Raleigh math guru Cannon is Butler basketball's secret weapon

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Last spring, Dave Telep received a call from his friend Brad Stevens, the Butler basketball coach. Telep, the ESPN senior college basketball recruiting analyst, remembers the conversation well.

"Don't be mad at me, man," Stevens said, according to Telep. "But I want to take your intern."

And that's how Drew Cannon, who'd never coached basketball or played beyond his middle school church league, became a part of Stevens' staff at Butler. Cannon, 22, graduated from Cardinal Gibbons High in Raleigh in 2008. He went to Duke, where he majored in statistics and graduated in May 2012.

And Thursday, when Butler plays against Bucknell in the NCAA tournament in Lexington, Ky., Cannon will be a key part of the madness, a Butler graduate manager whose skill with numbers, and analytics, rewarded him with a coveted position on the staff of a major college basketball program.

"You hear people talk about living the dream," Jim Cannon, Drew's father, said Wednesday before beginning the drive to Lexington. "And he is totally living the dream."

Drew Cannon's journey to Butler began long ago. It began, in general terms, with his fascination with numbers and statistics, and his skill for applying them. More specifically, the journey began in 2004 with a casual lunch his father shared with some friends. Telep was there.

Telep, who lives in Wake Forest, had recently read the book "Moneyball," in which Michael Lewis chronicled the Oakland A's use of statistical analysis in scouting. The conversation at lunch turned to basketball. "Moneyball" was fresh in Telep's mind.

"My mind (was) wide open about how we can apply this to basketball," he said.

After lunch, Drew's father pulled Telep aside.

"And he says, this is a little crazy, but my son is huge into statistics," Telep said. "He's got these unique ways of looking at the ACC. At the time, Drew was ranking the ACC players based on this formula that he had made."

Telep met with Drew Cannon, then a sophomore at Cardinal Gibbons. Telep's first impression: "He has a mind for this that I've never seen before."

A new use for numbers

For the next eight years, Cannon was Telep's intern. Filing papers and fetching coffee weren't a part of the job. Analyzing the game in new ways, discovering trends, using statistics to better understand whether a high school player would excel in college – those were.

One summer, Cannon analyzed geographical recruiting trends. A line from that report reads: "We tried to determine which areas are being over-recruited and which are being under-recruited by running a multiple regression."

In another study, Cannon helped Telep analyze the success rate of top-100 recruits over a span of five years. Some of the findings:

“The four schools who signed the most top-10 players won national titles … elite programs generally convert 70 percent of top 100 (prospects) into productive players … elite players with academic risks were worth signing … failure rate for African-born top-100 players was nearly 80 percent.”

In another study, Cannon examined what makes a good mid-major player. The New York Times called Cannon for an interview, and a story about his research ran on the front page of the sports section.

“For eight years this guy was my secret weapon, because of the studies he was able to do,” Telep said. “I had one year – we studied the characteristics of a late bloomer. I was so disappointed in myself with (misevaluating Stephen) Curry, that we just broke it down – what makes a late bloomer …

“And I now have a profile of late-bloomers that I’ll use for the rest of my life.”

A shared vision

During the summers, the height of college basketball recruiting season, Cannon traveled with Telep to all-star camps and tournaments. Telep introduced Cannon to Stevens.

Stevens, in his sixth season as Butler’s head coach, believes in advanced analytics. Some coaches don’t. UNC coach Roy Williams said he doesn’t pay attention to many advanced metrics – effective field goal percentage, rebounding percentage, individual plus-minus ratings, to name a few.

Duke doesn’t use advanced stats either, a team spokesman said. Neither does N.C. State.

Stevens believes in numbers, and in the importance of understanding them and using them to his advantage.

“It’s just the way I’m wired,” he said. “Every coach is trying to figure out how to give their team the best opportunity to win, and part of that is assessing what the other team does well, and part of the way you can do that is through the use of statistics and numbers.”

During his senior year at Duke, Cannon was writing for Basketball Prospectus and ESPN Insider, and thinking about his future. On graduation day, Cannon and his classmates presented their senior projects in statistics. Topics included advanced economic models, monetary policy and health care management.

Cannon’s was about high school basketball recruiting. His parents remember wondering what others had to be thinking.

“Who are the slipshod parents who led him down this path?” Jim Cannon said with a laugh.

After graduation, Cannon was leaning toward writing. Stevens called Telep and said he wanted to hire Cannon.

