



ADDING SPEED TO FLIGHT

— BUILDING THE COMMON TAKEOFF

Kris Grimes

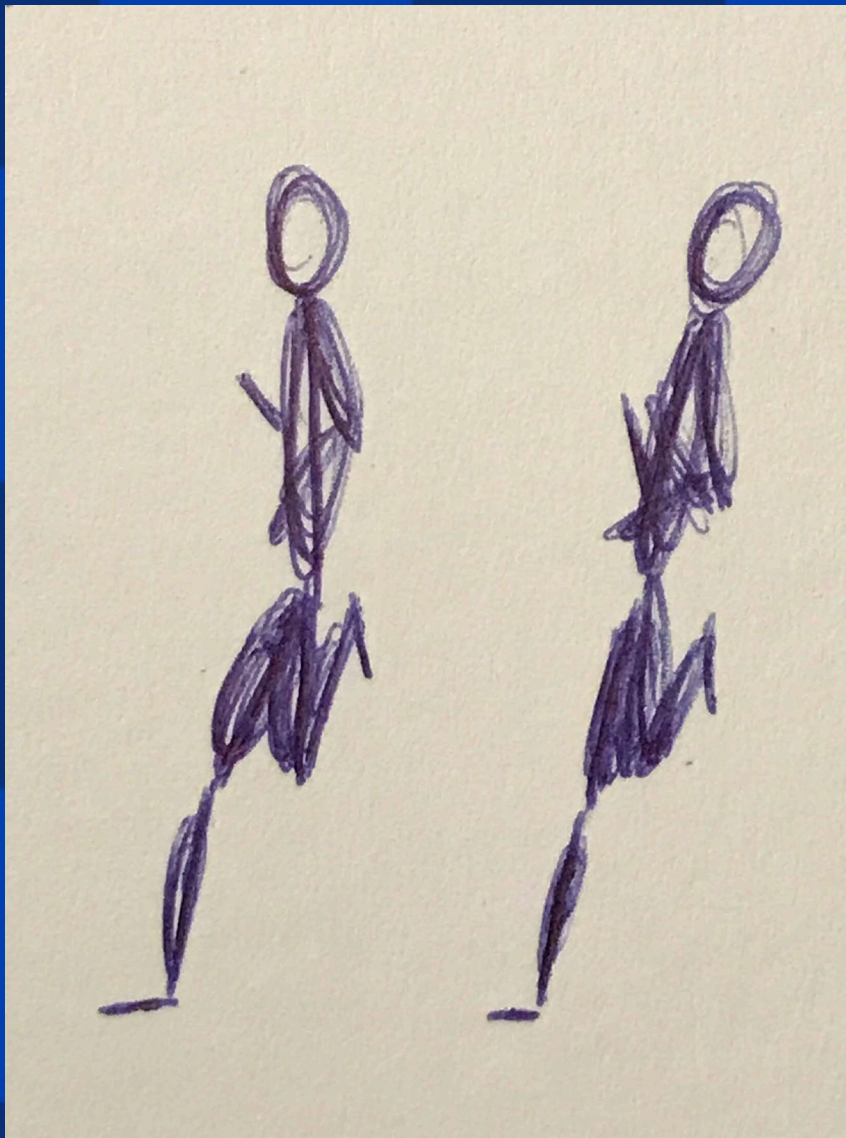
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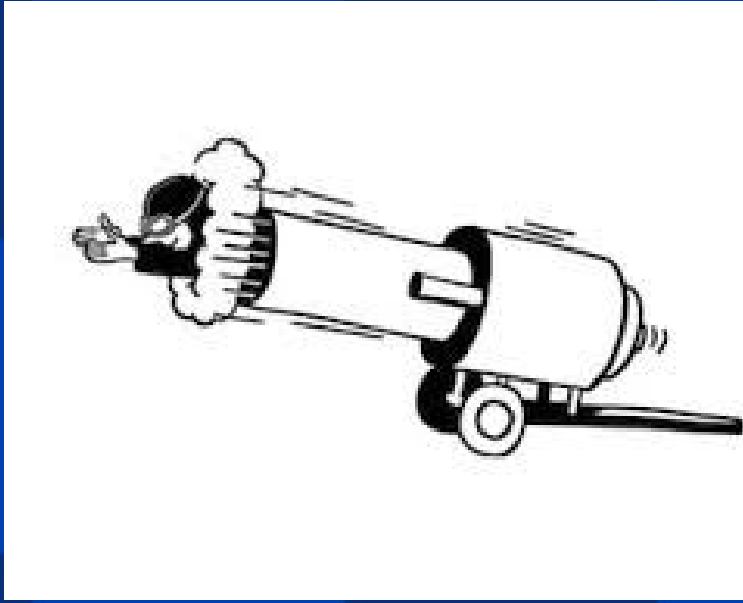
Dr Nick Heebner

