



# Analytics Conference

March 15-17, 2012

Bloomberg  
SPORTS



TM



MAJOR LEAGUE BASEBALL  
PROUDLY SUPPORTS  
THE INAUGURAL  
SABR ANALYTICS CONFERENCE



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# Welcome!

The Society for American Baseball Research has a long and storied history with baseball statistical analysis, evidenced by the link between our name and sabermetrics. While SABR is a multi-faceted organization involved in virtually every aspect of baseball, we have taken a major step to re-connect with our beginnings by producing and hosting the inaugural

## SABR Analytics Conference presented by Bloomberg Sports and Major League Baseball

This event is a natural for SABR. Never before have as many of the top minds of the baseball analytic community come under one roof to discuss, debate and share insightful ways to analyze and examine the great game of baseball.

The SABR Analytics Conference begins Thursday, March 15 and concludes Saturday, March 17 at the Hilton Phoenix East/Mesa in Arizona. The schedule will consist of a combination of Guest Speakers, Panels and Research Presentations — plus the inaugural SABR Case Competition, in which graduate and undergraduate students will analyze and present a real baseball operations decision.

Our long history in this area of baseball research, coupled with our mission of advancing the understanding and the knowledge of baseball makes us the perfect choice to coordinate and host such a ground-breaking event.

**Vince Gennaro, SABR President**  
**Marc Appleman, SABR Executive Director**

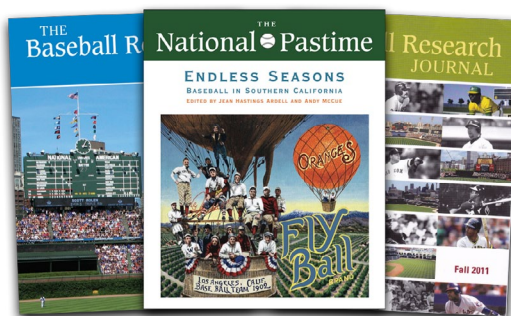
## About SABR

With more than 6,000 members, the Society for American Baseball Research is as diverse as a crowd at a baseball game. Some are into statistics and analytics. Some are active writers and historians. Most of all, SABR members love talking baseball with like-minded friends.

What unites them is an interest in the game and a passion in learning more about it.

### Membership benefits

- ♦ 2 issues of the *Baseball Research Journal*, 1 issue of *The National Pastime*
- ♦ Regional chapter meetings, which include guest speakers, presentations and trips to ballgames
- ♦ Online access to research resources
- ♦ Discount on convention registration
- ♦ Opportunity to be part of a passionate international community of baseball fans



### How to join

**Visit [SABR.org/join](http://SABR.org/join)  
and choose from  
adult, under-30 or  
senior memberships**



# Events Schedule

## THURSDAY, MARCH 15

♦ **9:00 a.m.: Registration opens**  
(Kiva Foyer)

♦ **1:30-2:45 p.m.: Changing Face of Baseball Data Panel**  
(Kiva A room)

Dave Cameron, FanGraphs; John Dewan, Baseball Info Solutions; Cory Schwartz, MLB.com.  
Moderator: Sean Forman, Baseball-Reference.com.

♦ **3:00-3:45 p.m.: RP1—Dave Studenmund, “Postseason Championship WPA: A Full Accounting”**  
(Kiva B room)

♦ **3:00-3:45 p.m.: RP2—Vince Gennaro, “Top 10 Value Plays for Building a Roster”**  
(Kiva A room)

♦ **3:45-4:30 p.m.: RP3—Brian Cartwright, “Counting Defense: Extending Defensive Efficiency Rating to the Player Level”**  
(Kiva B room)

♦ **3:45-4:30 p.m.: RP4—J.C. Bradbury, “Impact of Pitch Counts/Rest on Pitcher Performance”**  
(Kiva A room)

♦ **5:00-6:00 p.m.: Bloomberg Sports—Next Generation of Team Analytics**  
(Kiva Ballroom)

Bill Squadron, Bloomberg Sports; Shiraz Rehman, Chicago Cubs.

♦ **6:00-7:00 p.m.: Player Panel**  
(Kiva Ballroom)

Brandon McCarthy, Oakland Athletics. Moderator: Rob Neyer, Baseball Nation.

♦ **7:00-10:00 p.m.: Welcome/Networking Reception**  
(Kiva Ballroom)

Derrick Hall, Arizona Diamondbacks.

Reception to follow poolside. Appetizers to be served with cash bar.

# Events Schedule

## FRIDAY, MARCH 16

### ♦ 8:30-9:45 a.m.: General Managers Panel

(Kiva Ballroom)

Chris Antonetti, Cleveland Indians; Jerry Dipoto, Los Angeles Angels of Anaheim; Doug Melvin, Milwaukee Brewers. Moderator: Ken Rosenthal, MLB Network/FoxSports.com.

### ♦ 10:00-10:45 a.m.: Featured Speaker: Tom Ricketts

(Kiva Ballroom)

Tom Ricketts, Chicago Cubs. Moderator: Vince Gennaro, SABR President.

### ♦ 11:00-11:45 a.m.: RP5—Patrick Kilgo, et. al, “Bridging the Gap Between Sabermetrics and Formal Statistical Inference: Toward a Unified Approach to Baseball Research”

(Pueblo Room)

### ♦ 11:00-11:45 a.m.: RP6—Greg Rybarczyk, “Integral Baseball: Comprehensive Performance Valuation via Player Tracking”

(Kiva Ballroom)

### ♦ 11:45 a.m.-1:00 p.m.: Lunch

(Atrium)

### ♦ 1:00-2:00 p.m.: A Retrospective Look at Baseball Analysis

(Kiva Ballroom)

Dick Cramer, SABR; Gary Gillette, SABR; John Thorn, Official Historian for Major League Baseball. Moderator: Sean Forman, Baseball-Reference.com.

