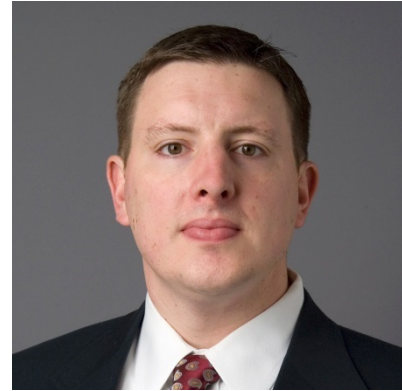


Cross Grounds Collaborations

Evaluation of Outcomes in Orthopaedic Patients



Exercise & Sport Injury Lab





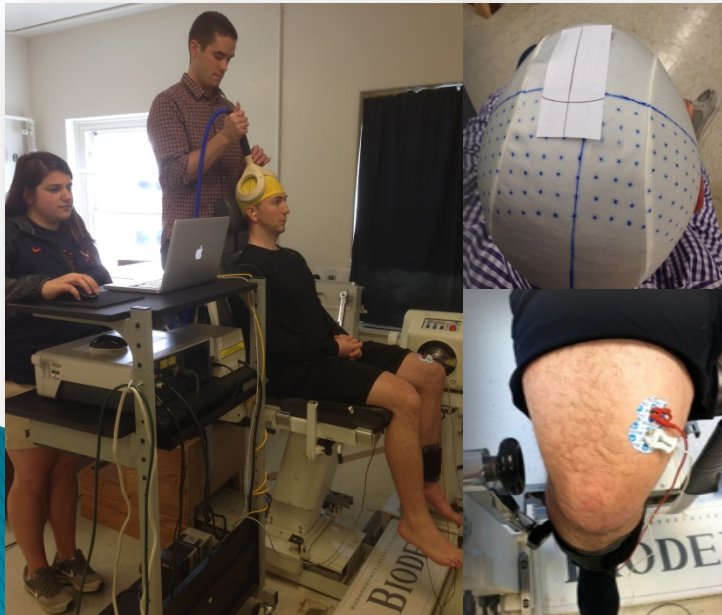
Collaboration

- ▶ Partnerships between clinics – Labs
- ▶ Open Communication / Referrals
- ▶ Encourage collaboration among:
 - Residents
 - Fellows
 - Medical Students
 - Graduate Students
- ▶ Scholarship & Funding