“I thought Drew’s stuff was right up my alley with the way that I think about things,” Stevens said.

One-man stats machine

Cannon spent last summer breaking down every Atlantic 10 team, the conference that Butler joined this season. During practices, Cannon keeps statistics on shot selection, among other things, and produces a daily report for coaches. During games he analyzes, among other things, the success of different player combinations.

“I do a lot of lineup analysis,” Cannon said. “How the team performs with different subsets of players. Like who prevents transition, who gets out in transition.”

The use of advanced stats is a way of life in the NBA. In the college game, though, it’s still catching on.

“There’s more to do,” Cannon said. “The NBA is far, far ahead of college. Most of what we’re doing in college is just moving toward that.”

In the NBA, some teams have installed high-tech camera systems that allow each play to be charted and measured. Some teams have their own statistics department.

For years, Stevens wanted his own statistics department. Now he does, in a sense.

“I go to these NBA places, and they’ve got four or five people just doing analytics all the time,” Stevens said. “And (with Cannon) it’s like having your own guy that can just break it down at a big-time, in-depth level. And he’s given me different things to think about. After every practice, I’ve got a very detailed printout of what the practice looked like from a statistical point of view.”

A rare talent

Telep, meanwhile, is retiring his intern position. He’s not hopeful that he will find another Cannon. But he appreciates where Cannon landed, because, Telep said, “Not everybody has an open enough mind to think that you can be assisted in these areas.”

“In order for Drew to work for somebody, they have to value what he brings,” Telep said. “And there are maybe three or four guys I’ve seen in college basketball that truly value what Drew would have.”

A statistical revolution changed Major League Baseball, and it’s starting to change the NBA, too. In those leagues, there are already places for people like Cannon. In college basketball, though, he’s a rarity. Opportunities are few.

“I know there’s a place on one (staff),” Stevens said. “And to be candid, I’m OK if the other 346 (teams) don’t do it.”

http://www.newsobserver.com/2013/03/20/2766369/raleigh-math-guru-cannon-is-butler.html

Butler has found secret weapon in statistical guru Drew Cannon

From SI.com

Butler's Brad Stevens is the first college basketball coach to add an advanced statistics expert, Drew Cannon (center, in stripped tie with head down), to his staff.

NEW YORK -- The formal basketball career of Drew Cannon ended in eighth grade as the sixth man of his junior high team. In college at Duke, Cannon's only hoops experience came from an intramural team called the Norse Forse.

When Cannon graduated with a degree in statistics last spring, he had modest expectations of finding a job right away. "We were hoping he would not be living in the basement," said Jim Cannon, his father. "That was our goal. And his."

Instead of toiling in the basement, Cannon spent the season on the Butler bench and will be with the team when the Bulldogs play Bucknell in the NCAA tournament on Thursday. Cannon's experience interning with recruiting analyst Dave Telep and his advanced writing about basketball analytics gained the attention of Butler coach Brad Stevens, who offered him a job as a graduate manager this summer.

Cannon takes MBA classes at Butler and makes just $1,000 per month, but his work has significantly impacted how Butler uses lineups and helped him emerge as a potentially transformative figure on the college basketball landscape. Cannon is considered to be the first pure statistics-based hire on a college basketball staff. When Stevens called to offer Cannon a job, Cannon's father said to his son, "Does he realize you are monumentally under qualified for this position?"

In reality, Cannon's experience in scouting and analyzing data has made him the perfect match with the numbers-savvy Butler program. Stevens, a longtime proponent of advanced statistical metrics, said if he had unlimited resources he would create his own statistics division. For now, he has Cannon and gushes about how his research has shaped lineups, substitution patterns and converted the staff's statistical skeptics.

"It's been very impactful, there's no question about it," Stevens said. "He's really an invaluable resource."

Cannon can't coach players and admits the Xs and Os aspect of the game has overwhelmed him at times. (The Norse Forse, apparently, didn't run a lot of set plays.)

What makes Cannon's value tricky to quantify is that he and Stevens are reluctant to share many specifics of his research. There are simple things he does like keep practice statistics, track the efficiency of specific set plays and the statistical tendencies of opponents.

But as far as the in-depth statistical analysis, Stevens gave only a peek as to not forfeit an edge. Cannon sends Stevens a 10-page e-mail breaking down and analyzing the numbers after every Butler game. The report takes 10 to 12 hours for Cannon to put together.

