I. **Announcements**  Sample thematic poster presentations. Q? Trip to Anatomy Lab next R! Meet in hall outside B63B Klamath. Guidelines.

II. **Review**  Hip & Lower Ext Muscles & Exercises
   A. **Gluteal**: #, shape? ID superficial to deep?
      What stance emphasizes in squat?
   B. **Hamstring**: #, ID lateral→medial, exercise?
      Hip extension or flexion isolates more?
   C. **Quadriceps**: #, ID lateral→medial, exercise?
      Which of quadriceps worked least by squat?

III. **Coaches’ Corner: Exercise Technique**
   A. Lunge, leg extension, leg curl
   B. Back extension, dead lift: barbell, dumbbells
   C. Lat pull: narrow vs. wide grip? Row?

IV. **JMAK**  Joint-Muscle-Activity Kits!
Piriformis
L. pear-shaped

Sciatic n. runs beneath! Sciatica?
Deeper Gluteal Muscles Look Like Pizza Slices!!
Superficial to Deep: *Maximus, Medius, Minimus!*


The gluteus medius and minimus muscles look like slices of pizza!
Hamstring Group

1. Biceps femoris (long)
2. Biceps femoris (short)
3. Semimembranosus
4. Semitendinosus
Vastus lateralis

Gluteus maximus

Biceps femoris

Hamstrings

Semitendinosus

Semimembranosus
L thigh anterior

**Quadriceps**

1. Rectus femoris
2. Vastus intermedius
3. Vastus lateralis
4. Vastus medialis

**NB:** worked last 10-15° of knee extension
**Vastus medialis**
*L. great, vast, huge medial extensor!*

**Gracilis**
*L. slender adductor*

**Sartorius**
*L. tailor*

**NB**: Torqued laterally

**Rectus femoris**
*L. straight thigh muscle, also extensor*

**Vastus medialis**
*L. great, vast, huge medial extensor!*

**Patella**
≡ kneecap
*L. shallow dish/pan, sesamoid or island bone*
Lunge
Avoid Overstriding!
Leg Extension

Point your toes toward your face!

Front of thigh = quadriceps
Leg Curl

Posterior thigh = hamstring group

Calf = gastrocnemius (minor involvement)
Back Extension

Lower back
Hip
Back of thigh

Alignment?

Beginners beyond here?

Erector spinae
Gluteal group
Hamstring group
Russian/Straight Leg (Knee) Dead Lift (RDL)

NB: Best bent or soft knee!
Use Dumbbells to:
1. Start w/↓ weight
2. ↑ control, cf: COG
3. ↑ balance
4. ↑ small incremental resistance

NB: Want curved or tip up!
Dumbbells enable independent, unilateral, multi-planar, resistance exercise, more akin to daily life movements!
Good morning?

Always soft knees!
R lower back & hip quadrant
Lower Back Muscles

- Levator costae
- Iliocostalis
- Deep
- Spinalis
- Erector spinae
- Latissimus dorsi
- Superficial
- Fascia over Erector spinae
- External & Internal Obliques

Higher view cf:
Deep Upper Back Muscles, Thorax/Chest

- Longissimus m. tendon
- Levator costae m.
- Spinous process of 4th thoracic vertebra
- Rotator m.
What are upper & lower extremity climbing muscles?
Common grips used in weight training

- Pronated/Overhand
- Supinated/Underhand
- Alternate/Spotting
Latissimus Dorsi Most Heavily Activated in *Hammering Plane!*
Shoulder-width grip → more Latissiumus dorsi

Wider grip → more Rhomboids, middle Trapezius
Rhomboid muscles include Major & minor
**Bent-over Row**

*NB*: Engages muscles exactly inverse to bench press. Upper back, back of shoulder, front of arm, back of forearm. Great for supersetting!
Seated Row! Wow Possibilities!?

*NB:* Engages muscles inverse to bench press with a bit more lower back! Still good for supersetting! Variable grip and pull?
Latissimus dorsi grip vs wider rhomboid, mid-trapezius grip. Posterior deltoid? Pronated vs supinated?

SOURCE: www.fitworkz.com

FROM Principle
**Agonistic** - **Antagonistic**?

Push - Pull

Prime Move(r) - Resist(er)

Promotes - Opposes

WT Exercise eg?

Bench press? - Bent-over row

Biceps curl? - Triceps extension

Leg extension? - Leg curl
JMAK!
Joint-Muscle-Activity Kits!