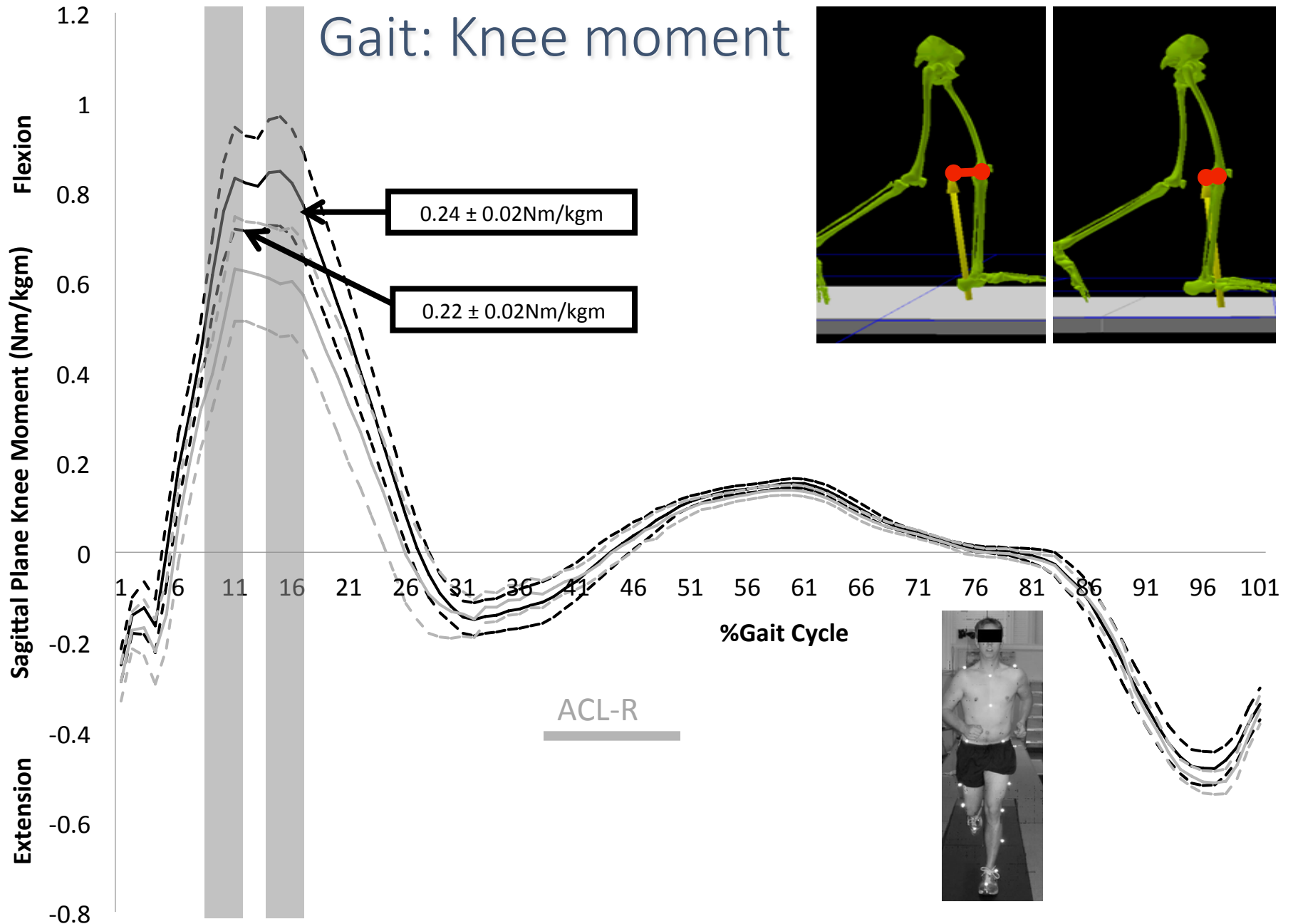


Knee Injury Outcomes

- ▶ ACL injury / Reconstruction
- ▶ Osteoarthritis
- ▶ Muscle & Nerve Testing



Gait: Knee moment



Lower Extremity Assessment Program

1. Isokinetic Strength

- 90 °/s, 180 °/s

2. Isometric Strength

- At 90 degrees flexion

3. Isometric Endurance

- 30 second % decline

4. Single-leg, Eyes-closed Balance

- Center of pressure velocity & area

5. Drop Landing Mechanics

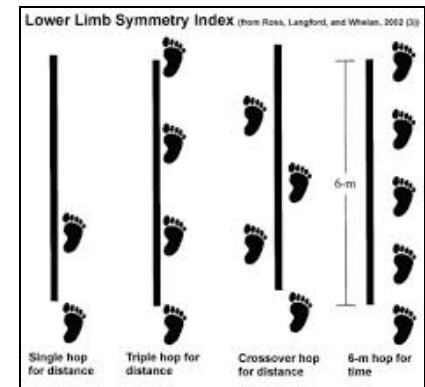
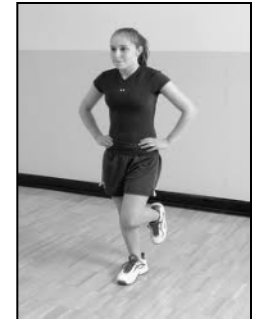
- Landing Error Scoring System (LESS)

6. Single Leg Hop Assessments

- Single Hop, Triple Hop, Cross-over Hop, 6m Timed

7. Subjective Function

- IKDC & KOOS scores



L.E.A.P Report

- ▶ Knee
- ▶ Ankle
- ▶ Shoulder(?)

