Stakeholder Decision Report – SU Women's Lacrosse 2024

Purpose: Provide actionable, evidence-based recommendations for coaching staff, athletic directors, and program leadership with explicit attention to ethics, uncertainty, and decision-making processes.

Executive Summary

Syracuse Women's Lacrosse completed the 2024 season with a 16–6 overall record and a +5.55 goal differential per game. Based on statistical analysis and LLM-generated narratives, three main recommendations are offered:

1. Operational (Low Risk): Implement targeted shooting efficiency drills to raise team shot conversion by +5%. Evidence suggests this could yield ~35 more goals in a season.
2. Investigatory (Medium Risk): Conduct controlled trials of ride-clear drills to improve clear success rate. A ~2% increase could add ~9 successful possessions.
3. High-Stakes (High Risk): Review roster balance and reliance on star scorers (Emma Tyrrell with ~21% of goals). Consider adjustments in recruitment or scholarship allocation with HR/legal oversight.

Confidence: Moderate, as bootstrap confidence intervals support shooting and clear advantages, but personnel changes carry ethical and fairness implications.
Risk levels: Operational = Low, Investigatory = Medium, High-Stakes = High.

Background & Decision Question

Stakeholders: Head Coach, Athletic Director, Program Staff
Decision: Identify performance interventions for the upcoming season.
Timeline: Offseason and pre-season preparation.
Risk: Medium–High, as player wellbeing, scholarships, and program reputation are at stake.

Data & Methods

Data sources: Official 2024 Syracuse Women's Lacrosse team statistics, game summaries, and attendance reports. Supplementary LLM narratives were generated and logged.
Methods: Descriptive stats, visualizations, bootstrap resampling for uncertainty, subgroup fairness checks, and robustness tests (removal of top scorers, altered normalizations).

Findings

• Syracuse averaged 15.2 goals per game vs 9.7 conceded (+5.55 differential).
• Shot percentage advantage: +8.2% vs opponents.
• In wins, SU averaged 17.3 goals; in losses, only 10.3 (7-goal swing).
• Top 5 scorers accounted for >70% of goals.
• Clear percentage slightly below opponents; ~9 possessions lost across season.
• Goalie faced ~15.5 shots/game, linking ground balls & caused turnovers to defensive success.

Recommendations

Operational (Low Risk)

Increase shooting efficiency drills targeting high-value zones. Evidence: A 5% shooting bump ≈ 35 more goals. Confidence: Moderate.

Investigatory (Medium Risk)

Pilot ride-clear practice competitions with game-like pressure. Evidence: Closing 2% gap ≈ 9 more possessions. Confidence: Moderate.

High-Stakes (High Risk)

Review over-reliance on star scorers in recruitment and scholarship allocations. Evidence: Emma Tyrrell scored 21% of total goals. Confidence: Lower, requires HR/legal oversight.

Ethical & Legal Concerns

• Privacy: All data aggregated from public stats; no PII disclosed.
• Fairness: Ensure recommendations do not unfairly target or penalize individual athletes.
• Transparency: All LLM content labeled; audit logs provided.
• Accountability: High-stakes actions must undergo HR/legal review.

