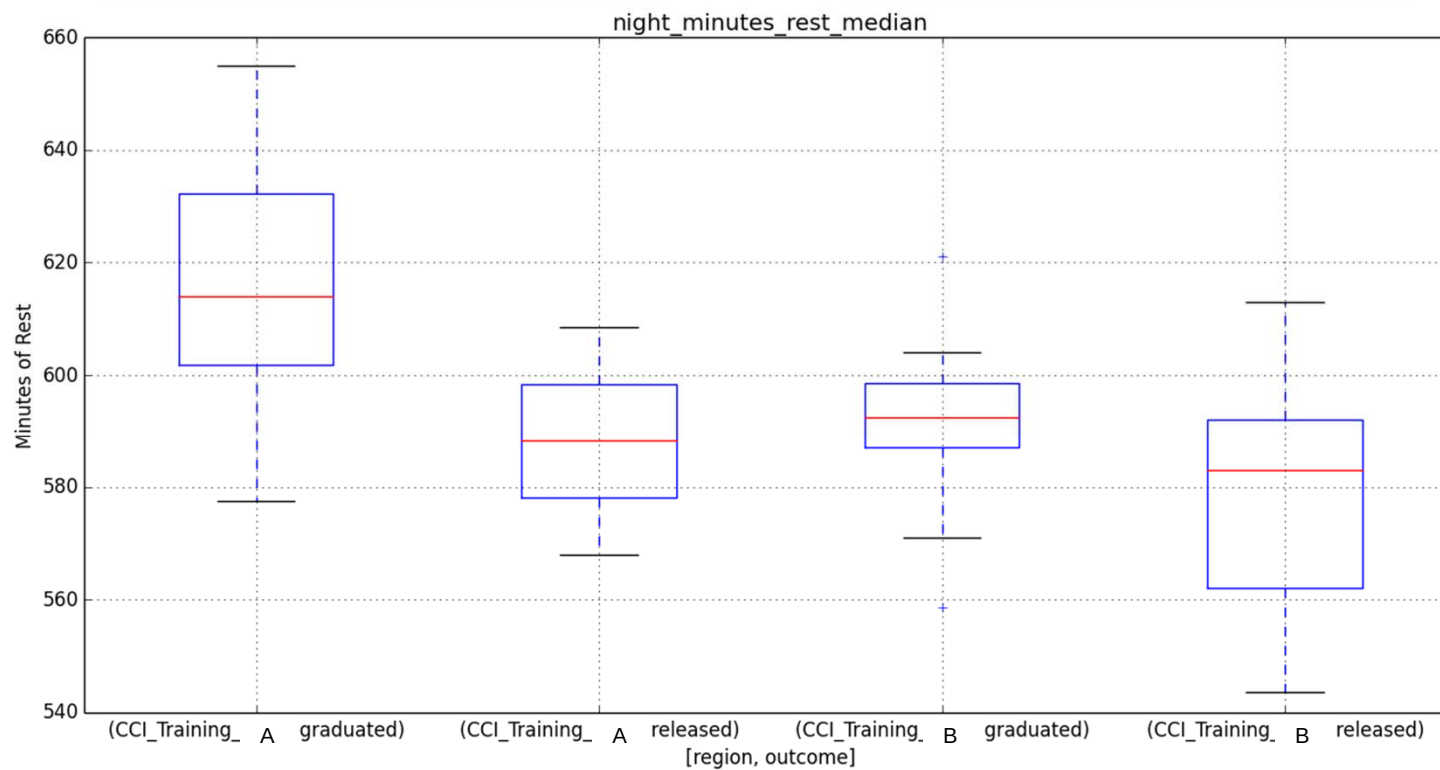
Protocol

- 45 dogs (4 months into AT)
- 2 CCI Training Centers
- Devices worn 24/7
- Charged weekly
- STMicroelectronics LIS3DH accelerometer sampled at 50 Hz
- Synced over Bluetooth & WiFi