### ♦ 2:15-3:15 p.m.: Fantasy Baseball Panel

(Kiva Ballroom)

Derek Carty, Baseball Prospectus; Craig Glaser, Bloomberg Sports; Eno Sarris, FanGraphs. Moderator: Cory Schwartz, MLB.com.

### ♦ 3:30-4:15 p.m.: RP7—Andy Andres, Jason Lefkowitz, “Projecting NCAA Division 1 Player Performance”

(Pueblo Room)

### ♦ 3:30-4:15 p.m.: RP8—Graham Goldbeck, “Pitch f/x and Hit f/x Component Aging Curves”

(Kiva Ballroom)

### ♦ 4:30-5:45 p.m.: Clubhouse Confidential Panel

(Kiva Ballroom)

Dave Cameron, FanGraphs; Jay Jaffe, Baseball Prospectus; Vince Gennaro, SABR President; Rob Neyer, Baseball Nation.

### ♦ 5:45-6:00 p.m.: First Round Results of Case Competition

(Kiva Ballroom)

## Case Competition

### Friday's 1st-round schedule

#### ♦ Bracket 1:

11:00 a.m.-2:00 p.m.,  
Kachina A room

♦ Bracket 2: 1:00-4:00 p.m.,  
Kachina B room

♦ Bracket 3: 2:15-4:35 p.m.,  
Kachina A room

Details on page 16

# Events Schedule

## SATURDAY, MARCH 17

♦ **8:45-10:00 a.m.: Scouting and Analytics Panel**

**(Kiva Ballroom)**

Joe Bohringer, Chicago Cubs; A.J. Hinch, San Diego Padres; Corrine Vitolo, SmartKage.

Moderator: Dan Migala, PCG

♦ **10:15-11:00 a.m.: RP9—Dave Cameron, “Pitching Injuries and the Free Agent Market”**

**(Pueblo Room)**

♦ **10:15-11:00 a.m.: RP10—John Dewan/Ben Jedlovec, “The Fielding Bible III—An Evaluation of the Ted Williams Shift”**

**(Kiva Ballroom)**

♦ **11:15 a.m.-12:00 p.m.: Featured Speaker: Mark Shapiro**

**(Kiva Ballroom)**

Mark Shapiro, Cleveland Indians. Moderator: Ken Rosenthal, MLB Network/FoxSports.com.

♦ **12:15-1:30 p.m.: Lunch**

**(Atrium)**

♦ **1:30-2:45 p.m.: Digital World Meets Baseball Information Panel**

**(Kiva Ballroom)**

Jeff Bennett, ESPN; Rob Shaw, Bloomberg Sports; Ryan Zander, Sportvision.

Moderator: Michele Steele, ESPN.

♦ **3:00-5:15 p.m.: Case Competition Finals**

**(Kiva Ballroom)**

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## Baseball-Reference.com Open Forum

Baseball-Reference.com has more than 1 million pages of statistical content and is adding more every day. The site has so much that, like many other users, you may find it nearly impossible to track or find all of the features on the site. Baseball-Reference.com founder **Sean Forman will be available for two hours at 8:00-10:00 a.m. on Friday and Saturday mornings in the Kachina A room** to provide tips, suggestions and answer user questions. In addition to a rundown of popular features and tools, Sean will show you how to embed B-R content within your blogs or websites, quickly link from your articles to Baseball-Reference.com player pages, and promote your content directly to Baseball-Reference.com users.

Ask Sean for a free 15-day trial to the Baseball-Reference.com Play Index!

# Featured Speakers

## **Tom Ricketts**

### **Chairman, Chicago Cubs**

Tom is the Chairman of the Chicago Cubs, and the Chief Executive Officer of Incapital LLC, a Chicago investment bank that packages corporate bonds for retail investors. He is also a director of TD Ameritrade Holding Corporation. Tom was a Cubs fan of over 25 years and when introduced as the team's Chairman, he outlined three goals for the organization: Strive to be the best in baseball every single year and to win the World Series, preserve and improve the Wrigley Field experience for future generations, and to be good neighbors, giving back to the city and neighborhood. Ricketts has an AB in economics and an MBA in Finance from the University of Chicago.

**10:00 a.m., Friday, March 16 (Kiva Ballroom)**



## **Derrick Hall**

### **President/CEO, Arizona Diamondbacks**

Derrick was named team president in September 2006 and later added the title of CEO in January 2009. He originally joined the Diamondbacks in May 2005 as Senior Vice President, Communications, and served in numerous other capacities until being named president. His leadership in the local community has allowed the Diamondbacks to become the first professional sports team to win the inaugural 2010 United Nations NGO Positive Peace Award. Hall, who serves on MLB's diversity committee, now gives numerous keynote speeches to various groups or conventions throughout the country about his unique vision on leadership, customer service and culture.