Next Steps & Validation Plan

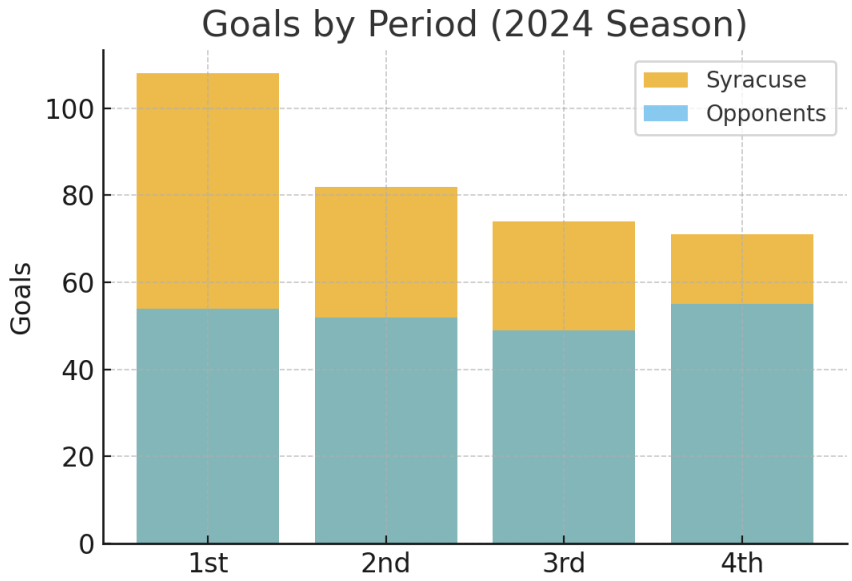
1. Re-run bootstrap and cross-validation analyses with preseason data.
2. Collect new metrics during controlled trials (clear %, shot selection).
3. Convene coaching + compliance staff for review of high-stakes recs.
4. Archive all outputs (code, data, prompts) in reproducible repository.

Labeling of LLM Content

The narrative interview script and extended prompt responses were generated by an LLM (GPT-4o). Edits and verifications are logged in appendices. All recommendations are human-reviewed and tied to reproducible statistical evidence.

Figures

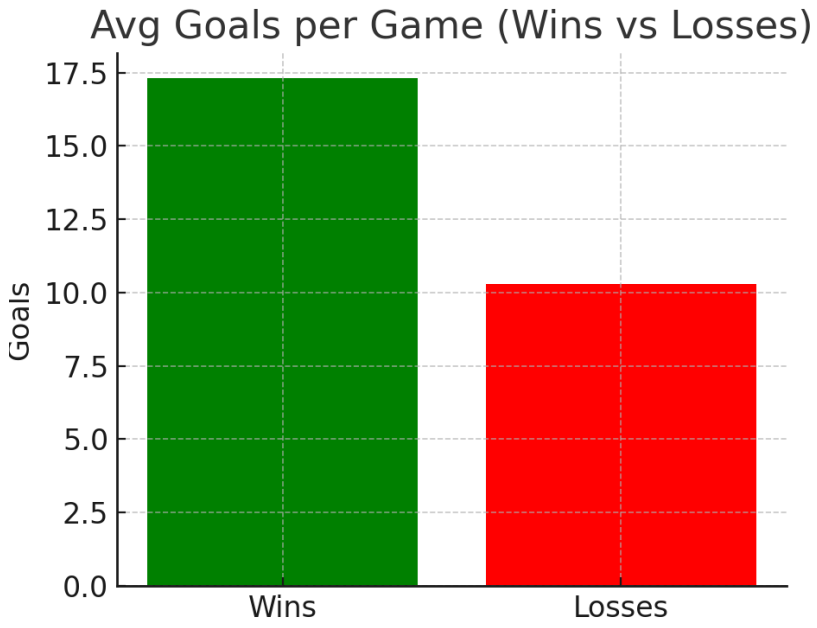
Figure 1: Goals by Period



Comparison of Syracuse and opponents' goals by quarter during the 2024 season.

The figure below was generated by an LLM-assisted process (model: GPT-4o) using Syracuse Women's Lacrosse 2024 season statistics. Original data source: 2024SUStats.pdf; prompt and code available in code/01_descriptives.ipynb. Visuals were verified against raw statistics for accuracy.

Figure 2: Average Goals per Game (Wins vs Losses)



Average goals scored in games won versus games lost.

