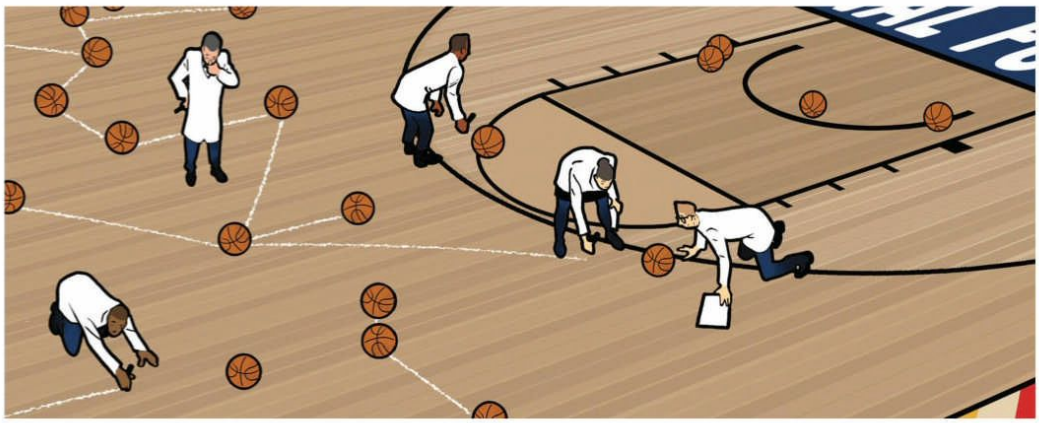
BY PETER KEATING



Crucial Chaos Western Kentucky is the college hoops underdog to watch as March approaches, thanks to one surprisingly powerful indicator: its inconsistency.

As college basketball moves deeper into conference play, Western Kentucky, 5–0 in Conference USA through Jan. 17, is popping into projected brackets. Which is great news if you love March upsets—not just because the Hilltoppers are good enough to take on top seeds but also because they are volatile enough to have beaten Purdue and SMU yet lost to Ohio and Belmont.

Inconsistency pays for underdogs. After all, if a team such as WKU makes the NCAA tournament, nobody will care if it loses its opening game by 1 or 51. So it needs to amp up the variability of its play, taking extra chances to boost its odds of eking out a win. Kevin Hutson and Elizabeth Bouzarth, math professors at Furman and longtime partners on ESPN's Giant Killers project, have come up with a new way to measure which teams are scrambling the college hoops universe with unpredictable results—and priming for success in March.

Their work involves a branch of math called network analysis, which can rank sports teams in much the same way Google ranks web pages. Think of every college basketball program as a point and the record of any school against another as the connection between those points. Instead of asking, "Given how links are distributed around the web, how relevant is each site?" you can ask, "Given how wins are distributed around this network, how good is each team?" When you ask which team is most important to how the network is configured, the answer has fascinating implications: Teams that are most central to their networks tend to be involved in upsets.

Network analysis ranks teams by looking at the shortest paths of results between them. If Purdue beats Chicago State head-to-head by 69 points, we can reliably say the Boilermakers are better than the Cougars. If Nevada beats Rhode Island, which beats St. Bonaventure, which beats Maryland, which beats Penn State, we can guesstimate the Wolf Pack are better than the Nittany Lions, but with much less certainty because there are many other connections to consider among those teams and their other opponents.

If a team always loses to superior foes and beats inferior squads—if it's predictable—it won't create many new "shortest paths." It will simply reinforce existing connections. Look at Georgetown, which has gone 10–0 against truly terrible smaller-conference foes, beaten St. John's and DePaul, and lost to Syracuse and four quality Big East teams. If we took the Hoyas out of D1, the rankings wouldn't change. On the other hand, consider UMass, which has beaten Providence and Georgia yet lost to Quinnipiac and George Mason. Those surprises add unexpected information and connections to the network, so the Minutemen, though 10–9, are quite important in determining how all teams rank.

The abundance of a team's shortest-path connections in the network is called its "betweenness." When statheads calculate betweenness, they are measuring a team's tendency to play chaotically, which of course includes its propensity to pull upsets.

Bouzarth and Hutson have discovered that in the regular season, "teams with particularly high betweenness are typically involved in major nonconference upsets." Studying the NCAA tournament since 2007, they've also found that among strong underdogs, high-betweenness teams have won an average of 1.3 tournament games, nearly twice the average for low-betweenness teams (0.68). And within this highly chaotic group, the teams that played best were strong on defense and on the offensive glass, like Syracuse in 2016—a 10-seed that made the Final Four.

Among this year's would-be Davids, Western Kentucky really does stand out, ranking 27th in the country in betweenness, the highest of any mid-major likely to make the NCAA tournament. If you want an off-the-wall underdog to track, keep an eye on UNC Greensboro out of the Southern Conference. The Spartans rank among the top 20 percent of all NCAA teams in betweenness and employ all kinds of the high-risk/high-reward tactics that help long shots win—they pressure opponents into turnovers, launch a ton of 3s and crash the offensive boards. And if you're looking toward the second round, Notre Dame is one of the top 30 teams in the nation in BPI, but with losses to Ball State and Georgia Tech, the Fighting Irish have the uneven results that generate above-average betweenness and midbracket seeds—a tasty combo for taking down a 1 or a 2. Same deal with Florida (BPI: 28, but defeated by Loyola Chicago and Mississippi). Get smart about chaos and these teams will eighty-six the opposition.

ILLUSTRATION BY JASON SCHNEIDER