

# NPI

The NCAA Division III Championship Selection Committee has implemented a new procedure for selecting teams to the championship tournament. The method is called NCAA Power Index or NPI. Table 8 lists the 14 team sports effected. No individual sports are currently included.

Division III NCAA Sports
Field Hockey
Football
Men's Soccer
Women's Soccer
Women's Volley Ball
Men's Basketball
Women's Basketball
Men's Ice Hockey
Women's Ice Hockey
Baseball
Men's Lacrosse
Women's Lacrosse
Softball
Men's Volley Ball

**Table 8.** Division III Sports employing NPI.

The goal is to make the system completely transparent and eliminate subjectivity by eliminating a committee. The old method was extensive and based on the Ratings Percentage Index (RPI) as shown below. The new method is much simpler and based on two components, a team's performance and a team's strength of schedule. Whereas the old SOS in the RPI was based on the opponents won-loss record and the opponents opponent's won-loss record, the new SOS is simply based on the average of the opponents NPI.

## Men's Division III

### Primary Criteria for Selecting At-Large Teams

- [1] Win-loss percentage against Division III opponents
- [-] Division III head-to-head competition
- [-] Results vs. common Division III opponents • [2] Results versus ranked Division III teams
- [3] Division III strength of schedule.

### Secondary Criteria for Selecting At-Large Teams

- [4] Non-division III win-loss percentage
- [-] Results vs. common non-D-III opponents
- [5] Non-division III strength of schedule The actual NPI is calculated as

follows:

$$NPI(i+1) = dial * \left( \frac{W}{W+L} \right) + (1. - dial) \sum_{i=1}^n NPI(i)/n$$

The equation above has two components on the right: (a) the team performance based on its team record and the average of its opponents NPI which is referred to as the strength of schedule (SOS). Notice that the NPI for a team is calculated at iteration (i+1) and the NPI for each opponent in the SOS is calculated at iteration (i). Why is this? The reason is the equation is recursive because in order to calculate a team's NPI you need to know a team's SOS and in order to know a team's SOS, you need to know all opponent's NPI. So which comes first? The chicken or the egg? The solution is that you simply iteratively repeat the calculations updating the NPI's of all teams until the NPI (and SOS) for all teams stops changing or reaches convergence. The dial variable is a component that weighs the team's performance versus the team's SOS. It can be adjusted by individual sports committee. Now the formula contains new wrinkles such as the home field advantage is implemented on the wins and losses such as 0.9/1.1 or 0.8/1.2 factors if the game is played at home or away. In addition, bonus points are given for defeating top teams or teams above a team's NPI. Finally, if a team defeats a lower ranked team, it cannot lose NPI because of the weakened SOS.