Sports Medicine Research Institute

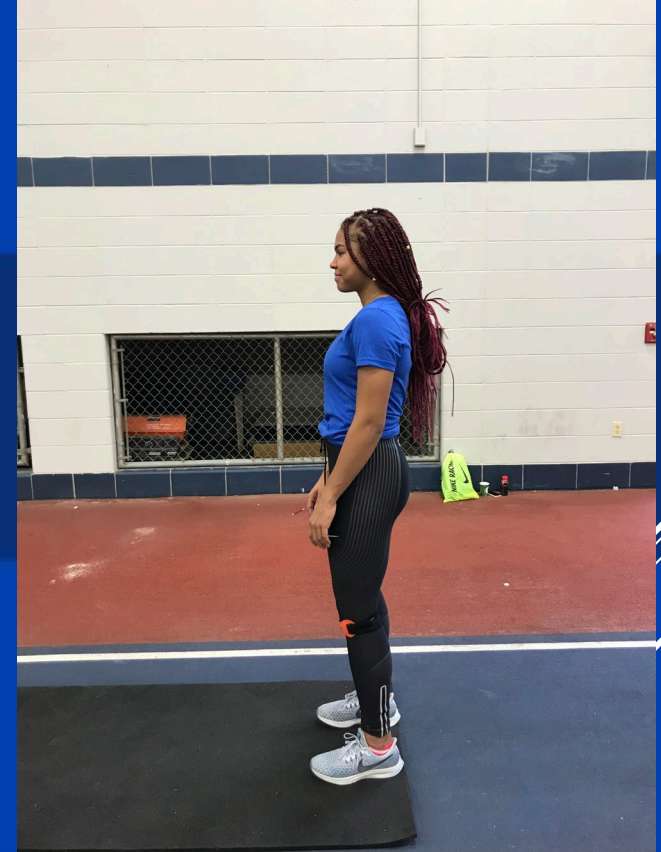
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PREFACE



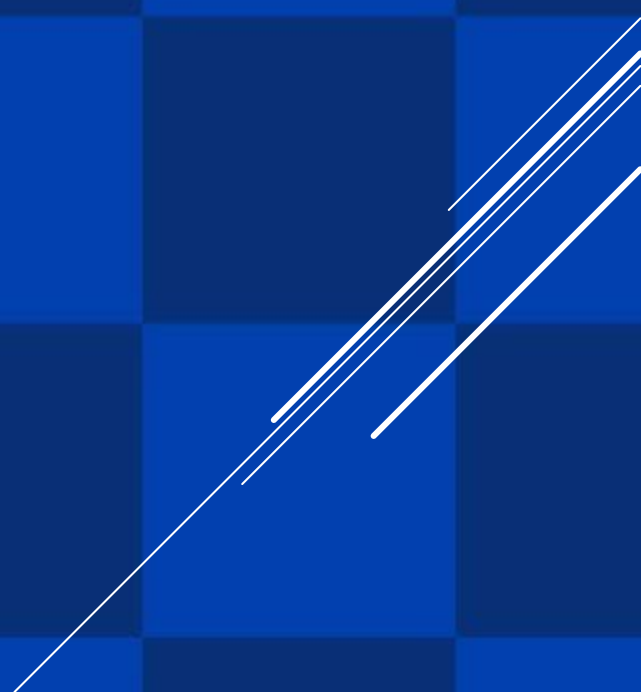


- BEING SHOT FROM A CANNON
- HIT IT HARD POSTURE
- EFFICIENT TRANSFER





SKATE BOARD



KNEES TOGETHER AT:

