

Alan Nathan – Colloquium 4/26/2018

Title: Recent Advances in the Physics of Baseball

After reading Bob Adair's classic book *The Physics of Baseball* over 20 years ago, I thought I knew everything there was to know about the subject. Since then I have learned much, much more, due in large part to some superb tools that are now available. These tools, which I will describe in the talk, allow detailed studies that were not available to Adair at the time he wrote his book. The advances have come in two broad areas: The aerodynamics of a baseball in flight and the physics of the ball-bat collision. Not only have these advances furthered our understanding of the physics, but they have also had a practical application to the game itself. I will give several examples, including some of the following:

What is the role of the batter's grip during the ball-bat collision?

How do atmospheric conditions affect the flight of the baseball?

Why the recent surge in home runs?

What is the "launch angle revolution"?

What's the deal with the humidors?

I will sprinkle the talk with amusing high-speed videos and anecdotes about our national pastime. So, the talk should have something for everybody, whether your interest is primarily physics, baseball, or the intersection between them.