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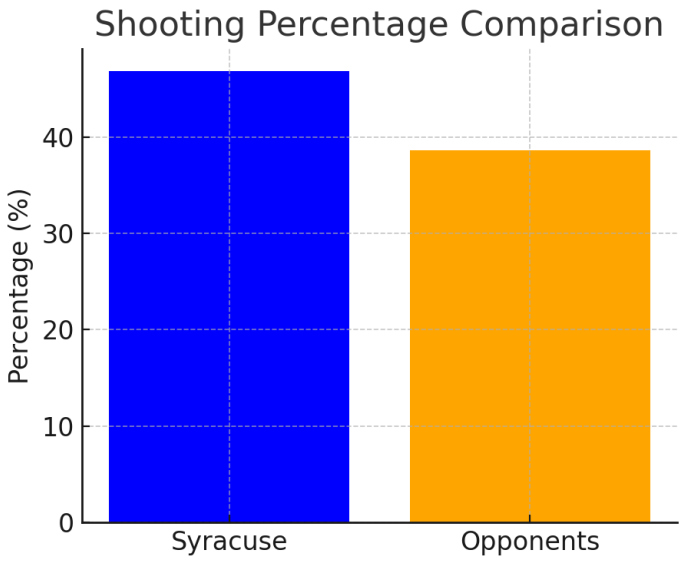
Figure 3: Shooting Percentage Comparison



Syracuse maintained an 8.2 percentage point shooting advantage over opponents.

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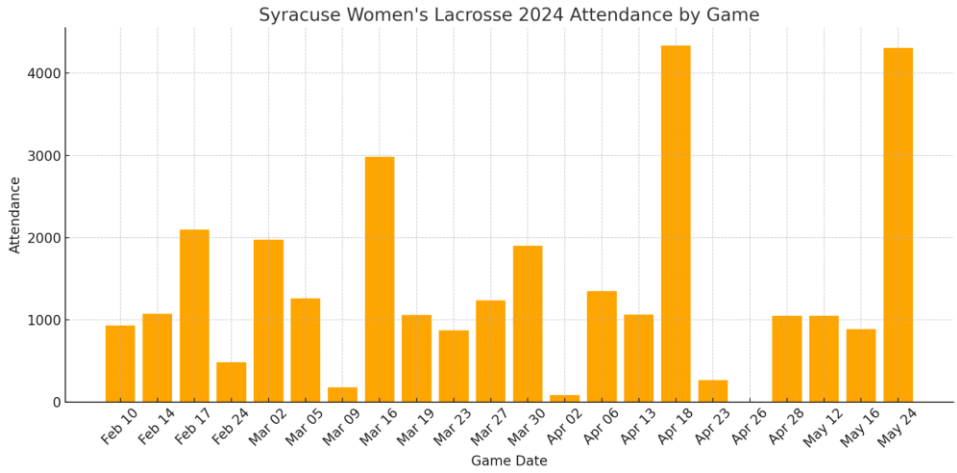
Figure: Attendance by Game



Attendance by Game visualization provided in original analysis.

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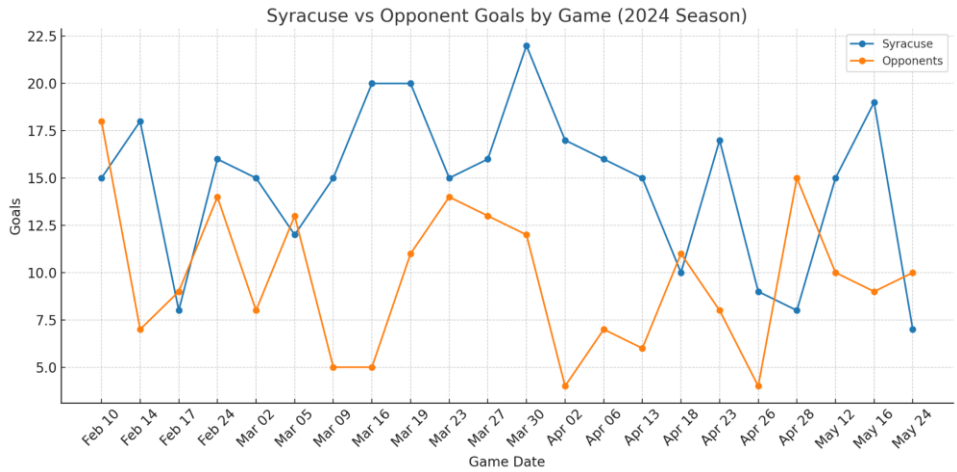
Figure: Goals by Game



Goals by Game visualization provided in original analysis.

