College basketball fans are busy penciling, erasing and re-penciling teams into their brackets. Most are guided by the 10-member selection committee's seeding order. But Sheldon Jacobson, a computer science professor at the University of Illinois at Champaign-Urbana, says don't waste your time. At least not after the Sweet 16. From the Elite Eight on, flipping a coin is as much a determinant as seeding. After the first two rounds, where
seeds No. 1, 2 and 3 dominate, the seeding system falls apart, according to a comprehensive study he conducted on the 25 years of NCAA tournaments since it expanded to 64 teams.

"Whoever's in the Elite Eight, you can flip a coin," said Jacobson, who is in his 11th year teaching at Illinois, specializing in operations research and probability. "You think, 'If a 1 is playing a 7, should we do that?' Statistically speaking, you can. As you go further in the tournament, the seeds erode even more."

Jacobson plunged into the study three years ago, not to predict national champions or fill out brackets, but to discover if the top three teams' seeding in each bracket is a good predictor of how far they advance.

Some of the statistics from his 25-year study, which he updates each year, are noteworthy for this week's bracketeers:

• In the national semifinals since the field expanded to 64 teams, No. 1 seeds are 7-8 against No. 2 seeds and 2-4 against No. 3 seeds.

• A No. 1 seed doesn't want to see a No. 2 or No. 3 seed in the Elite Eight either. The No. 1 seed is 18-17 against No. 2 seeds and 10-8 versus No. 3 seeds in this round.

• Although Jacobson found that higher seeds are more likely to win in the first two rounds, there are some anomalies. The No. 12 seed wins 34 percent of the time against the No. 5 seed in the first round. But keep in mind another anomaly: No. 12 seeds (34-66) perform better than No. 11 seeds (31-69) in the first round.

• But keep in mind, No. 12 seeds (34-66) perform better than No. 11 seeds (31-69) in the first round.

• Of the 100 No. 1 seeds, 44 have advanced to the Final Four. Of the No. 2 seeds, 22 have made the Final Four and No. 3 seeds have gone 13 times.

• Only in 2008 did all four No. 1 seeds land in the Final Four. Only three times did three No. 1 seeds make it.

• It's still a good idea to pick a No. 1 seed to win it all. Of the 25 national champions, 15 have been No. 1 seeds, four have been No. 2 seeds, three were No. 3 seeds and a No. 4, 6 and 8 seed have each won just one title.

George Mason's run to the 2006 Final Four as a No. 11 seed perfectly demonstrates his findings — that as long as a lower-seeded team can survive the first two rounds, its chances of advancing are equal to a higher-seeded team in the remaining rounds. The Patriots beat No. 6 Michigan State in the first round, No. 3 North Carolina in the second, No. 7 Wichita State in the Sweet 16 and No. 1 Connecticut in the Elite Eight.

For Jacobson, who grew up a hockey fan in Montreal before developing a taste for hoops while getting his Ph.D. at Cornell in the 1980s, the NCAA tournament is a numbers game.

He pondered the statistical relevance of seeding to performance and began researching with graduate student Douglas King the results since 1985, considered the modern era of the tournament. They named the study "Seeding in the NCAA Men's Basketball Tournament: When is a Higher Seed Better," which was published in The Journal of Gambling Business and Economics in 2009.

Jacobson said he's only "sporadically" stopped for bracket advice on campus. He said he doesn't fill out a bracket and watches the televised Selection Sunday show purely for entertainment.

When the games start, that's when he starts computing the probability of what will happen.

"We're just looking at the numbers with rigorous statistical analysis to find out the anomalies and trends," he said. "You can use that to come up with a sense of what might happen. But it's very difficult. They call it madness for a reason."

sryan@tribune.com

Copyright © 2010, Chicago Tribune
No ticket to Dance, but Northwestern thrilled with 20 wins (USATODAY.com)
Jessica Alba Slams Rumors That Her Husband Hooked Up with Lindsay Lohan (iVillage)

You might be interested in:
"Bracketology" for conference championship week (Chicago Tribune)
Hoyas stop high-scoring South Florida's Jones in 69-49 Big East tournament second-round win (Chicago Tribune)
Big East Tournament: Marquette, Georgetown Win (Chicago Tribune)
NCAA hoops rankings: Mar. 9 (ChicagoNow)

Around the Web
Northwestern loses to Purdue, now what?
Northwestern vs. Purdue - Big Ten Tournament
Northwestern beats Indiana, plays Purdue tomorrow
Northwestern vs. Indiana - Big Ten Tournament

Also on chicagotribune.com
Photos in the news
Mugs in the news
Celebrity sightings
Your travel photos
Spectacular Chicago

Urbana: Local Mom Makes $77/hr Online!
Unemployed Mom Makes $6,397/Month Working Online!
Read How She Did It.

DON'T Pay For White Teeth
Urbana Mom discovers one simple trick to turn yellow teeth white from home for under $5.