

MPE TEAM CASE STUDY

Team Case Study:
St. Laurence Vikings
Baseball
Performance Improvement Through Motor Preferences

Season: 2025–26 | Burbank, IL | Prepared by Motor Preferences Experts

ST. LAURENCE VIKINGS

2025–26 Season | Burbank, IL | Illinois 4A

MPE Team Case Study — Performance Improvement

Head Coach: **Peter Lotus**

Director of Sports Performance: **Brad Leshinske Ph.D.,
CSCS*D, CPSS*D**

Testing Partner: **Mike Medici (Former Texas Rangers Scout)**

#1 Illinois

Entire 2026 Season

#4 National

MaxPreps Top 25

35-3

Overall Record



Initial Challenge

What problem was the staff trying to solve?

The Core Question

The St. Laurence coaching and performance staff entered the 2025 off-season asking a question every high school program eventually faces: how do you truly develop each player and get the most out of them? Not just as a team, but as individuals. The staff wanted to maximize performance and win games — while also reducing injury risk and taking care of the athletes in their program. The answer they found was to stop applying the same approach to everyone and start understanding how each player is wired to move.



Why do identical training inputs yield vastly different results?

— The question that led St. Laurence to Motor Preferences

Motor Preferences Profile

What the assessment revealed — 27 varsity baseball players

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Terrestrial

Anterior chain dominant. Flexion-based movers. Naturally load into the ground with high force output. Hardwired for absolute strength — squats, deadlifts, and grinding movements are their native language.

High Force, Moderate Velocity

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Aerial

Posterior chain dominant. Extension-based movers. Naturally rebound off the ground with speed and elasticity. Hardwired for explosive velocity — sprint times and reactive power are their native language.

High Velocity, Moderate Force

The Research: Baseline Reality

Brad Leshinske Ph.D. — Pre-test data confirmed the blueprint before training began

TERRESTRIAL — Strength Advantage

Hex Bar Deadlift

379 lbs

vs Aerial 326 lbs

Back Squat

352 lbs

vs Aerial 332 lbs

Bench Press

214 lbs

vs Aerial 169 lbs

AERIAL — Speed & Explosion Advantage

Vertical Jump

30.04 in

vs Terr. 27.85 in

10-Yard Sprint

1.66s

vs Terr. 1.68s

10-Yard Fly

1.15s

vs Terr. 1.20s

Note: These profiles are programming guidelines, not labels. Terrestrial athletes can develop speed and Aerial athletes can develop strength — primary

The Research: Training Raises the Floor

Both profiles responded equally to the same 14-week MP-aligned program — $p < .001$

Hex Bar Deadlift

TERRESTRIAL

379 → 417

+38 lbs each

AERIAL

326 → 364

Vertical Jump

TERRESTRIAL

27.85" → 30.37"

+2.5" each

AERIAL

30.04" → 32.53"

Bodyweight

TERRESTRIAL

186 lbs → 196 lbs

+9-10 lbs each

AERIAL

177 lbs → 186 lbs

"Training raises the floor — but biology sets the baseline. Motor Preference determines an athlete's signature, not their potential."

Intervention

Everything individualized — S&C, warm-ups, hitting, throwing, pitching

Strength & Conditioning

Brad designed a 5-phase periodization model (Isometrics → Eccentrics → Progressive Overload → Strength & Power → Power/Contrast) run over 14 weeks. Each athlete's exercise selection was translated through a Prescription Translation Matrix matching movement intent to motor profile — Terrestrials trained through the anterior chain (back squat, hex DL, military press), Aerials through the posterior chain (front squat, RDL, landmine press).

Monitoring & Technology

Daily: Vald CMJ (countermovement jumps via force plates) and bodyweight tracked. VBT monitored on all core lifts. Weekly: hand grip strength (R&L), 30-yard dash with electronic timing, 10-yard splits, fly 10s. This created a real-time feedback loop to manage load, recovery, and athlete readiness across the full roster.

Baseball-Specific Training

Hitting, throwing, and pitching warm-ups, drills, and development work were all adjusted to match each athlete's natural movement preference. Rather than applying one universal approach across the roster, players were developed and cued in alignment with how they are biologically wired to produce and absorb force.

Performance Outcomes

2025 → 2026 | Before & After MPE | * = Program Record

	2025	2026	Change
Batting Average	.366	.407*	+.041
On-Base % (OBP)	.488	.523*	+.035
Slugging % (SLG)	.501	.659*	+.158
OPS	.989	1.182*	+.193
Home Runs	13	35	+22
Triples	19	29*	+10

#1 Illinois entire 2026 season · #4 Nationally (MaxPreps) · 35-3 Overall · Program offensive records set in AVG, OBP, OPS, SLG, 3B, RBI, Runs



I only share this because I believe MPEs have helped our players get better... As you can see from the data, we far surpassed almost all of our offensive numbers this year and set offensive records in just about every category.

— Peter Lotus | Head Coach, St. Laurence Vikings Baseball