- ▶ Next to last Take-off
- ▶ Penultimate
- ▶ Take-off
- ▶ Flight

AXIAL FORCE – BENCHMARKS





FINDING POSTURAL CENTER
- SIMPLE TO COMPLEX



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- SIMPLE TO COMPLEX

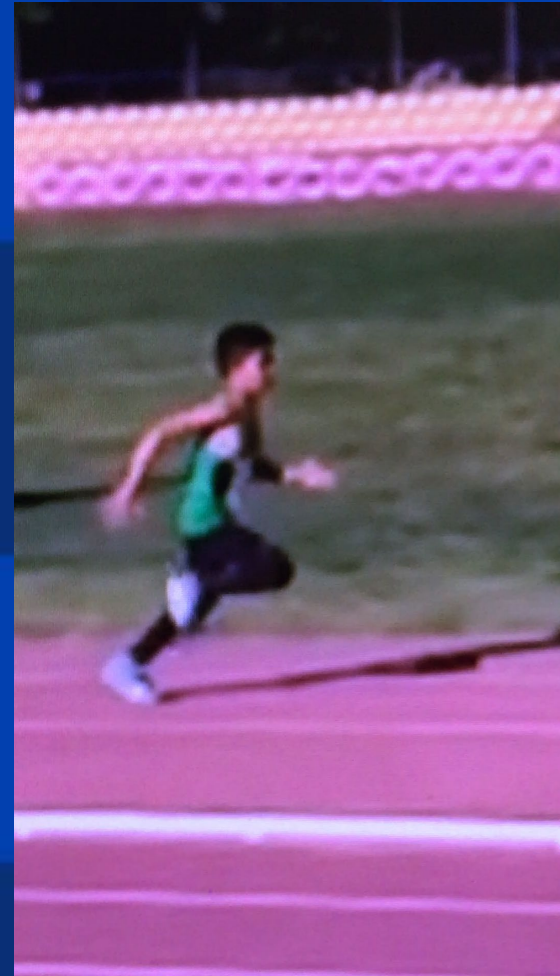




THE LAWS OF NATURE VS HUMAN NATURE



FORWARD BIAS AND INCOMPLETE HIP
EXTENSION

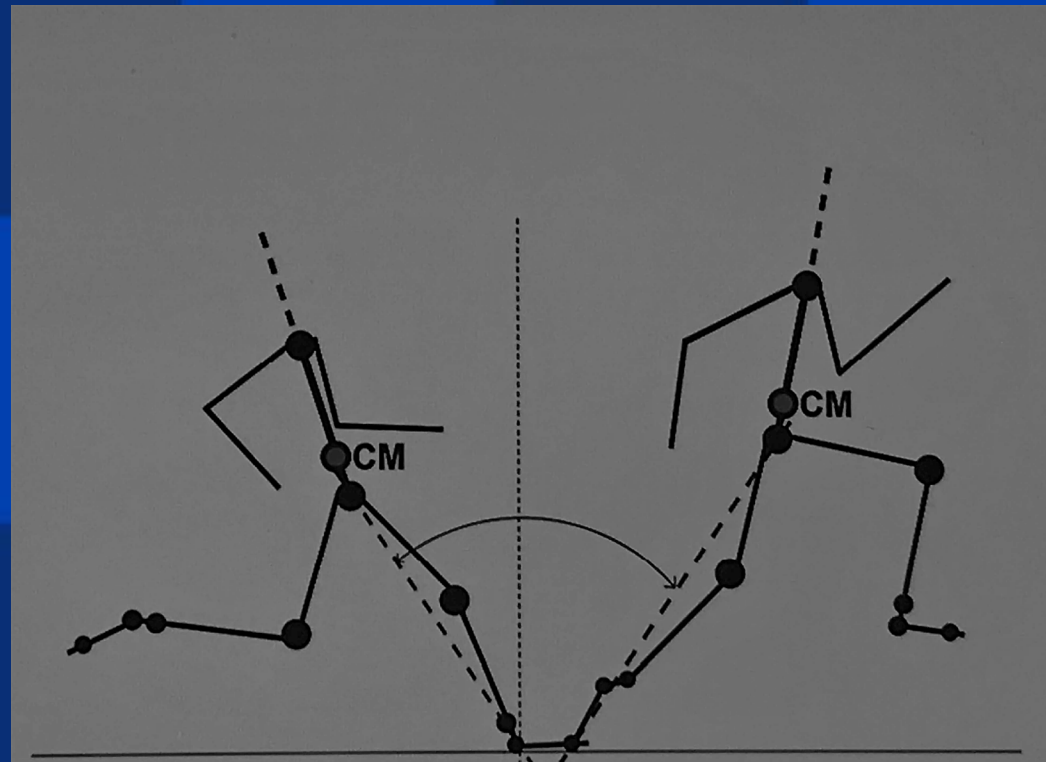


BEFORE LIFE HAPPENS

- ▶ “The Long Jump could basically be considered a projectile event with a difference in degrees,” (Matic et.al. 2012)
- ▶ The run-up velocity is the most significant (factor) for the length of the jump (Bridgett et al. 2002)
- ▶ Optimum Angle of Take Off in the Long Jump is about 23 degrees (*Nicholas P. Linthorne, Maurice S. Guzman, Lisa A. Bridgett 2002*)

VERTICAL FORCE APPLICATION

WHAT DO WE ULTIMATELY WANT?