**7:00 p.m., Thursday, March 15 (Kiva Ballroom)**



## **Mark Shapiro**

### **President, Cleveland Indians**

Mark is entering his second season as President of the Cleveland Indians after spending the previous nine seasons from 2002-2010 as Executive Vice President and General Manager. The 2011 season marked his 20th season overall with the organization. During Shapiro's nine-year tenure as Executive Vice President and General Manager from November 2001 thru 2010 the Indians twice won 90 or more games (2005, 2007) and in 2007 the Indians captured the American League Central Division title with a Major League best-equaling record of 96-66 and advanced to within a game of the World Series. Following the 2005 and 2007 seasons Shapiro was named the Sporting News Executive of the Year.

**11:15 a.m., Saturday, March 17 (Kiva Ballroom)**



# Speakers/Panelists

**Changing Face of Baseball Data Panel:** Data is the foundation of baseball analytics. New data capture methods are yielding information such as the speed of the ball off the hitters' bat and the route a fielder takes to the ball. Technologies such as Doppler radar are now being used to record and measure the events on the field. The net result of this innovation is a new world of baseball analytics, which is overhauling the way MLB teams make decisions. **1:30 p.m., Thursday, March 15, Kiva A room.**

- ♦ **Dave Cameron, FanGraphs:** Dave is Managing Editor and a Senior Writer at FanGraphs. He was the co-founder of the U.S.S. Mariner blog and previously worked at Baseball Prospectus.
- ♦ **John Dewan, Baseball Info Solutions:** John left his highly successful career as an actuary to become one of the founders, majority owner and CEO of STATS, Inc. He is now the owner of Baseball Info Solutions. The third volume of his highly acclaimed *Fielding Bible* series, focusing on defensive analytics, is available now.
- ♦ **Cory Schwartz, MLB.com:** Cory is Vice President of Statistics for MLB.com and co-host of "Fantasy 411" on MLB.com and MLB Network. He is also a pioneer of the Pitch f/x system.
- ♦ **Moderator: Sean Forman, Baseball-Reference.com:** Sean is the founder of Baseball-Reference.com. A recipient of the 2011 Henry Chadwick Award, honoring baseball's greatest researchers, he is also a co-founder of BaseballThinkFactory.org and has authored numerous sabermetric articles.

**Bloomberg Sports—Next Generation of Team Analytics:** Bill Squadron, head of Bloomberg Sports, will demonstrate the most advanced and integrated system for baseball operations ever developed and now being used by almost all MLB clubs. The system is a one-stop shop that allows teams to address all of their baseball needs in a single unit. Bill will be joined by Shiraz Rehman, who will talk about the relationship established between the Chicago Cubs and Bloomberg Sports. **5:00 p.m., Thursday, March 15, Kiva Ballroom.**

- ♦ **Bill Squadron, Bloomberg Sports:** Bill is head of Bloomberg Sports, which provides data, statistical analysis and visualizations for sports professionals and fans. From 1997 to 2003, he was co-founder, Chairman and CEO of Sportvision, pushing for television innovations such as the yellow first down marker in football, NASCAR Race f/x and the "K Zone" baseball tracking system.
- ♦ **Shiraz Rehman, Chicago Cubs:** Shiraz is Assistant to the General Manager of the Chicago Cubs. He spent six seasons with the Arizona Diamondbacks, serving as the director of player personnel and previously as director of baseball operations.

**Player Panel:** How has analytics changed major league players' approach to the game, their preparation and their performance? **6 p.m., Thursday, March 15, Kiva Ballroom.**

- ♦ **Brandon McCarthy, Oakland Athletics:** Brandon is a starting pitcher for the Oakland Athletics. He set career highs in wins (9), starts (25), complete games (5), innings pitched (170.2) and strikeouts (123) in 2011, and shattered an A's franchise record with a 4.92 strikeout-to-walk ratio.
- ♦ **Moderator: Rob Neyer, Baseball Nation:** Rob is the National Baseball Editor for SB Nation. He previously worked with Bill James, STATS, Inc. and ESPN.com. He has also written or co-written six baseball books, including *The Neyer/James Guide to Pitchers* (with Bill James).



# Speakers/Panelists

**General Managers Panel:** On how major league front offices are using analytics to develop a competitive edge and stay ahead of their competition. **8:30 a.m., Friday, March 16, Kiva Ballroom.**

- ♦ **Chris Antonetti, Cleveland Indians:** Chris is entering his second season as Executive Vice President and General Manager of the Cleveland Indians since being elevated to the position following the 2010 season. It is his 13th season overall with the franchise after spending nine seasons as Assistant General Manager and, later, Vice President of Baseball Operations from 2002-10.
- ♦ **Jerry Dipoto, Los Angeles Angels of Anaheim:** Jerry is entering his first season as Senior Vice President and General Manager of the Los Angeles Angels of Anaheim. He previously spent six seasons with the Arizona Diamondbacks, most recently as the Senior Vice President, Scouting & Player Development.
- ♦ **Doug Melvin, Milwaukee Brewers:** Doug was named Executive Vice President and General Manager of the Milwaukee Brewers in 2001. During Melvin's tenure, the organization's farm system has produced a number of players who have contributed greatly to the Major League team. Prior to joining the Brewers, Melvin was General Manager of the Texas Rangers from 1996-2001.
- ♦ **Moderator: Ken Rosenthal, MLB Network/FoxSports.com:** Ken is a Baseball Insider for MLB Network and regularly appears on MLB Tonight and Hot Stove. A sportswriter for more than 20 years, he also is FoxSports.com's senior baseball writer and a weekly contributor to the Fox Saturday Baseball Game of the Week. On-air since 2005, he serves as the field reporter during Fox Sports' featured baseball matchup.