Cannon's greatest value is with lineup analysis, as Stevens terms his work "unreal." "It includes every player, pairs of players, groups of three, big lineups, small lineups, etc.," Stevens said. Cannon will also include the offensive and defensive efficiency of Butler's players from previous matchups with an opponent, which Stevens said, "Will help me determine probable sub patterns, late game lineups, etc."

From the data for pairs of players, groups of three and entire lineups, the biggest benefit of Cannon's work has been figuring out who plays well together. Hypothetically speaking, guards Rotnei Clarke and Chase Stigall may have poor offensive and defensive efficiencies when playing together, but if paired with forward Erik Fromm those statistics improve.

As the year has gone on, Cannon has come up with lineup "rules," and Stevens tends to stick with them unless fatigue or foul trouble force him to go in a different direction.

"I love it when Drew [reminds] a guy who coached in two national championship games [of these rules]," Butler assistant Michael Lewis said. "He'll say, 'When we played by the rules, we were plus 5. When we didn't we were minus 3.' I love it, for a 22-year old kid to have the guts to say it."

Stevens holds a degree in economics and has always been a huge proponent of using numbers to get an edge. The first thing Stevens did to prepare for the national title game against Duke in 2010 was call up KenPom.com, an advanced statistical site that Cannon wrote for at one time, to figure out Duke's weaknesses. Stevens trusts what he sees with his eyes but says, "The numbers bear themselves out pretty accurately over the course of time."

NBA front offices are filled with numerical experts, a change that's trickled through the league for the past decade. Stevens predicts that college basketball will be seeing a more tangible statistical movement.

"I think whenever you publish this article," Stevens said, "it's going to change."

Cannon showed an affinity for numbers at an early age, overwhelming his father with questions about slugging percentage, ERA and on-base percentage when reading the sports section as a child. At age 8, he swiped his father's Bill James books and devoured them.

Cannon put together statistical-based projects while other kids were playing with Legos. At age 13 Cannon developed a formula to compare the statistics of Negro League baseball players to the white Major League players of that era. He began writing former players and asking them questions.

Jim Cannon didn't even remember his son's ACC player efficiency ratings at age 15. "I'm sure he did do that, and I say that flippantly because he probably had about 25 other projects going on," Cannon said.

Through a friend, Jim Cannon met recruiting analyst Dave Telep, now with ESPN, and told him about his Drew's statistical obsession. Telep was intrigued, as he'd just finished reading Moneyball days before and for

years had conducted annual studies on topics like why big men from Africa tend to not meet recruiting expectations.

"There's this kid in my house that I don't know what to do with," Jim Cannon told to Telep at their lunch. "Can you help me?"

A short time later, Telep offered Cannon an internship at age 15, a transaction consummated by Drew handing his father the phone to make sure the terms -- $600 summer salary -- were acceptable.

Telep is considered the country's preeminent recruiting expert and also one of the game's most affable characters, as he's charismatic, quick-witted and comfortable navigating the nuanced basketball community.

Telep realized Cannon's numerical strengths and personality weaknesses, and over seven years helped round out his rough edges. Telep had Cannon spend one summer talking to high school coaches on the phone for a study on why mid-major players slip through the cracks. The phone interaction proved as valuable as the data.

"If he was going to do this, he couldn't do it with a lab coat on," Telep said.

Cannon spent so much time with Telep that his kids thought Cannon lived in the attic. Cannon annually tagged along to recruiting events from Virginia to Las Vegas. Telep recalls Cannon walking up a set of steep stadium stairs one year at NBA Camp in Virginia, holding a computer and typing in data at the same time. So eager to crunch the numbers, Cannon couldn't wait to get to his seat, and Telep worried Cannon would fall.

At a summer recruiting event in Las Vegas, Telep would have Cannon stay in the hotel lobby to work while he played blackjack. Oblivious to the siren's song of Vegas' nightlife, Cannon barely looked up from his spreadsheets. One year, Cannon was asked to leave the hotel lobby and crunched his numbers near the The Mirage's exploding volcano. His eyes didn't leave his MacBook screen.

"He gets lost in his computer more than anyone that I've ever seen," Telep said.

By the end of his seven years interning with Telep, an evolution occurred. Cannon had scouted hundreds of games. He became such a fixture that people would ask, "Where's Drew?" when Telep showed up alone at a gym. Along the way, Cannon's basketball savvy began to complement his numerical perspective.