8. Single Leg Balance

	Velocity (cm/s)	Area (cm ²)
ACL-R	11.7	43.5
Contra	9.9	36.5
% Difference	18%	19%

$\% \text{ Difference} = (\text{ACL-R} - \text{Contra}) / \text{Contra} \times 100$

● < 10% ● = 10% - 15% ● > 15%

Quadriceps Strength

1. Isokinetic: 90°/s (slow)	●
2. Isokinetic: 180°/s (fast)	●
3. Isometric at 90°	●
4. Isometric Endurance	●

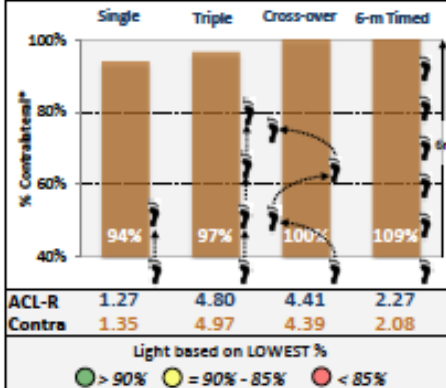
Hamstrings Strength

1. Isokinetic: 90°/s (slow)	●
2. Isokinetic: 180°/s (fast)	●
3. Isometric at 90°	●
4. Isometric Endurance	●

Functional Assessments

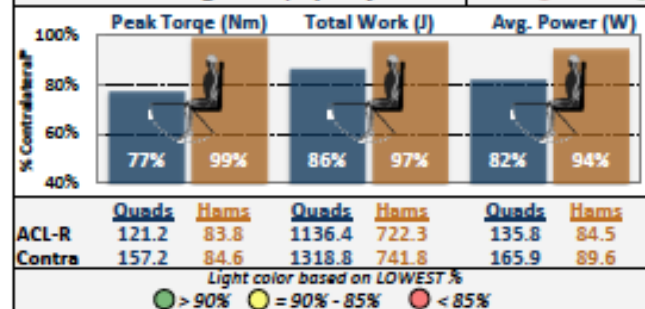
5. Jump Landing: LESS	●
6. Subjective Function: IKDC & KOOS	●
7. Single Leg Hop Tests	●
8. Single Leg Balance	●

7. Single Limb Hop Tests

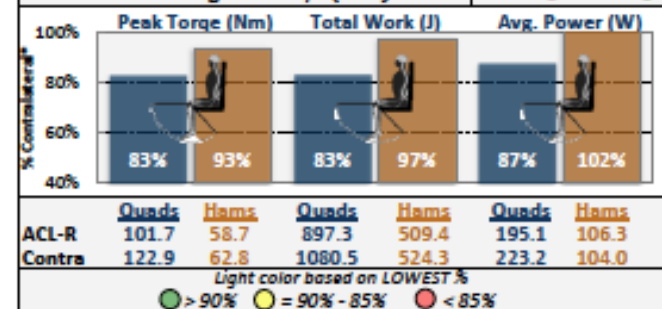


* All % of Contralateral = (ACL-R)/(Contralateral) x 100

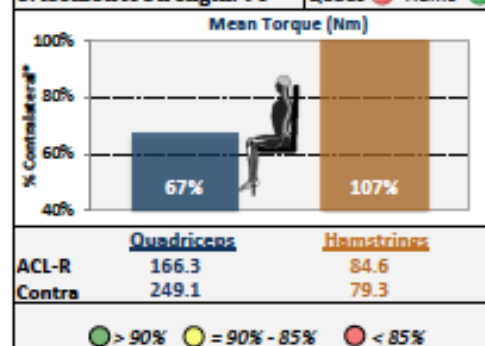
1. Isokinetic Strength: 90°/s (Slow)



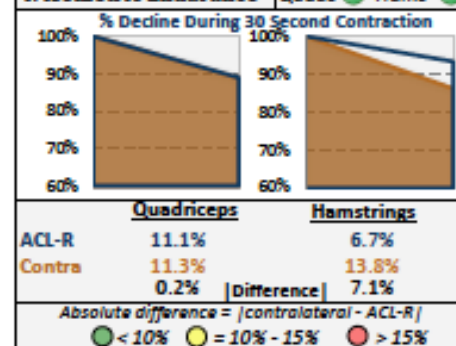
2. Isokinetic Strength: 180°/s (Fast)