**A Retrospective Look at Baseball Analysis:** When SABR was founded in 1971, the analysis of baseball statistics was in its infancy. Mainframe computers were expensive and the Internet didn't exist yet. Since then, technology in the Information Age has allowed millions of fans to access and understand sabermetrics, analyzing data at home and connecting with others across the globe. Leaders of the early days of baseball analysis will discuss the evolution of sabermetrics and where it's headed in the future. **1:00 p.m., Friday, March 16, Kiva Ballroom.**

- ♦ **Dick Cramer, SABR:** Dick is an early pioneer in baseball statistical analysis. With Pete Palmer, he founded SABR's ground-breaking Statistical Analysis Committee in the 1970s and helped form STATS, Inc., in 1981. He has written many articles in the *Baseball Research Journal*.
- ♦ **Gary Gillette, SABR:** Gary has been on SABR's Board of Directors since 2009. He is the editor of SABR's annual *Emerald Guide* and is co-chair of the Ballparks Research Committee. He is also a co-editor of the *ESPN Baseball Encyclopedia*.
- ♦ **John Thorn, MLB:** John was appointed the Official Historian of Major League Baseball in 2011. A longtime SABR member and a past Bob Davids Award winner, his books include *Baseball in the Garden of Eden*, *Total Baseball*, *The Hidden Game of Baseball* and *Treasures of the Baseball Hall of Fame*.
- ♦ **Moderator: Sean Forman, Baseball-Reference.com:** Sean is the founder of Baseball-Reference.com. A recipient of the 2011 Henry Chadwick Award, honoring baseball's greatest researchers, he is also a co-founder of BaseballThinkFactory.org and has authored numerous sabermetric articles.

# Speakers/Panelists

**Fantasy Baseball Panel:** What we can all learn from Fantasy Baseball and the way it has impacted Major League Baseball teams. **2:15 p.m., Friday, March 16, Kiva Ballroom.**

- ♦ **Derek Carty, Baseball Prospectus:** Derek is the Fantasy Manager at Baseball Prospectus. He previously served as fantasy baseball manager of The Hardball Times.
- ♦ **Craig Glaser, Bloomberg Sports:** Craig is an Application Developer at Bloomberg Sports. The founder of Sabometrics.com, he is a lifelong Mets fan whose writing has previously appeared on Amazon's Avenue at SB Nation and on The Hardball Times.
- ♦ **Eno Sarris, FanGraphs:** Eno, a graduate of Stanford University, is a writer for FanGraphs, Amazon's Avenue of SB Nation and RotoGraphs, a FanGraphs-based blog affiliate.
- ♦ **Moderator: Cory Schwartz, MLB.com:** Cory is Vice President of Statistics for MLB.com and co-host of Fantasy 411 on MLB.com and MLB Network. He is also a pioneer of the Pitch f/x system.

**Clubhouse Confidential Panel:** Our panelists appear regularly on MLB Network's signature sabermetrics program, "Clubhouse Confidential" (airing at 5:30 p.m. and 7:30 p.m. daily). The panelists will be discussing a wide range of analytics issues, and you will have the opportunity to ask them questions related to baseball analytics, value projection and other topics. **4:30 p.m., Friday, March 16, Kiva Ballroom.**

- ♦ **Dave Cameron, FanGraphs:** Dave is Managing Editor and a Senior Writer at FanGraphs. He was the co-founder of the U.S.S. Mariner blog and previously worked at Baseball Prospectus.
- ♦ **Jay Jaffe, Baseball Prospectus:** Jay is the author of Baseball Prospectus' weekly Prospectus Hit List, the Prospectus Hit and Run column and BP's in-house expert on the Hall of Fame.
- ♦ **Vince Gennaro, SABR:** Vince is the President of SABR and author of *Diamond Dollars: The Economics of Winning in Baseball*. He is a consultant to MLB teams, and he teaches in the graduate programs at Columbia University and Manhattanville College.
- ♦ **Rob Neyer, Baseball Nation:** Rob is the National Baseball Editor for SB Nation. He previously worked with Bill James, STATS, Inc. and ESPN.com. He has also written or co-written six baseball books, including *The Neyer/James Guide to Pitchers* (with Bill James).

**Scouting and Analytics Panel:** Scouts and stats have often been characterized as being at odds with one another, and at one time that may have been true. In today's game we are seeing not only a co-existence, but the integration of scouting and analytics, including the emergence of new sources of scouting data and information. This panel will discuss the impact of technology and data capture on scouting, as well as the way in which data analyses are blended with scouting information to assist teams in their decision-making. **8:45 a.m., Saturday, March 17, Kiva Ballroom.**

- ♦ **Joe Bohringer, Chicago Cubs:** Joe is the Director of Pro Scouting for the Chicago Cubs. Bohringer was previously a major league scout for the Arizona Diamondbacks and the Seattle Mariners. Before embarking on a full-time scouting career, he spent three years as Senior Manager of Player Development for the Los Angeles Dodgers.

# Speakers/Panelists

♦ **A.J. Hinch, San Diego Padres:** A.J. is Vice President/Assistant General Manager of the San Diego Padres. Prior to joining the Padres as Vice President of Professional Scouting in September 2010, Hinch served as manager for the Arizona Diamondbacks and spent three-plus seasons as the Diamondbacks' Director/VP of Player Development.

♦ **Corrine Vitolo, SmartKage:** Corrine is CEO of SmartKage, an innovative technology that provides quantitative analysis for the Amateur and Collegiate Baseball markets. SmartKage captures 50 objective metrics on every athlete, ranging from spin axis for pitchers to cognitive reaction time for hitters. With a data network powered by 300 locations and 3,500 colleges, SmartKage is well positioned to lead the integration of scouting and analytics.

