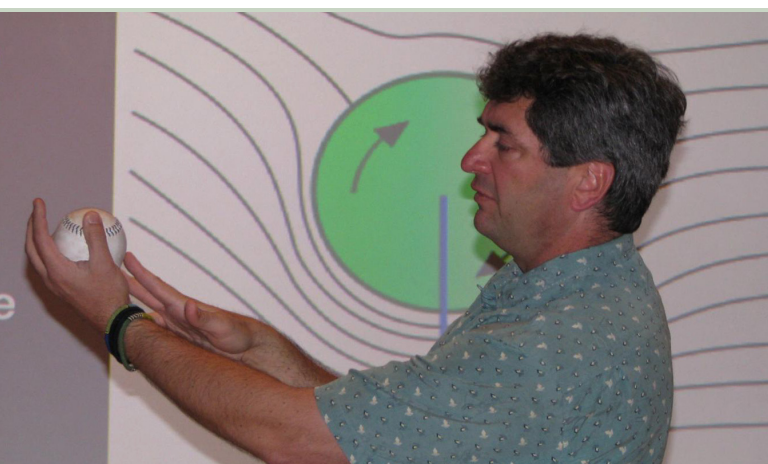# Special Webinar Series

WPI | ROBERT A. FOISIE
SCHOOL OF BUSINESS

Andy Andres teaches introductory physics and biology, but his most popular course – which has attracted 18,500 online students to date – is Sabermetrics 101: Introduction to Baseball Analytics.

Sabermetrics – a term coined by influential statistician Bill James in reference to the Society for American Baseball Research – uses in-depth data to analyze the performance potential of baseball players and other athletes.

Whether you're a fan of baseball or big data, whether you're pursuing a career in baseball analytics or you want an edge in putting together a fantasy team, Andres' webinar will provide you with insights.

Click here to register for:
An Introduction to Sabermetrics, Baseball Analytics, Data Science, the R Language, and SQL
Thursday, July 9, 12:30 to 1:30 p.m.

Sabermetrics Is a "Hit" for Biology Professor

Sabermetrics was created as a tool to analyze baseball players, but the methodology made famous by the book and movie, "Moneyball," is increasingly being applied not only to other sports, but to the business world.

Professor **Andy Andres**, a senior lecturer of natural science at Boston University who studied sabermetrics as a hobby, says the success of sabermetrics in baseball is resulting in an expansion of its use into basketball, football, cricket and other sports. In business, a similar analytics approach is being used not only to assess potential hires, but mergers and acquisitions, and the development of new products.

With technological advances, such as the use of R language and big data applications, sabermetrics is likely to continue evolving – and growing.

Andres will provide an introduction to sabermetrics and its potential applications during, **"An Introduction to Sabermetrics, Baseball Analytics, Data Science, the R Language, and SQL,"** a Special Webinar Series webinar to be held at 12:30 p.m. on **July 9, 2015. To register,** click here.

Degrees in Baseball Analytics

As sabermetrics evolves, Andres believes it will be taught more broadly and universities will offer degrees in sports analytics.

"It may be coming shortly," he says. "A lot of students are in the game, working for major league baseball or writing about it."

Every professional baseball team now has a statistical analyst on its payroll. Some students who have taken Andres' course are among those who work as analysts in baseball.

Given the potential profit a winning team can provide, it's no wonder professional teams are paying attention to sabermetrics. But Andres adds that, while sabermetrics can provide a competitive advantage, it's not necessarily going to determine the next World Series winner.

"The game is still a game," Anders says. "Sabermetrics is not a golden ticket; it provides a marginal advantage that, accumulated over time, helps a team win more games."

And, of course, if every team is using it, it doesn't provide the competitive advantage that is used to provide – although some teams have better analysts than others, and some managers pay more attention to analytics than others.

"Personality and character are harder to measure," Andres notes. "One thing is true – a person is a combination of talents. The other piece teams have to work on is making sure those talents are maximized in terms of performance. Character and mind set absolutely matter. They're part of the skill set people own."

Another factor that plays a role in the outcome of games is "noise," which is how Andres describes factors that are out of a player's control.

"There's still a huge variable between skills and talents, and outcomes," according to Andres. "There are so many steps that introduce noise into the system; there's no way it can be scripted. Noise is random. It's not about the player's real ability. A lot of hits happen because official scorers can't call them an error; it's poor defense."

Assume, for example, that a pitcher makes a great pitch and the hitter makes weak contact, but the wind gets under the ball and just barely carries it over the fence for a home run. What would almost always be an out becomes a home run, adding to the hitter's batting average and the pitcher's earned run average.

Talent Trumps Analytics

"You can't quantify the impact of sabermetrics," Andres says, "but careful observation and very thoughtful approaches to any system can't be harmful. I still want Ted Williams, Babe Ruth and Barry Bonds on my team. True talent matters a lot more than a great analyst."

Regardless, sabermetrics will continue growing. Data storage is inexpensive and "the amount of data collected is growing exponentially," according to Andres. "The growth in the amount of data won't stop. This is where you need good analysts who are thoughtful about what they look at."

For example, sabermetrics today has begun tracking "catcher framing," which is the ability of a catcher to "steal" strikes by framing pitches so the umpire will call a strike, even when the pitch is out of the strike zone. "Batted ball velocity," which is how hard a player hits the ball, is another important new metric.

"If you hit harder and have more bat speed," Andres explains, "on average, you will hit farther and for base hits more often."

While there is no such thing as catcher framing or batted ball velocity in the business world, Andres says that sabermetrics applied to the business world is "really the same thing" as it is in baseball.

"It's about the business person who takes the time and has the ability to observe carefully whatever system they're working with to collect data and ask questions," he explains. "It leads to data-driven decision making, which really is the same model."

Sabermetrics is comparable not only to business analytics, but to econometrics, in which economists analyze economic data. And Andres, likewise, doesn't see a great leap between his work in baseball and his work in the classroom, as he considers sabermetrics to be "the science of baseball."

Most people define science as close observation," according to Andres. "It's about objective thinking, without conventional wisdom or bias."

Andres developed an interest in sabermetrics by reading the writing of Bill James, the sports writer and statistician who invented the term sabermetrics. Being an educator, "I thought about how to teach this to people."

His interests led to his becoming the lead instructor and head coach of MIT's Science of Baseball Program and in 2004 he taught one of the first-ever college courses in sabermetrics at Tufts University. In 2012, he received the Society of American Baseball Research (SABR) USA Today Sports Weekly Award for his research on Tommy John surgery and pitch fx. He has also updated and edited the second edition of How to Value Players for Rotisserie Baseball, a book on fantasy player valuation by Art McGee. A datacaster and stringer for Major League Baseball (mlb.com) at Fenway Park, he scored Game 6 of the 2013 World Series.

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