



SLUGGER: Player Discovery Portal

Centralized platform for player discovery, tracking, and scouting

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In collaboration with the SLUGGER platform and the Atlantic League of Professional Baseball



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Introduction

Finding Talent

In professional baseball, when a player is released from Major League or Minor League systems, teams often have less than 48 hours to act before that player signs elsewhere. For the Atlantic League, where roster turnover is constant, this narrow window defines a roster.

The process meant to capture this opportunity is outdated. Coaches and managers manually sift through scattered logs, delayed updates, and personal notes, trying to piece together their roster.

Our project aims to introduce a new approach: a centralized, real-time player discovery and management system that turns data into opportunity.

Objectives

Unlike passive databases, our solution is action-oriented, optimizing for coaches and manager's custom needs.



Results & Solution

• Saved Search Profiles

- Coaches and managers can save custom player search profiles based on specific roster needs. These profiles can be reused instantly, eliminating repetitive filtering.

• Real-Time Player Visibility Improved

- The portal successfully centralizes player availability by aggregating transaction and performance data. This removes the need for scattered manual tracking.

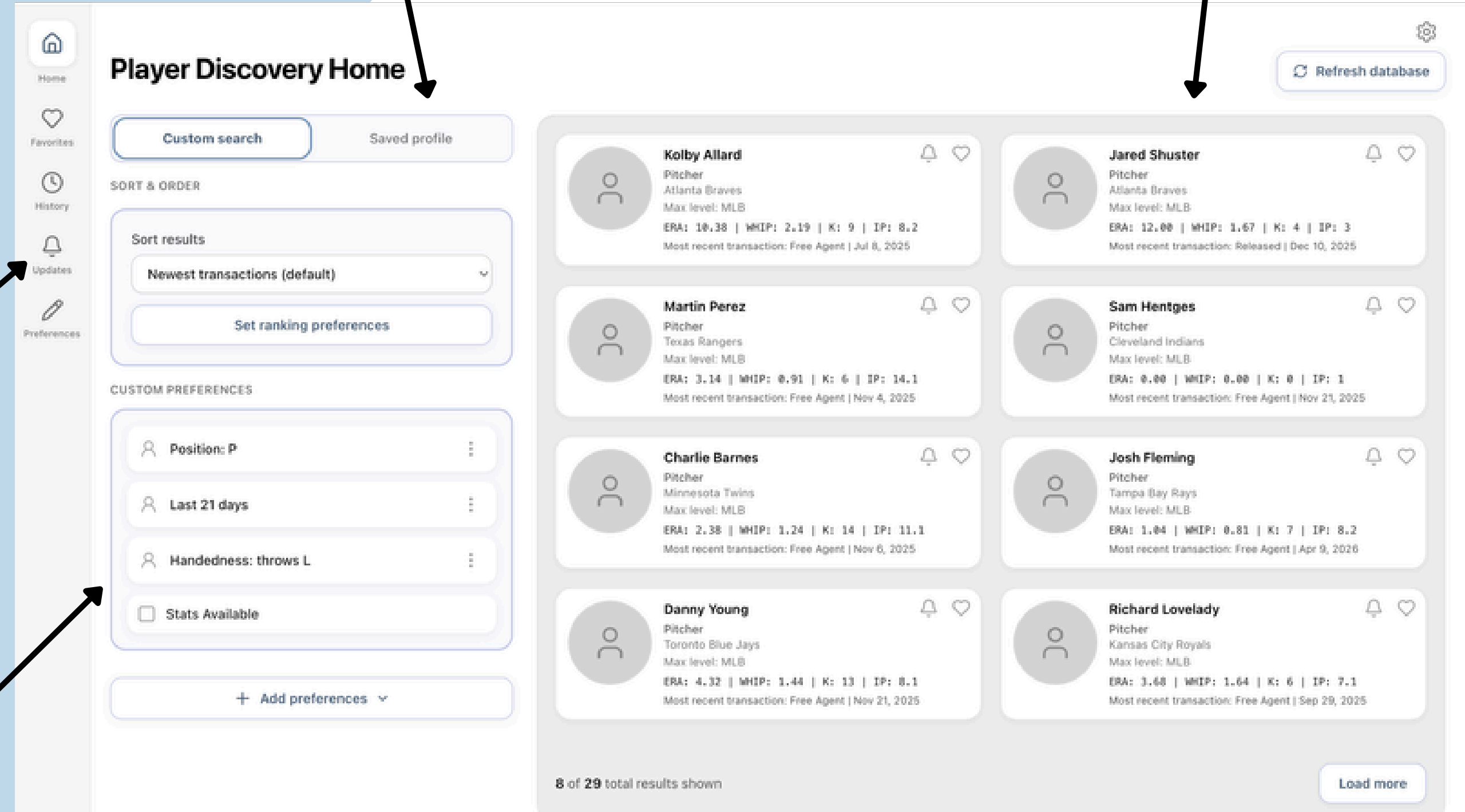
1 The Portal

• Proactive Identification

- Profile-based alerts notify users when newly available players match predefined team needs, shifting recruitment from reactive searching to proactive identification.