♦ **Moderator: Dan Migala, PCG:** Dan is the founding partner of Property Consulting Group, a Chicago-based team marketing advisory firm and publisher of The Migala Report, a sports business monthly periodical. He has helped design some of baseball's most innovative revenue-generating concepts. He is a co-owner with Mike Veeck of the Class A Fort Myers Miracle and author of three sports marketing texts.

**Digital World Meets Baseball Information Panel:** Website, mobile and television producers and developers are continually pushing the envelope and upgrading the way in which baseball fans are provided with more timely, cutting edge, informative and interactive analytic information. What will be the next innovative ways in which baseball fans consume statistical content? What are baseball content providers going to be developing next? How are content providers going to incorporate this information and implement these new innovations? **1:30 p.m., Saturday, March 17, Kiva Ballroom.**

♦ **Jeff Bennett, ESPN:** Jeff is a Senior Director with ESPN's Stats & Information Group. He has won four Sports Emmy Awards for his role as the lead researcher on ESPN's SportsCenter and Baseball Tonight studio shows from 1996-2003.

♦ **Rob Shaw, Bloomberg Sports:** Rob is the Head of Broadcast/Executive Producer of Bloomberg Sports. He appears on Bloomberg TV in Fantasy Sports Reports, as well as USAToday.com and MLB.com.

♦ **Ryan Zander, Sportvision:** Ryan is General Manager of Sportvision's baseball products. He oversees the direction and strategy of SV's baseball products including Pitch f/x, Hit f/x, Field f/x.

♦ **Moderator: Michele Steele, ESPN:** Michele is a cross-platform anchor/reporter for ESPN. She has reported live from the Super Bowl, the Masters, the Final Four and the Kentucky Derby. Before joining ESPN in 2011, she worked at Bloomberg Television as the network's only sports business reporter. Steele was also a senior reporter for Forbes video on-demand service.

# Research Presentations

## THURSDAY, MARCH 15

### 3:00-3:45 p.m.: RP1—Dave Studenmund, “Postseason Championship WPA: A Full Accounting” (Kiva B room)

Win Probability Added and Leverage Index have entered the vocabulary of most baseball analysts, but no one has taken the concept all the way: Championship Probability Added. Dave will combine WPA and something called Championship Leverage Index to survey the entire history of major league postseason play.

Here you’ll find the biggest plays, games and series of all time, measured by their ultimate impact on the ultimate goal: winning the world championship. What you’ll find will surprise you. Here’s a hint: think Bill Mazeroski’s 1960 Series-winning home run was the biggest hit of all time? It wasn’t even the biggest hit in that game.

**Dave Studenmund** is the primary manager and owner of the Hardball Times. He’s produced eight *Hardball Times Annuals* and manages Bill James’ website. Before diving into baseball statistics, Dave was an executive in the health care industry for many years.

### 3:00-3:45 p.m.: RP2—Vince Gennaro, “Top 10 Value Plays for Building a Roster” (Kiva A room)

Building a roster is all about efficiently acquiring wins—whether it’s buying today’s wins in the form of signing a free agent or trading for a player who can make an immediate contribution, or tomorrow’s wins via the draft or acquisition of a prospect. There are several proven strategies teams employ to stretch their dollars and improve their return on investment. Even high-revenue clubs are turning to value strategies to economize on payroll, particularly under the new CBA, which has onerous penalties for exceeding the luxury tax threshold. Gennaro’s presentation will discuss sources of “value” that fall into four categories: exploiting data biases, inefficient pricing of wins, optimizing timing of transactions and buying risk at the right price. He will show examples of the strategies put into practice and explain why they capitalize on systemic or structural factors that can be exploited by any team.

**Vince Gennaro** is the President of SABR and author of *Diamond Dollars: The Economics of Winning in Baseball*. He is a consultant to MLB teams, and he teaches in the graduate programs at Columbia University and Manhattanville College.

### 3:45-4:30 p.m.: RP3—Brian Cartwright, “Counting Defense: Extending Defensive Efficiency Rating to the Player Level” (Kiva B room)

Advanced defensive stats are broken — in the sense that sabermetrically inclined baseball fans are expressing a loss in faith of their usefulness. Too often the top providers of these metrics produce a single number out of a black box, which seemingly take years to become reliable. As the creator of The Hardball Times Forecasts, Cartwright refers to his approach as “Counting Defense”. If we were starting statistical collection from scratch today, would we choose putouts, assists, errors and double plays as our only measures of defense?

Extending Bill James’ Defensive Efficiency Rating down to the individual level, Cartwright has created a fact-based set of counted defensive statistics, in the same way as we have always done for batting and pitching. Every batted ball on the field of play is assigned a fielder who was most responsible for potentially putting that batter out, expanding our current method of only recording which fielder eventually retrieved the ball. We currently count how many errors a shortstop has made, but how many of those allowed a batter to reach base? How many infield hits went to that shortstop? How many groundball hits to the outfield did that shortstop have the best chance to field? A data set of this type allows us to identify specific defensive skills

# Research Presentations

such as range, arm and sure handedness. After these facts have been compiled, then we can make adjustments to account for context and bias, such park factors, which bases were occupied and the handedness of the batter, resulting in the final overall runs saved rating that has become familiar in recent years.