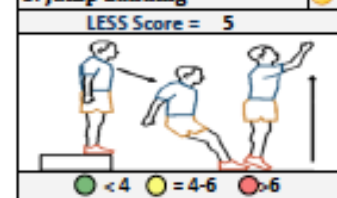
3. Isometric Strength: 90°



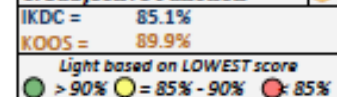
4. Isometric Endurance



5. Jump Landing

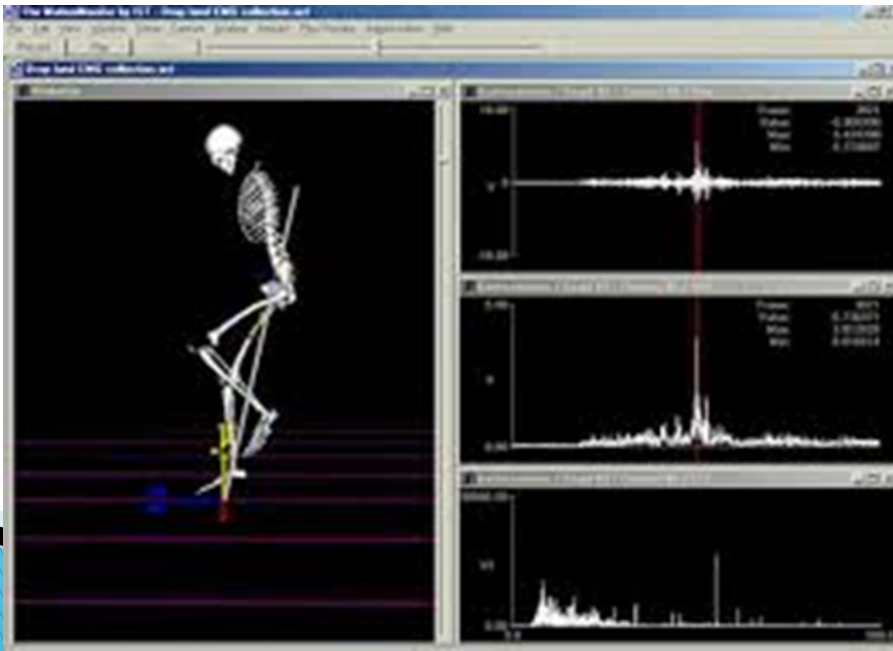