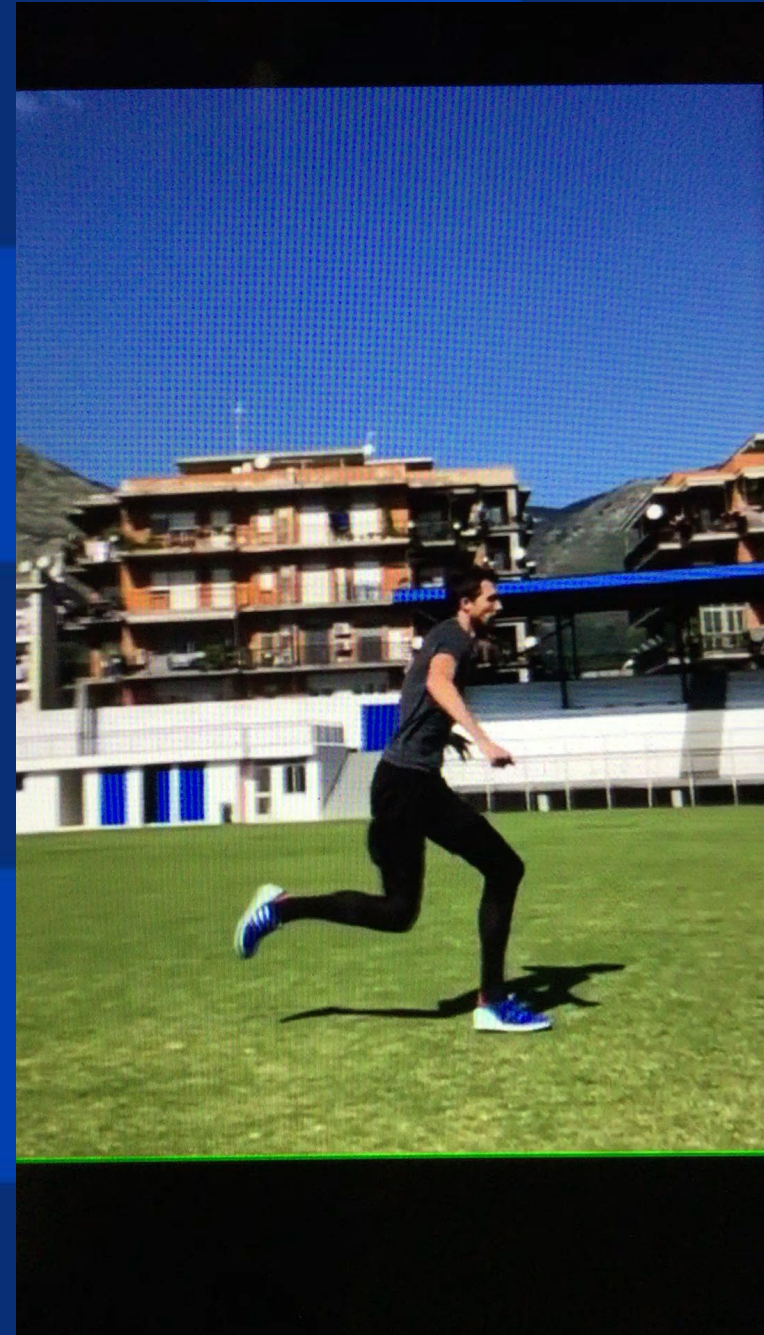


THE REBAR IN OUR CONCRETE

DEFINITION OF THE WORD “JUMP”



LET'S TAKE A LOOK AT SOME
EXAMPLES OF VERTICAL
FORCE APPLICATION.