**Brian Cartwright** is now in his third year as the creator and developer of The Hardball Times Forecasts, aka Oliver. He got his start in amateur baseball, working from 1978 to 1990 as the statistician for his local college summer league in Johnstown, Pa, and the annual All-American Amateur Baseball Association National Tournament which is held there. Since more recently joining the online analytic community, he has written for Seamheads, StatSpeak and FanGraphs, was runner up in the 2009 Baseball Prospectus Idol competition, and has consulted for a major league team. For 27 years he has worked as a photogrammetrist for Aerometric Inc., creating digital map products from 3D aerial photography for civil engineers and municipal planners.

## 3:45-4:30 p.m.: RP4—J.C. Bradbury, “Impact of Pitch Counts and Days Rest on Pitcher Performance” (Kiva A room)

Many individuals believe that limiting pitch counts and increasing days of rest can improve performance and reduce injuries. Though the belief that overuse can hamper pitchers is widespread, there exists little evidence that adjusting pitch counts and rest has much effect on pitcher performance. In this study, Bradbury uses newly available game-level pitch count data from 1988 to 2011 to evaluate the impact of pitch counts and rest days on future performance. He discusses his employment of linear and non-linear multiple regression analysis techniques to estimate the impact of pitch counts — in recent games and cumulatively over a season — and days of rest on pitcher performances while controlling for the effects of other factors.

**J.C. Bradbury** is an economist and associate professor at Kennesaw State University in metropolitan Atlanta. He is the author of *The Baseball Economist* and *Hot Stove Economics: Understanding Baseball's Second Season*. A lifelong Braves fan, he lives in Marietta, Georgia, with his wife and two daughters.

## FRIDAY, MARCH 16

### 11:00-11:45 a.m.: RP5—Patrick Kilgo, et. al, “Bridging the Gap Between Sabermetrics and Formal Statistical Inference: Toward a Unified Approach to Baseball Research” (Pueblo Room)

With so many sabermetric researchers from so many different backgrounds, tensions have been known to arise. The Emory team argues (as have many others) that the tension can be traced to the different approaches taken by two groups that could broadly be classified as classical sabermetricians and quantitative professionals (statisticians, mathematicians, economists, academics, etc.). Increasingly, members of these respective groups are at odds with one another concerning the validity of one another's research and much confusion has resulted. Their presentation will focus on the differences in the two approaches as well as the proper roles of classical sabermetric analysis and formal statistical inference, emphasizing the strengths and weaknesses of each. The goal of the talk will be reconciling the approaches so that they are viewed as complementary, not oppositional, to one another. Examples that bridge the gap between the approaches will be offered and discussed.

**Patrick Kilgo** is on the faculty in the Biostatistics Department at the Emory University School of Public Health in Atlanta, where he teaches graduate methods courses and performs cardiothoracic surgery clinical research. **Jeff Switchenko** is currently a Ph.D. student in Biostatistics at Emory. In 2006 he received a BA in Mathematics with a minor in Chemistry from Bowdoin College. **Brian Schmotzer**, **Hillary Superak**, **Lisa Elon**, **Paul Weiss**, **Jason Lee** and **Lance Waller** are Kilgo's colleagues at Emory.



# Research Presentations

## 11:00-11:45 a.m.: RP6—Greg Rybarczyk, “Integral Baseball: Comprehensive Performance Valuation via Player Tracking” (Kiva Ballroom)

Emerging player and ball tracking technologies such as Sportvision’s f/x products promise to provide industry insiders and fans alike with a wealth of raw data, documenting the on-field action in more detail, and with more precision than ever. However, to be useful, such data must be transformed into information that clarifies and illuminates the game of baseball to its millions of fans, information that can also guide the actions and decisions of players, managers and executives.

In his presentation, “Integral Baseball: Comprehensive Performance Valuation via Player Tracking”, Rybarczyk will review findings from his prior analysis of a sampling of Sportvision’s Field f/x data from the 2011 season, and the methods he used to turn that data into information. He will also propose a comprehensive system for apportioning value to all player activity on the field of play, one that is based not on the traditional counting and manipulation of “box score” stats, but on the physical movements of the players and the ball, and the change in run expectancy throughout each play that is brought about by those actions.

**Greg Rybarczyk** combined his interests in baseball, physics, statistics and automated spreadsheet design to create HitTrackerOnline.com in 2005, collaborating now with ESPN Stats & Information Group to track all MLB home runs. He was an officer in the U.S. Navy for seven years and has worked as a reliability engineer, design engineer and as a Six Sigma “Black Belt” and “Master Black Belt” for two major U.S. and global corporations.

## 3:30-4:15 p.m.: RP7—Andy Andres, Jason Lefkowitz, “Projecting NCAA Division 1 Player Performance” (Pueblo Room)

There are many baseball performance projections systems that have been developed and refined since Bill James started advanced computation in this field in 1985 with his Brock2 System (*The Bill James Baseball Abstract* 1985). For all the projections systems that have been developed for professional baseball, we have found none that attempt to project NCAA Division One (D1) baseball performance.

Player-season data for NCAA D1 players was collected since 2002 and analyzed for the following:

- 1) Season to season variation in the run scoring environment over all of D1 baseball. Recent bat changes from the BESR standard to the BBCOR standard have made the need for such an adjustment obvious.
- 2) Rudimentary park factors were determined for each D1 home field.
- 3) Adjustments for the class (freshman, sophomore, junior and senior seasons) of the D1 player were determined, similar to the adjustments made for age (the aging curve) in professional baseball.