"He probably thought he had all the answers and that his numbers never lied," Telep said. "Over time, the beauty of Drew is that what became more important than having the answer is the search for the right answer and the quest to do it right."

Cannon eventually developed his own scouting service, charging $100, and it included a 73-page breakdown of Nike's top spring and summer leagues, known as the EYBL.

Telep stressed to Cannon for years that he needed to take writing courses at Duke outside of his major to communicate his thoughts more clearly. By the end of college, his message had gotten across.

Cannon's report on high-major sleepers tabbed point guard Rene Castro (Worcester Academy) and power forward Andrew Chrabascz (Cushing Academy) as the top value prospects at their positions. (Castro was undervalued because he mostly played out of position and high majors shied away from the 6-foot-6 Chrabascz because he's an undersized power forward.) Someone must have been reading. Both ended up signing with Butler.

In the most fitting coincidence, the best illustration of Cannon's influence on the Butler coaching staff comes from Michael Lewis. No, not that Michael Lewis, the Moneyball author who helped usher baseball analytics to the mainstream. Butler's Michael Lewis blossomed into an Indiana high school star in Jasper, played point guard for Bob Knight at Indiana and is straight out of Hoosiers. Undersized, limited athletically and married to his high school sweetheart, Lewis is as old-school Indiana as a rim hanging on a barn. He's also the perfect foil for Cannon.

Lewis' instincts and ability to read the floor led him to stardom, as he still holds the school record for career assists at Indiana. Then there's Cannon, whose aversion to defense during noon pick-up games has left Lewis cursing his name in the Butler basketball office.

"It's ridiculous," Lewis said. "I'm 35, fat and old now. But when it's a one-point game, I would like to think I'm going to get the shot in a noon faculty game. I guess according to Drew's numbers his airball lay-up was a better shot."

The barbs between Cannon and Lewis, all good natured, have been relentless. Cannon encouraged his father, a Duke fan, to refer to Lewis a "poor man's Steve Wojciechowski." (Jim Cannon resisted). Lewis likes to walk into Cannon's office and write an equation on the white board.

Y-X2 = Offensive efficiency -Qdoba
# of fans

"Drew, what does this mean?" Lewis likes to joke. But Cannon has enjoyed the last laugh, as Lewis' transformation from mocking numbers to embracing them offers the most powerful evidence of Cannon's impact on the Butler basketball program this year. And perhaps it hints at the possibility that more statistical analysts can fit into college basketball programs.

How did Lewis come around? "He hasn't been wrong," Lewis said of Cannon.

The Butler coaches have enjoyed the Cannon-Lewis back-and-forth, one of the most entertaining inter-office subplots of the Bulldogs season. "They couldn't be further apart on the spectrum," Stevens said. "It's funny to see those two interact."

Lewis said the key to Cannon's ability to slip seamlessly into the staff dynamic is Stevens' lack of an ego. Stevens not only allows everyone to express their opinions -- including graduate managers Cannon and T.J. Saint -- he encourages them.

"That's where Brad is good," Lewis said. "He's constantly inviting and asking his opinions to make him feel comfortable."

Lewis admits his conversion to embracing numbers has been gradual and jokes that he's a little slower student than the rest of the Butler staff. But sometime this season, Butler's Michael Lewis has crossed the paradigm into the world of Moneyball's Michael Lewis. When he gets a head coaching job, Lewis plans to hire someone like Cannon.

"No question, if you have the opportunity to have someone like that on your staff, it's very valuable," Lewis said. "His stuff is so good."

The most intriguing part about Cannon may be the door he could open for statistical thinkers. For now, he's thrilled to be earning an advanced degree, paying $400 per month in rent and learning the intricacies of basketball strategy. Cannon also has a long list of projects planned. Stevens said Cannon will go through all of Butler's practice plans at the end of the season and conduct a study of what drills led to better play in games. "He thinks of things like that all the time that are completely out of the box," said Stevens.

Cannon becomes uncomfortable when attempting to frame his role in the statistical movement, saying, "Hopefully I don't screw it up and other teams think it's a good idea still."

But in the statistical community, his employment has been greeted with excitement. Cannon had been writing articles for Ken Pomeroy, founder of KenPom.com, before getting hired by Butler this summer. Pomeroy is the bellwether of the college basketball statistical movement, with his tempo free statistics merging into the mainstream conversation of college basketball the past few years. He's achieved enough success where he began charging a subscription fee for his site and left his day job as a meteorologist to work on the site full-time. He also has a small consulting deal with Iowa State, which pays him $2,500 a year. What excites Pomeroy about Cannon is his upside.