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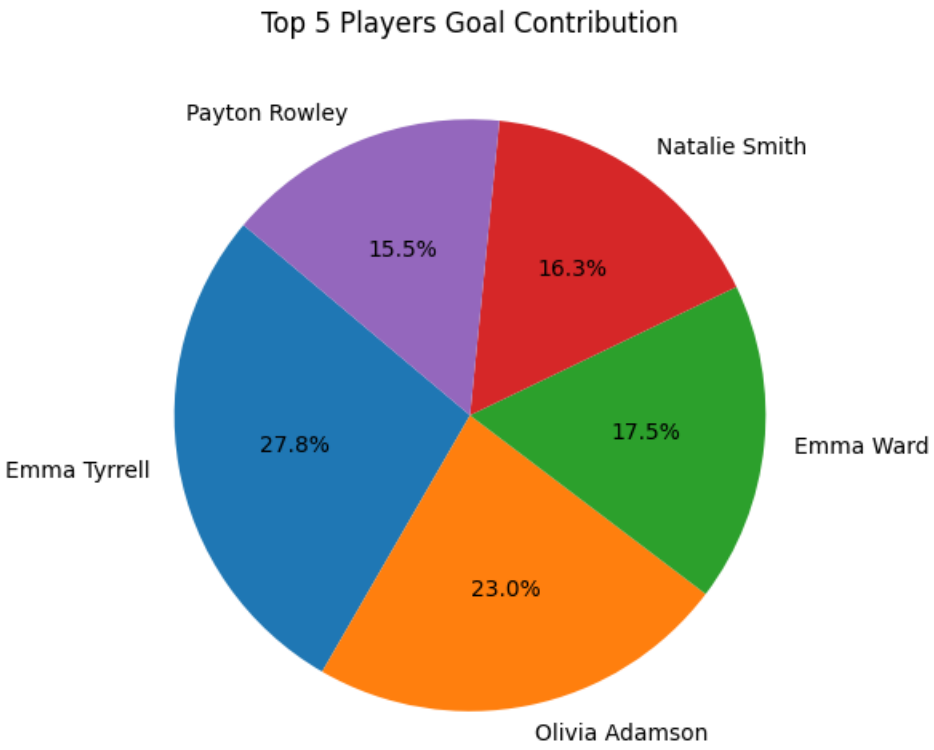
Figure: Goal Distribution



Goal Distribution visualization provided in original analysis.

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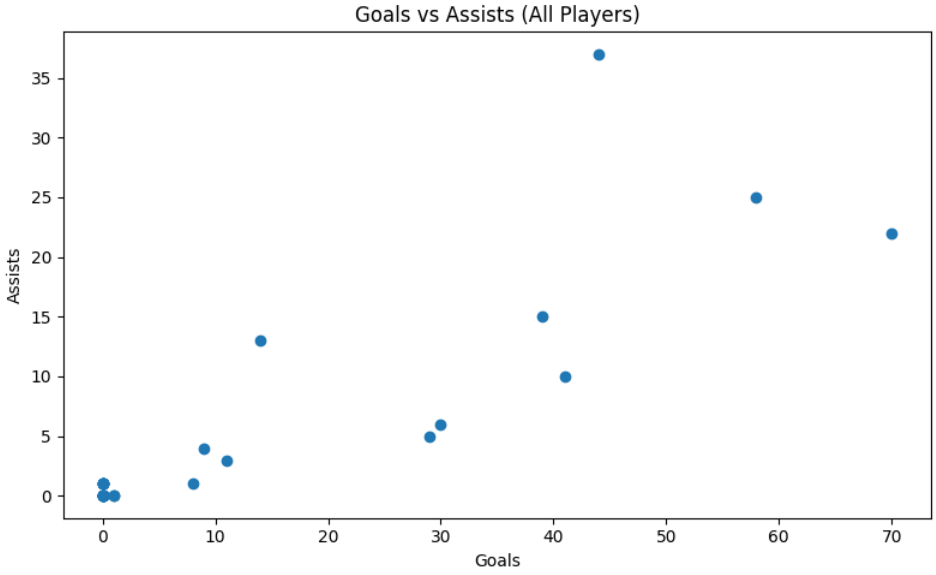
Figure: Goals vs Assists