Knowing the yearly D1 run scoring environment, park factors, and player-class adjustments needed, Andres then applied a simple projection model using known data to look at future performance. Projecting sophomore performance only used 1 year of freshman data, projecting junior performance only used 2 previous years of data, and projecting senior performance used three years. Andres will report the accuracy of his projection model for NCAA D1 baseball performance.

**Andy Andres** teaches a course on sabermetrics at Tufts University, the head coach for the MIT Science of Baseball Program and a datacaster for Boston Red Sox games at Fenway Park. He is also a senior lecturer of natural science at Boston University’s College of General Studies and an expert in exercise physiology.

**Jason Lefkowitz** has coached five years of NCAA Division I baseball, at the University of California-Santa Barbara and Brown University. He has helped recruit and develop 13 players who went on to get drafted. He has a bachelor’s degree from Loyola Marymount University and a master’s in Sport Science from the United States Sports Academy. He is the President of SmallBallStats.com.

# Research Presentations

## 3:30-4:15 p.m.: RP8—Graham Goldbeck, “Pitch f/x and Hit f/x Component Aging Curves” (Kiva Ballroom)

Player projections are a critical part of any baseball front office decision, and one of the more important factors that goes into a projection system is the aging curve. Traditionally aging curves have been based on all-encompassing stats such as WAR or broken down into individual component aging curves such as BB rate or HR rate. But now with four years of full MLB PITCHf/x and HITf/x data, we should be able to delve even further into the processes and explore why players age the way they do. In this presentation Goldbeck will use PITCHf/x and HITf/x data to assess the aging curves for various skills of both pitchers and hitters including pitch speed/location, batted ball speed/direction, batter eye, and ability to manipulate the strike zone.

**Graham Goldbeck** is a Baseball Analytics Specialist at Sportvision, the company behind PITCHf/x, HITf/x, COMMANDf/x, and FIELDf/x. In the past, Graham was a writer for the website Beyond the Boxscore and also worked as a baseball operations intern for the Oakland Athletics and Tampa Bay Rays.

## SATURDAY, MARCH 17

## 10:15-11:00 a.m.: RP9—Dave Cameron, “Pitching Injuries and the Free Agent Market” (Pueblo Room)

While pitcher injuries are some of the largest financial pitfalls that teams need to avoid, the price of pitchers with recent medical issues has decreased significantly in recent years. Has this correction gone too far? Are wounded pitchers now an opportunity to find value in the free agent market?

**Dave Cameron** is Managing Editor and a Senior Writer at FanGraphs.com. He was the co-founder of the U.S.S. Mariner blog and previously worked at Baseball Prospectus.

## 10:15-11:00 a.m.: RP10—John Dewan/Ben Jedlovec, “The Fielding Bible III—An Evaluation of the Ted Williams Shift” (Kiva Ballroom)

Baseball Info Solutions owner John Dewan and analyst Ben Jedlovec will present research from their latest book, *The Fielding Bible—Volume III*. Their presentation will cover the implementation and effect of the increasingly popular Ted Williams shift. Their research uncovers the most frequently shifted hitters and their performance with and without the shift. In addition, they will discuss the effect of the count, pitch type, and pitch location on the hitter’s pull rate and recommend adjustments the defense can make to anticipate the direction of the ball in play thus improving overall team defense.

**John Dewan** left his highly successful career as an actuary to become one of the founders, majority owner, and CEO of STATS, Inc. because, as he says, “Sports numbers are much more fun than insurance numbers.” Dewan sold STATS to Rupert Murdoch in 1999. He is now the owner of Baseball Info Solutions, which has developed the most in-depth database of detailed baseball information in the industry. The third volume of his highly acclaimed *Fielding Bible* series is available in bookstores and websites now.

**Ben Jedlovec** is a Research Analyst for Baseball Info Solutions, where he plays a large role in the development of new data and analysis for BIS clients. He serves as a defensive analytics consultant for ESPN, contributes regularly to ESPN during the baseball season, and has published research in *The Hardball Times Baseball Annual*.

# Case Competition

The SABR Analytics Conference is pleased to host a unique Case Competition. Undergraduate and graduate students from colleges and universities across the country, will compete against each other by preparing an analysis and presentation of a baseball operations decision — the type of decision a team's GM and his staff is faced with over the course of a season. The case was developed by Vince Gennaro, author of *Diamond Dollars: The Economics of Winning in Baseball*, and consultant to MLB teams. The Case Competition is the first national competition to be based solely on baseball operations issues.

Four- to five-person student teams will be asked to evaluate a baseball operations case problem. Once the student team has prepared its case, they will have the opportunity to present their analysis and recommendations to a panel of judges, which will include MLB front office executives. They will have a dialog, receive feedback and ultimately be evaluated, by the panel of judges, based on the quality of their insights and analysis.

There will be a two-round competition. The first round consists of three brackets. The winners of each bracket, plus one wild-card winner, will compete in the Championship round. Awards will be presented to each of the bracket winners, the wild-card qualifier and the overall Champion. The first round will take place on Friday, March 16 and the Championship Round on Saturday, March 17.