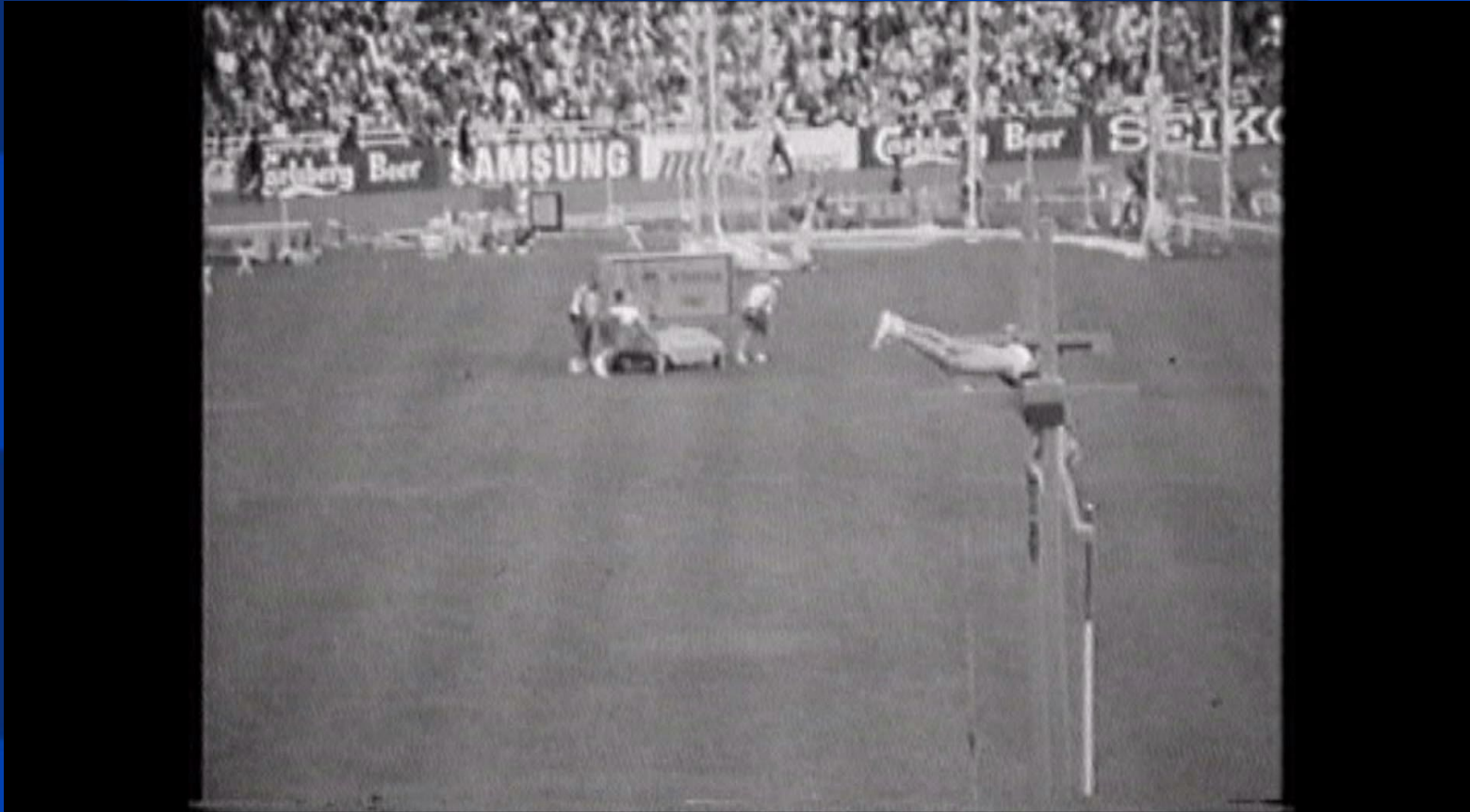


LONG JUMP



TRIPLE JUMP





POLE VAULT

HIGH JUMP



KNEES TOGETHER AT:

- ▶ Next to last Take-off
- ▶ Penultimate
- ▶ Take-off
- ▶ Flight

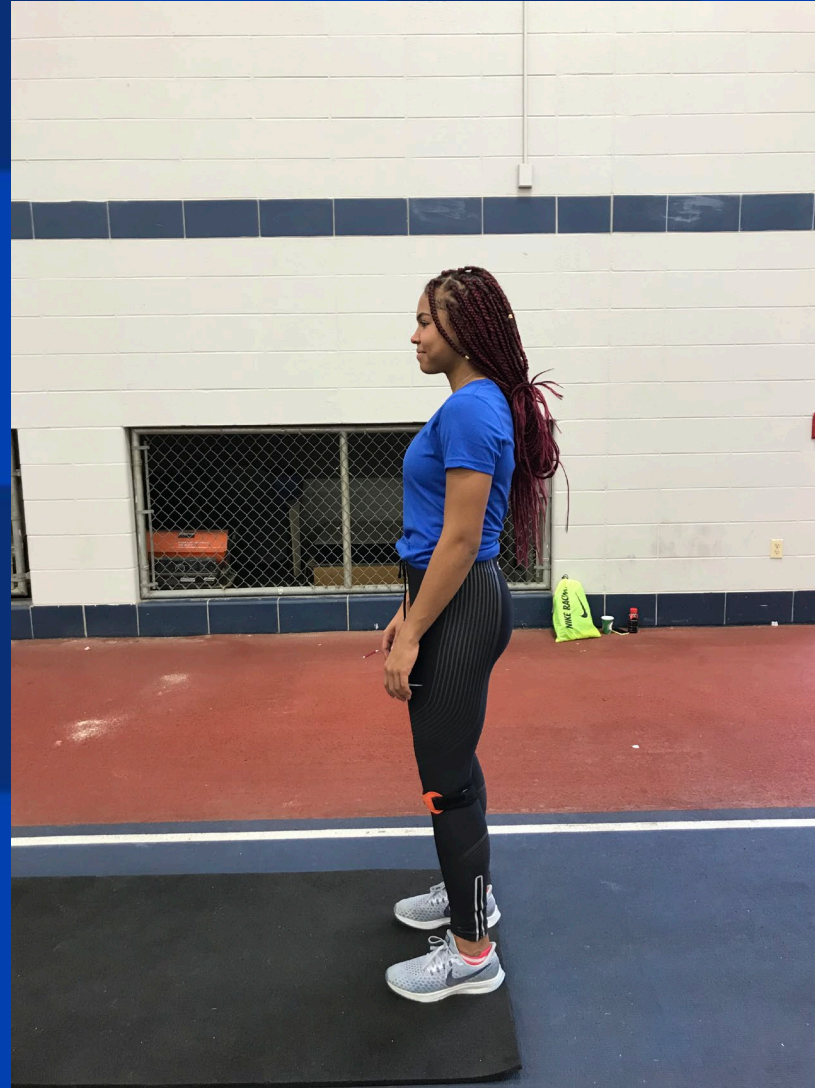
HOW DID THEY GET THERE?