6. Subjective Function

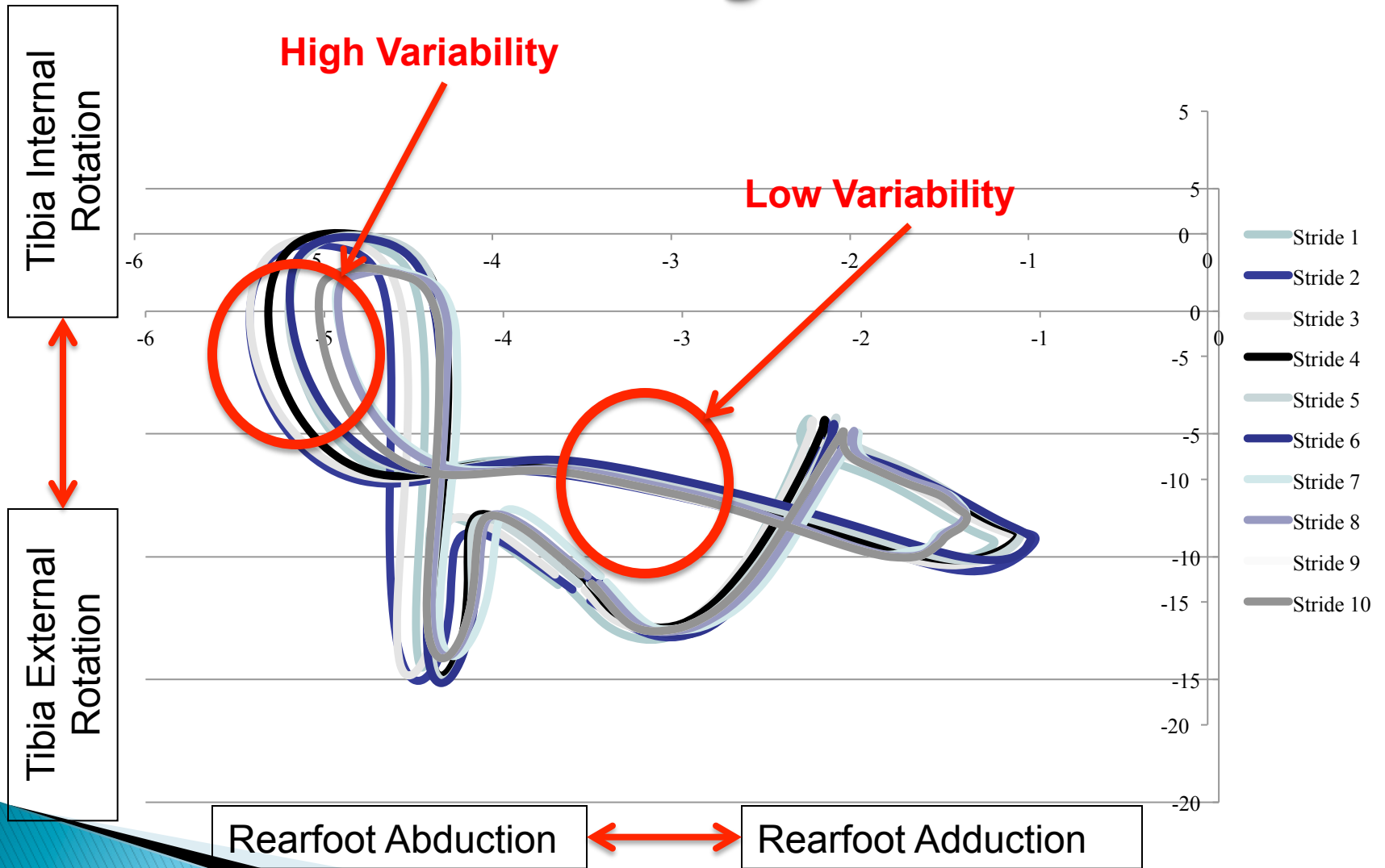


Chronic Ankle Instability

- ▶ Gait Kinematics & Kinetics
- ▶ Surface Electromyography
- ▶ Plantar Pressure
- ▶ Strength & Balance



