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## Pitch recognition program helped change SEMO baseball

Dave Matter  
Jul 10, 2016

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Southeast Missouri State coach Steve Bieser (left) and pitcher Jake Busiek, before an NCAA regional tournament game against Mississippi State on June 3. Bieser has been named head baseball coach at the University of Missouri. (AP Photo)

**COLUMBIA, MO.** • In Saturday's paper we told you about some of the **innovative technologies** new Missouri baseball coach **Steve Bieser** used at **Southeast Missouri State**, including a pitch recognition program inspired by the work of SIU-Carbondale professor

**Dr. Peter Fadde.**

Eventually, they became a team — Fadde, Bieser and SEMO hitting coach **Dillon Lawson**.

“We had two goals,” Fadde said last week. “We wanted to stay true to the scientific principles, and that’s the occlusion method. The other part was we really needed it to fit with what they do with the players — not some new exotic thing.”

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Here’s more on the methods behind the madness that helped turn SEMO into one of the nation’s most prolific offensive teams the last three seasons. The same innovations will more than likely be coming to Mizzou’s program under Bieser.

- Fadde has spent his career studying the science of hitting and pitch recognition, spending years analyzing hitters and pitchers in the Cape Cod League every summer. You can read more of his work **here**.

“The science part is simple and the technology part, too,” Fadde said. “The occlusion method is something they started doing in the sports science labs in the early 1980s. It’s where they break down timing of hitting a pitch. You’ve got tenths of a second to execute the whole skill. You work it down to where you’ve got about 200 milliseconds to recognize a pitch and make a decision. That’s pretty much a fast eye blink.”

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“The people able to do this must be picking up some advance information. I remember seeing a study in St. Louis that included **Albert Pujols** and testing reaction time. It turned out he has good reaction time — probably better than you or me — but not super human. It’s not a hardware advantage. It’s a software advantage.”

“With the occlusion method,” Fadded added, “you’re showing an athlete video of opponent that’s shot from the participant’s point of view, then you cut it off before you see the whole ball flight. Like so many other things, if you cut off one part then the other part has to work harder.”

- By adopting the occlusion method into the team’s hitting regimen, SEMO coaches could test the players baseline pitch recognition ability during the offseason, then use video training methods to enhance their ability to recognize pitches in the milliseconds that they’re released from the pitcher’s grip. The training included having hitters shout out pitch types in the batting cage as the ball is released.

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“We created a program to fit into what we were already doing,” Lawson said. “Guys already hit off the tee. They already would stand in and track pitches during bullpens. They already watched video. We were trying to add little bits and pieces of pitch recognition to their normal daily routines. We were able to do it and be quite successful with it. It gave us a huge competitive advantage at SEMO.”

The results were astounding. Remember, from the story, the SEMO staff began using the pitch recognition system prior to the 2014 season. The Redhawks returned eight of nine starters in 2014, so the lineup was essentially the same as it was in 2013.

Notice the uptick in production:

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### **Batting average**

2013: .285

2014: .306

2015: .303

2016: .309

### **Slugging percentage**

2013: .392

2014: .422

2015: .477

2016: .472

### **On-base percentage**

2013: .367

2014: .389

2015: .405

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2016: .409

### **Home runs**

2013: 24

2014: 32

2015: 66

2016: 60

### **Walks**

2013: 210

2014: 246

2015: 326

2016: 335

### **Runs per game**

2013: 5.7

2014: 7.2

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2015: 8.0

2016: 7.9

After the 2014, Fadde wanted to make sure the progress was authentic and not a statistical oddity. He did a comprehensive study analyzing SEMO's hitting stats compared to Jacksonville State, another top team in the Ohio Valley Conference. Like SEMO, JSU returned the bulk of its lineup from the previous season.

After studying the data of both teams, Fadde concluded SEMO's progress was "beyond the reasonable expectation of a good team getting better."

- SEMO players bought into the program, Lawson said. Some might have been more reluctant at first, and some might not have associated the program with their progress. But the results were hard to dismiss.

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"It's a complex idea and system in how it actually works, but for the players, all they need to know is if they do it they'll get better," Lawson said. "Some aren't even aware they're improving."

**Derek Gibson** was an example. The outfielder was already one of the OVCs best offensive players when SEMO started using the pitch recognition program. He hit in the .330s as a sophomore and junior. In 2014, as a sophomore, Gibson hit .403, raised his slugging percentage 150 points to .571, nearly doubled his extra-base hits and more than doubled his RBI total.

Said Lawson: “He would say, ‘Coach, I’ve never seen the ball this well this early. I’m a notoriously slow starter. I don’t know understand how this happening.’ I told him, ‘Derrick, do you think what we’ve been doing has anything to do with it?’”

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Gibson, who came to SEMO to play quarterback and joined the baseball team as a walk-on, went undrafted last year but signed with the Cardinals and reached Class AA by July.