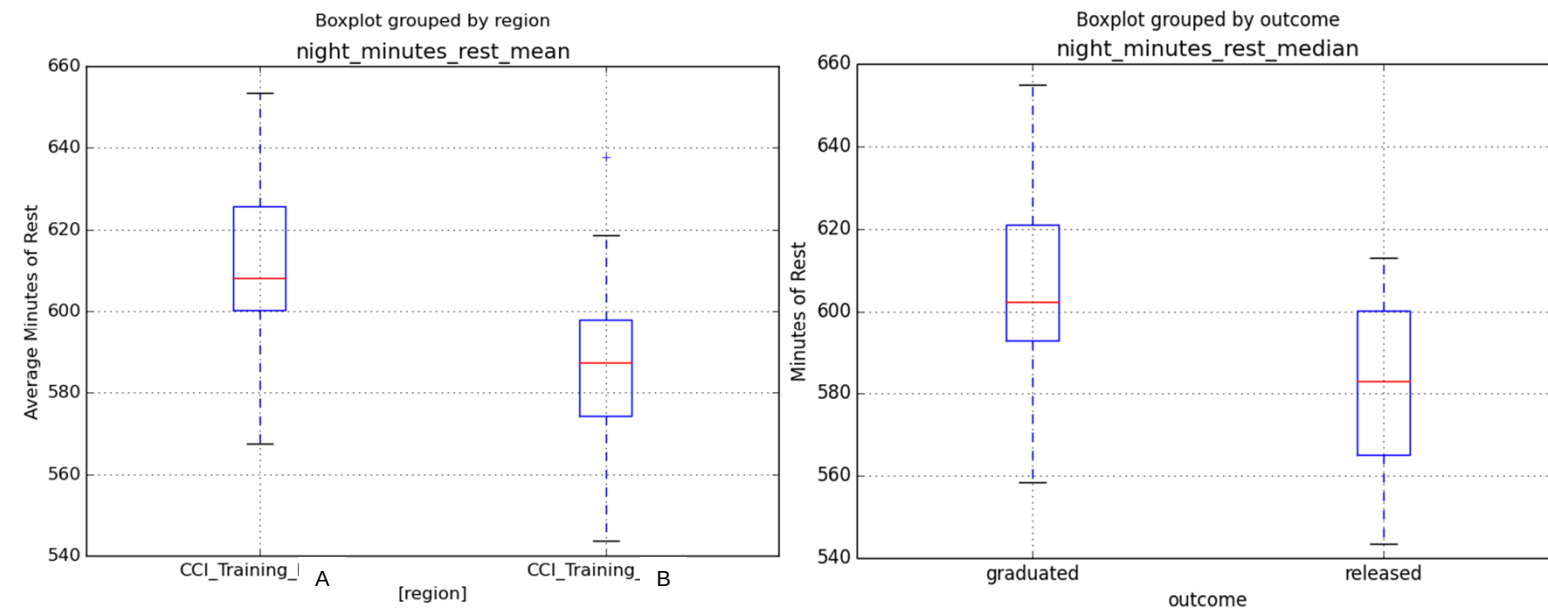
What did we consider inactivity?



Results



*Only dogs with at least 14 full days of data were



Results

The median number of minutes of inactivity at night for dogs who were released (mean = 581 minutes) was found to be significantly different ($P < 0.05$) from the dogs that graduated (mean = 602 minutes).

Results

Quantitative information from wearable devices like the Whistle Activity Monitor may be useful in tailoring the training environment and demonstrates the possibilities of utilizing quantitative measurements to assist in the training of working dogs.



Whistle + CCI

Leverage wearable sensors to identify trends in successful working dogs.

Pilot with 130 CCI dogs wearing Whistle Activity Monitors from 8 weeks of age till graduation began last year.

Future Work

Use bio-metric sensing for assessment.

Compare trends across service dog organizations.

Study other working dog populations like police, military, or guide dogs.





Thank You

Joelle Alcaidinho
joelle@gatech.edu

Animal Computer Interaction Lab @ Georgia Tech

acil@gatech.edu