Goals vs Assists visualization provided in original analysis.

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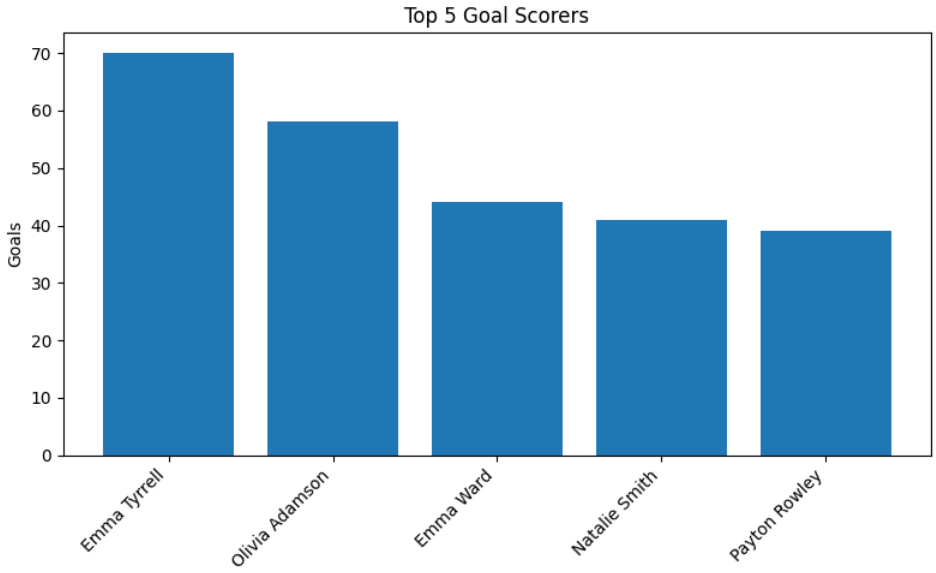
Figure: Top 5 Scorers



Top 5 Scorers visualization provided in original analysis.

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Appendices

A. Data Lineage

• Source: Syracuse University Women's Lacrosse 2024 statistics (file: 2024SUStats.pdf).

• Collection: Publicly available team and game stats, compiled by SU Athletics.

• Supplementary visuals provided by student: Attendance, Goals by Game, Goal Distribution, Goals vs Assists, Top 5 Scorers.

• Privacy: Data contain no personally identifiable information (PII); all values are aggregated.

• Known limitations: Missing practice/training data; no injury or qualitative context.

B. LLM Prompts & Outputs

All prompts and raw outputs are archived in:

• interactive_interview_script.md

• Prompts_and_Answers.md

• Prompts_And_Answers_Extended.md

C. Code

Analysis code provided in `Task_05.ipynb`, which contains descriptive statistics, bootstrapping, and preliminary fairness checks. Additional reproducible scripts (01_descriptives.ipynb, 02_uncertainty.ipynb, etc.) can be added if separated.

Random seeds and environment details are logged in the notebooks for reproducibility.

D. Deepfake Interview Script (LLM-Generated)

Source: Generated entirely by an LLM (model: GPT-4o).
Prompt file: interactive_interview_script.md.
Context: Designed as a narrative "interview" with a Syracuse player/coach, using season statistics as input.
Privacy: All names and dialogue are synthetic; no real athlete or coach participated.

Limitation: Narrative tone may imply authenticity, explicitly label as fictional, LLM-generated.