- ▶ Skipping the 7 year old version
- ▶ Ankle dribbling thank you Dan Pfaff
- ▶ Straight leg bounds heel first contact
- ▶ Straight leg bounds to takeoff

APPLICATION TIME – BASIC DRILLS

BASIC POSTURE



7 YEAR OLD SKIP



DRIBBLING



STRAIGHT LEG BOUND – HEAL/VERTICAL



DRIBBLE IN TO STRAIGHT



APPLICATION TIME – LONG JUMP



APPLICATION TIME – TRIPLE JUMP



APPLICATION TIME – TRIPLE JUMP



APPLICATION TIME – HIGH JUMP



APPLICATION TIME – HIGH JUMP



APPLICATION TIME - POLE VAULT

Getting the step out & stiff leg take-off

- ▶ Skipping
- ▶ Right Knee past
- ▶ Complete the front side –Show the bottom of the foot both L&R



CUES:

- ▶ Show the bottom of the foot to the Pit/sand etc in take off foot but also penultimate.
- ▶ “Active landing” means matching the speed of the ground in jumping, applying force vertically

- ▶ Dr Nick Heebner,
- ▶ Dan Pfaff
- ▶ Cliff Rovelto

SPECIAL THANKS!

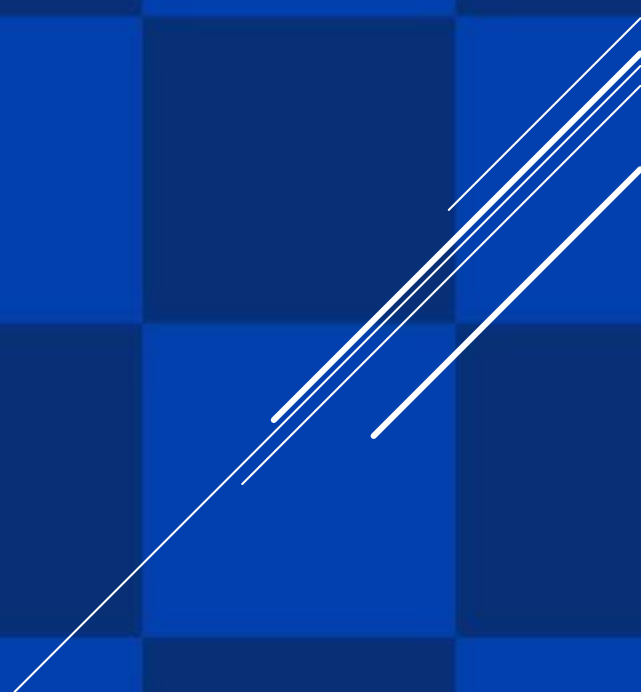
KENTUCKY

TRACK & FIELD



SUMMARY

- ▶ Carrying as much speed through the takeoff while maintaining posture and gaining height requires efficiency. This presentation explored the most effective way to transfer energy from the run to the flight phase of the jump and included teaching progressions to achieve that efficient transfer.



IMPACT OF SHEARING