## Judges

- ♦ **Tom Garfinkel**, President/COO, San Diego Padres
- ♦ **Laurel Prieb**, VP, Western Operations, Major League Baseball
- ♦ **Adam Cromie**, Director of Baseball Operations, Washington Nationals
- ♦ **Andrew Miller**, Assistant to the President, Cleveland Indians
- ♦ **Shiraz Rehman**, Assistant to the General Manager, Chicago Cubs
- ♦ **Dave Studenmund**, Founder, The Hardball Times
- ♦ **Rob Neyer**, Editor, Baseball Nation

## Teams

### Bracket 1 (11:00 a.m.-2:00 p.m. Friday, Kachina A)

- ♦ **Tufts University** (Medford, MA)  
Team captain: Benjamin Limoges
- ♦ **Siena College** (Loudonville, NY)  
Team captain: Hudson Belinsky
- ♦ **University of South Carolina** (Columbia, SC)  
Team captain: Patrick Dornan
- ♦ **Yale University** (New Haven, CT)  
Team captain: Adam Holzman
- ♦ **Arizona State University** (Tempe, AZ)  
Team captain: Justin Magner

### Bracket 2 (1:00-4:00 p.m. Friday, Kachina B)

- ♦ **University of Portland** (Portland, OR)  
Team captain: Chris Siegfried
- ♦ **New York University** (New York, NY)  
Team captain: Ricky Benichak
- ♦ **Manhattanville College** (Purchase, NY)  
Team captain: Chris Hangen
- ♦ **University of Florida** (Gainesville, FL)  
Team captain: Matt Redinger
- ♦ **University of Waterloo** (Waterloo, ON, Canada)  
Team captain: Jay Ryu

### Bracket 3 (2:15-4:35 p.m. Friday, Kachina A)

- ♦ **University of California** (Berkeley, CA)  
Team captain: John Holgate
- ♦ **Northwestern University** (Evanston, IL)  
Team captain: Sunil Dave
- ♦ **University of Chicago** (Chicago, IL)  
Team captain: Ryan Lamb
- ♦ **Elon University** (Elon, NC)  
Team captain: Benjamin Tario

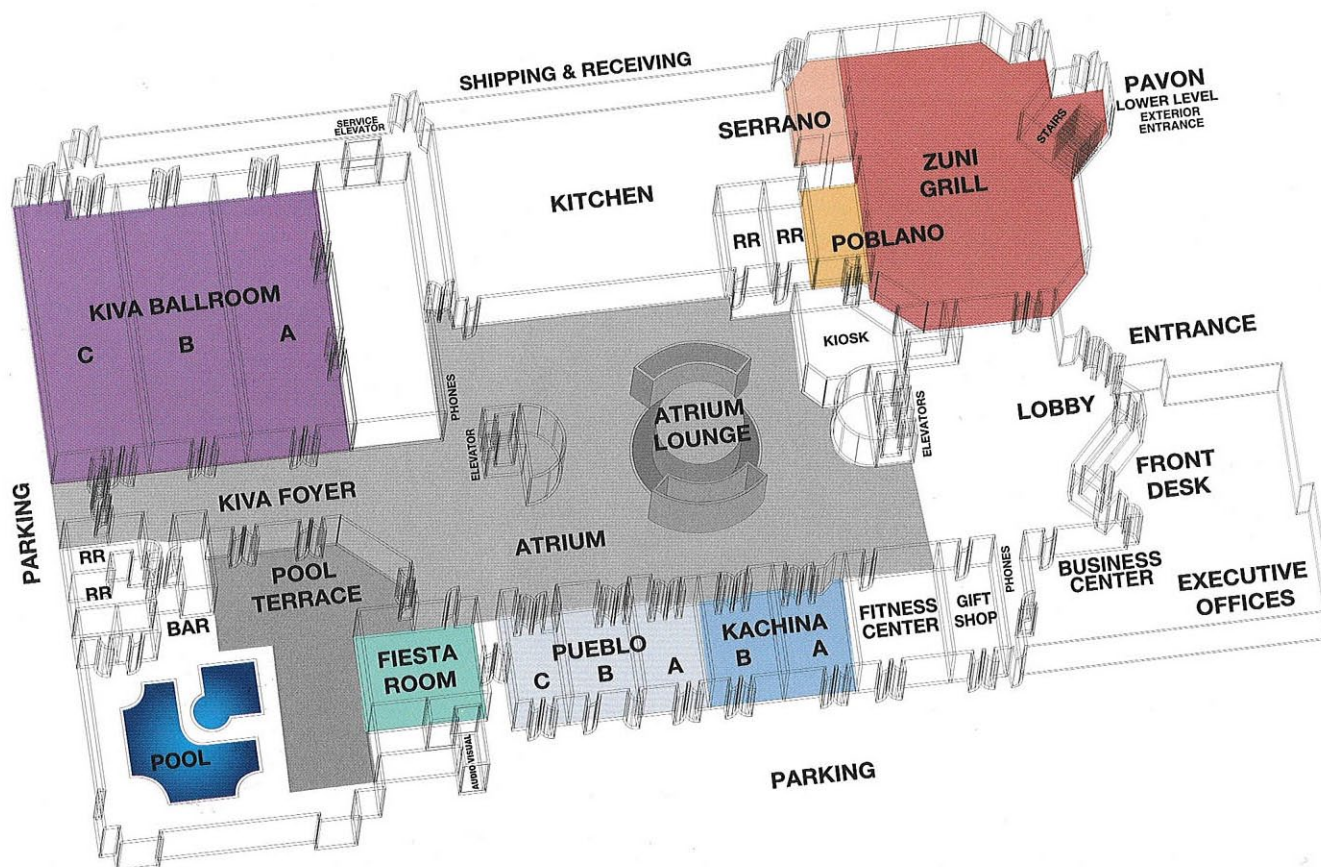
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