"You're learning from mistakes at 22 instead of 32 when I started," he said. "Certainly he's going to be the guy people look at in the next 10 years who want to get into this business."

Cannon is flattered by that notion, but deflects a question about his future saying he has another year of graduate school at Butler and is delighted to not have to make a decision until then.

Telep says confidently that he'll end up working for Cannon someday. "It's impossible to say where Drew is going to be in 10 years," Telep said. "You don't put limits on people like him."

Pomeroy said that Cannon is in a perfect spot, as historically there's been statistical experts who go work for NBA teams and their advice is ignored. Telep wonders if anyone will be able to pry Cannon away from Stevens, as the coach has become so engaged with Cannon's work.

Pomeroy is skeptical, however, that a flurry of hires of statistical analysts will begin in college basketball, as there needs to be both well-rounded candidates and open-minded coaches.

"What makes Drew special, and this shouldn't be taken lightly, is that he's good at crunching numbers and he's good at interpreting those numbers in a way that a coach can understand, sensibly and rationally," Pomeroy said. "He knows his role in informing a coach's opinion. For a guy to do that at 22 is pretty outrageous."

Perhaps just as outrageous, Jim Cannon will be driving from Raleigh to Lexington on Thursday to watch his son be a part of the NCAA tournament. The kid who hadn't played organized basketball since junior high will be compiling integral data for Brad Stevens. The kid whose parents were worried about him living in the basement will offer key input into the Butler gameplan.

"I'll be very curious to see where it leads," Jim Cannon said. "I just don't know. Ten years ago, who would have imagined that this was even a possibility?"

http://sportsillustrated.cnn.com/-college-basketball-mens-tournament/news/20130320/drew-cannon-butler/#ixzz2j1mjkij2

Overthinking It

Dusty Baker and the Modern Manager's Survival Manual
by Ben Lindbergh

Dusty Baker was fired on Friday, and few Twitter tears were shed. When a manager who's perceived to be anti-analysis gets the axe, sabermetricians celebrate. It's about time, we think. All those bunts by position players, all those illogical lineups, all those refusals to bring in the closer with a tie game on the road. We said they didn't make sense, and someone finally listened. Maybe Bob Castellini reads blogs! Ding-dong, the Dusty era is dead. We did it!

Well…no, probably not. Most managerial hirings and firings aren't referendums on the industry's acceptance of sabermetrics, or the result of what anyone on the internet says. Sure, Baker was known as one of the game's most first- and second-guessable tactical managers, and sure, he's now out of a job. Correlation, causation, etc. Maybe Baker was let go because the Reds felt his in-game decisions and reluctance to look at certain stats were costing them wins, but it's not the only (or even the most likely) explanation.

Maybe, as Castellini and Walt Jocketty said, it was because the Reds looked lifeless while losing six straight to end the season. Maybe it was because they didn't win the division. Maybe it was because Baker smiled when Brandon Phillips insulted C. Trent Rosecrans. Or maybe the clubbies complained about cleaning up toothpicks. Baker was in Cincinnati for six seasons, which is plenty of time for miscommunications to occur and resentments and disagreements to simmer. The explanation probably isn't as simple as, "He preferred RBIs to on-base percentage."

Managers, as the old saying goes, are hired to be fired. (Baker wasn't even the only manager let go last week.) Manny Acta, among the most openly "sabermetric" managers, has been let go by multiple teams. He's currently an ESPN analyst. And the frontrunner to succeed Baker in Cincinnati is reportedly Jim Riggleman, who isn't known as a particularly progressive skipper (though he's not necessarily against new-age information, either). It's not as if all it takes to get a managerial job post-Moneyball is to profess an appreciation for stats. There's much, much more to the gig than that.

But when Baker told USA Today "I still plan on managing" and proclaimed "I'll be back," I wondered whether anyone would take him up on the offer.

Baker may be popular with his players, and he may, for the most part, prepare them to play hard. And that ability to inspire might be a manager's most important quality (although it also seems to be one that expires after a long enough stretch in the same clubhouse). But it's not the only important quality, and it's not so scarce that a team has to settle for someone who's below average at everything else.

http://www.baseballprospectus.com/article.php?articleid=21979