Variability in Gait



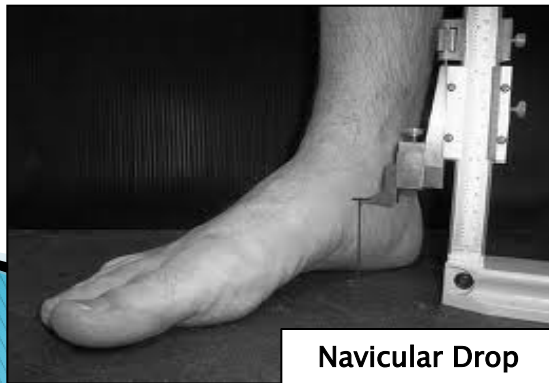
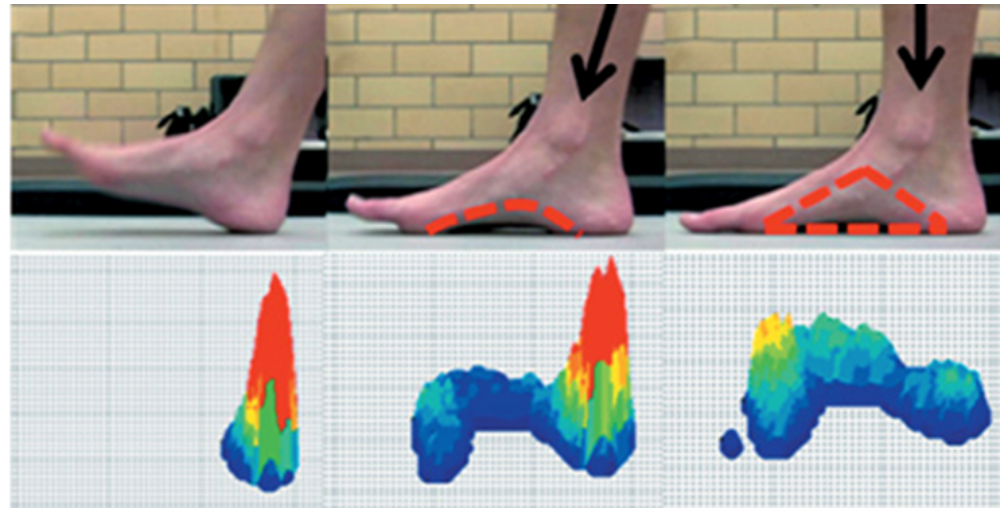
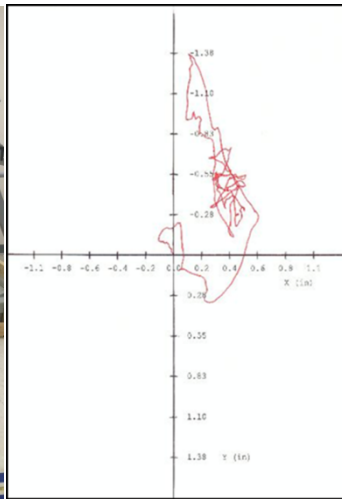
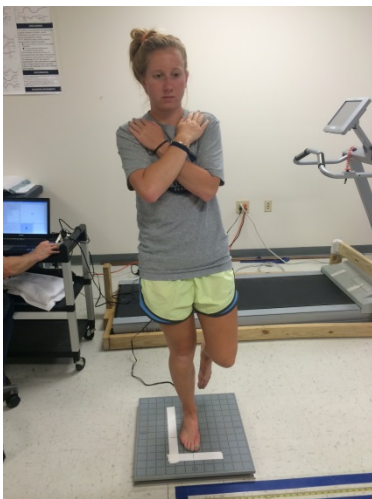
Chronic Ankle Instability

- ▶ Sensory Inputs for Postural Control
- ▶ EASIL → Foot & Ankle Division



Posterior Tibialis Tendon Dysfunction

▶ Clinical and Patient-Reported Outcomes

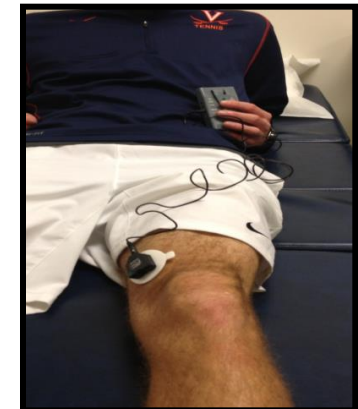
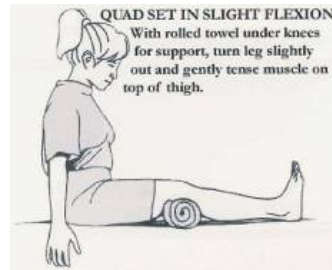


Rehabilitation Studies

- ▶ Device Trials
- ▶ Impairment-Based Rehab
- ▶ Manual Therapy
- ▶ EMG / Verbal / Visual Biofeedback
 - Ankle Instability
 - ACL reconstruction / Deficiency
 - Patellofemoral Pain



Wall slides



Well a

B I N G O ...

14	29	38	52	74
4	18	33	46	62
				
9	27	44	51	67
12	23	35	47	73

easil@virginia.edu

- ▶ Thank you!