• Faster Discovery Workflow

- Coaches and managers can now filter available players by key attributes (position, level, age, handedness, and recency). This significantly reduces the time required to identify relevant roster targets.



SEARCH CRITERIA

Handedness: throws L

Max experience level: AAA

Last 30 days

Position: 1B

Stats Available

RANKING PREFERENCES

Performance weight (%) 30

Experience weight (%) 20

Position match weight (%) 15

Availability weight (%) 15

Recent transactions weight (%) 20

Target position (exact match bonus) Pitcher

Weight total: 100% (must equal 100%)

Save profile Cancel

2 Key Design Insight: Speed Over Completeness

Our data revealed that rapid access to "good enough" information is more valuable than delayed, fully detailed data. This is because of the short window for recruiting a desirable player while they are still a free agent. This directly shaped the system's emphasis on fast, routine updates, flexible filtering, and immediate alerts.

3 Structured Decision-Making

Our application replaces informal notes and spreadsheets with a ranked, organized system that helps scouters focus on the most valuable potential signings first.

Gathering Information

Interviews

We interviewed managers and coaches, which are who our project will serve, to understand their recruitment workflows, challenges, and needs. These insights directly informed feature design, particularly around speed of access, filtering priorities, notification systems, and an all-in-one solution.

The Baseball Cube Data

Player data is sourced from The Baseball Cube, which provides historical and transactional records of MLB and Minor League players.

Deployment

We are deployed as an widget for the SLUGGER platform.

4 Consolidating Statistics: A Ranking Algorithm

We developed a weighted scoring system that users can use to rank players based on performance, experience, positional fit, availability, and recent activity. Each factor is normalized and weighted to produce a final score. The weights are determined by the user.

Scoring Model

$$S = w_1 L_{\text{perf}} + w_2 L_{\text{exp}} + w_3 L_{\text{pos}} + w_4 L_{\text{avail}} + w_5 L_{\text{rec}} \quad \sum_{i=1}^5 w_i = 1$$

Performance Metrics

Hitters

$$L_{\text{perf}} = 0.5 \cdot OPS + 0.3 \cdot OBP + 0.2 \cdot SLG$$

Pitchers

$$L_{\text{perf}} = 0.4 \cdot ERA + 0.3 \cdot WHIP + 0.3 \cdot \frac{K}{9}$$

Normalization

$$L_{\text{perf}} = \frac{x - \min(x)}{\max(x) - \min(x)}$$

Position Match

- $L_{\text{pos}} = 1.0$ (Exact match)
- $L_{\text{pos}} = 0.0$ (No match)

Availability

- $L_{\text{avail}} = 1.0$ (Free agent)
- $L_{\text{avail}} = 0.5$ (Retired)
- $L_{\text{avail}} = 0.0$ (Signed)

Experience Level

Level	Score
MLB	1.00
AAA	0.75
AA	0.50
A+	0.35
A	0.25
Rookie	0.10



Recency / Activity

$$L_{\text{rec}} = \sum_i v_i \cdot e^{-\lambda t_i}$$

Where:

- v_i = value of event
- t_i = time since event (days)
- λ = decay constant ≈ 0.05

Key Insight

Recent player activity is weighted more heavily, with influence decreasing exponentially over time. This allows the model to prioritize up-to-date transactions and performance.

Conclusion

This project addressed a core challenge in professional baseball recruitment: the difficulty of quickly identifying and acting on newly available players within a very short time window and with fragmented data sources, manual tracking, and delayed transaction reporting, which can cause teams to miss valuable roster opportunities.

By developing the SLUGGER Player Portal, we created a centralized, real-time system that transforms raw transaction data into an actionable recruitment workflow. Our application improves how Atlantic League teams respond to player availability by reducing delays, organizing recruitment efforts, and supporting faster, more informed roster decisions in a highly time-sensitive environment.

