

2 Year Target (Top 22 athletes in each Weapon/Gender Combo) by Region							
Two Year Look Back - 2024/25	Region	Men Epee	Men Foil	Men Saber	Women Epee	Women Foil	Women Saber
	Mid-Atlantic/South	5	7	7	4	6	7
	Midwest	8	2	5	5	6.5	5
	Northeast	7.5	11.5	10	11.5	8	9
	West	1.5	1.5	0	1.5	1.5	1

Formula Metrics and Strength Factor							
Each region will have a strength factor allocated to it. The strength factor is the combination of how well they performed in a metric compared to the other regions multiplied by the weight of that metric. The target above was used to optimize the weights below.							
Weights	1	2	3	4	5	6	Note: Metrics 2 and 6 are limited to 4 athletes per school.
	20%	5%	30%	5%	5%	35%	
Metrics	NCAA Championship Win %	Average SPI of the top 25% in the region	% the region holds of the top 50, ranked by SPI	Average SPI of the top 30% finishers at regionals	Average SPI of the next 20% finishers at regionals	% the region holds of athletes that have an SPI above 70	

Projected Allocations							
The allocations below are the projected allocations for the 2025/26 season. Currently, metric 1 (NCAA Championships) is accurate to the 2025/26 season. Metrics 2-6 are utilizing the 2024/25 season stats in this projection. As the season progresses, metrics 2, 3, and 6 can be updated to current season stats. Once the regional qualifier field is locked, metrics 2, 3, and 6 can be locked to accurate 2025/26 stats. Metric 4 and 5 will be updated, along with final allocations, post regional qualifiers. Metrics 2 and 6 are limited to 4 athletes per school to minimize flux when shifting to using only athletes attending regionals.							
Region	Men's Epee	Men's Foil	Men's Saber	Women's Epee	Women's Foil	Women's Saber	Total Allocations
Mid-Atlantic/South	6	6	6	5	3	7	33
Midwest	5	2	4	6	5	5	27
Northeast	7	8	7	7	7	6	42
West	2	4	2	2	4	2	16
At Large Bids	4	4	5	4	5	4	26

Z-score and Normalization			
Each metric is calculated using a normalized z-score. A z-score tells you how far a value is from the average (mean), measured in standard deviations. A z-score of 0 means the value is exactly average. A positive z-score means it's above average, and a negative one means it's below average. A normalized Z-score scales the value to a fixed range (0 to 1 for this formula). This ensures that each weight is accurate for the 2024/25 season.			
Win % at NCAA championships in 2025 by Men's Epee	Mid-Atlantic/South	0.448	Looking at these values, we see that the Northeast had the highest win percentage of the 4 regions and the West had the lowest win percentage. When using metric 1 in the formula, the Northeast should receive the highest value for this metric, followed by the Mid-Atlantic South, the Midwest, and then the West
	Midwest	0.432	
	Northeast	0.591	
	West	0.409	
Raw Z-score of the Win %	Mid-Atlantic/South	-0.2666263026	The average win percentage for the 4 regions was approximately 47%. We can see from the %s above that the Mid-Atlantic/South, the Midwest, and the West all fall below the average. Thus their raw z-score is negative. The farther away from the average, the larger the value of the z-score.
	Midwest	-0.4641272675	
	Northeast	1.471382188	
	West	-0.7406286183	
Normalized Z-score of the Win %	Mid-Atlantic/South	0.2142857143	The highest z-score is shifted to 1, the lowest to 0. Z-scores between the two are relative to their initial z-score (if they were closer to the high, they will be closer to 1 and vice-versa). This allows all z-score to hold the same initial weight prior to the formula weighting each metric.
	Midwest	0.125	
	Northeast	1	
	West	0	

Strength Factor and Allocation Calculation			
Once each metric's normalized z-score is calculated, each of those values are multiplied by their weight factor and then added together to produce 1 strength factor for each weapon/gender/region combination. Those strength factors are used to calculate the allocations for each weapon/gender/region combination as demonstrated below.			
Weighted Strength Factor Men's Epee 2025/26 Projected Data	Mid-Atlantic/South	0.7203375202	This score is obtained by multiplying each metric's normalized z-score by the assigned weight of the formula and then summing the 6 metrics together. Just as the z-score is normalized, so is the strength factor. It will be bound between 0 and 1. If a region performs the highest, or lowest, in all six metrics, they will have a strength factor of 1, or 0.
	Midwest	0.5184319433	
	Northeast	0.8077273211	
	West	0	
Strength Factor %	Mid-Atlantic/South	0.3519856594	To get to an allocation number, we add all 4 strength factors together to find the overall "strength" of a weapon/gender combination. We then take each region and find the % that region holds of that strength. (Region strength factor divided by the total sum of strength).
	Midwest	0.2533265369	
	Northeast	0.3946878037	
	West	0	
Allocations	Mid-Atlantic/South	6	The final step of the allocation process is to take the Strength Factor % and multiply it by 14. We add 2 (regional minimum) and round down to the nearest whole number to find an allocation for each region.
	Midwest	5	
	Northeast	7	
	West	2	