Multidirectional Unilateral Leg Exercises

Running is a largely linear, or sagittal plane activity. However, we utilize muscles that act in three planes of motion (sagittal, frontal and transverse planes) throughout the course of the task. Muscles that work in the transverse plane, the plane that allows for rotation; and the muscles that work in the frontal plane, the plane that allows for lateral movements, tend to be less efficient than our sagittal or linear plane muscles. When this weakness occurs we are more prone to injury due to lack of stability in control. In addition, we are less efficient runners due to excessive motion happening across the frontal and transverse plane, which could be utilized in the sagittal plane to help propel us forwards. The two exercises below are lunge and squat variations that are designed to build strength, stability and control throughout all three planes of motions and forcing our body to move as a cohesive structure. These exercises should be performed **2x/week**. Each exercise utilizes 3 motions that count as 1 rep or 1 lap, performed **2 sets of 3 laps** on each leg at each workout session. Only go to a depth or distance that you can control throughout the whole motion.

Lunge Matrix-Forward cross over, lateral and backwards rotational lunges in order

Valslide Squat Matrix-Y Lunges: Anterior, posterolateral, posteromedial
Think of looking down over top and envisioning a Y placed on a clock and you are standing in the middle of the clock**

1) Stand with left foot on ground and right foot on valslide (furniture mover, paper plate or just do this in your socks on a sliding surface)
   a) Anterior-Squat down and slide right foot in front of you towards 12 o clock. Squat as if touching your bottom to a stool behind you
   b) Posterolateral-squat down and slide right foot behind you and cross behind your left leg towards 7:30 on the clock
   c) Posteromedial-Squat down and slide root foot behind you and to the right towards 4:30 on the clock
2) For all directions reach arms out in front of you for counter balance