- Gradually, MLB scouts took notice of SEMO’s hitting success. “Our first scout day after implementing the program, multiple scouts remarked how few swing and misses we had at pitches in the zone and how rarely we were chasing pitches out of the zone,” Lawson said. “They had no idea we were doing this training but they were seeing the end result.”

Lawson, now the hitting coach for the Class A in Troy, N.Y., the Tri-City Valleycats, has since implemented elements of the pitch recognition program at multiple levels in the Astros organization. Fadde isn’t aware of other organizations using the technology, but he’s spoken to several teams at in-service meetings.

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• Pitch recognition isn't the only technology accelerator that Bieser used at SEMO. Exit velocity became a tool in his arsenal, too. Here's more from Lawson on SEMO's use of exit velocity metrics:

“That was something we really went to town on in the last year (2015) and felt confident in implementing training program with that. Obviously we saw some good results with how the ball came off the bat. But even still, just like the pitch recognition program, it has so many arms and legs and reaches all different kinds of areas of the game. As coaches we talk about the student of the game being lost but having that pitch recognition program allowed us to talk about the game in such detail that our players became students of the game again. The exit velocity program had some of those same results but in different way. From a competitive standpoint and developing a competitive spirit, it was outstanding. Just like it is in the weight room. Guys want to .hit the ball harder than their teammate. So when you get that kind of effort and intensity into each swing it makes each swing that much more valuable and you get the quality over quantity effect.”

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## Dave Matter

Dave Matter is the Mizzou beat writer for the St. Louis Post-Dispatch.



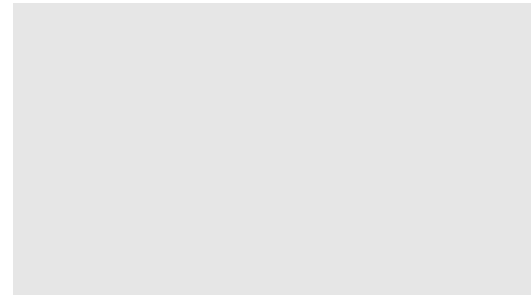
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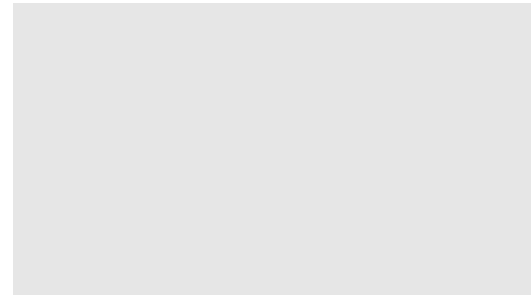
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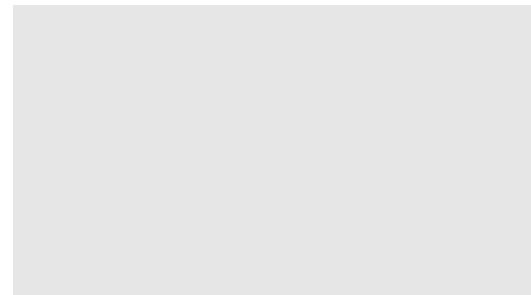
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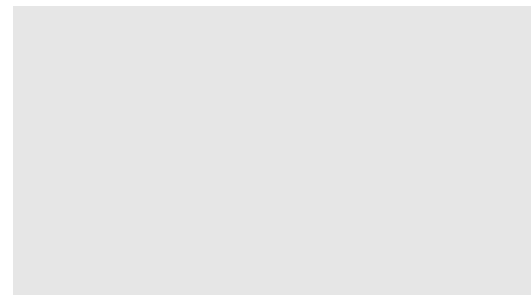
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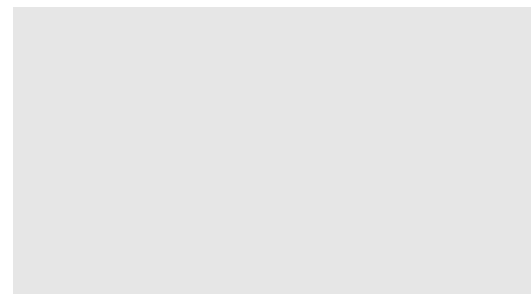
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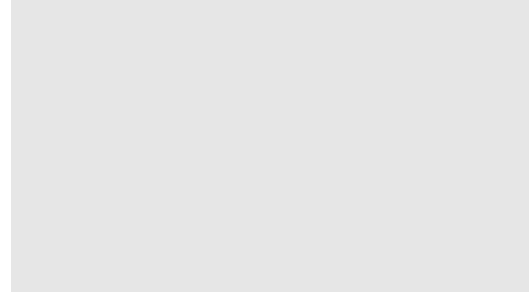
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