

- [3] “Package ‘nplr’.” Available at <https://cran.r-project.org/web/packages/nplr/nplr.pdf>.
- [4] Kloke, K. and McKean J. W. (2014), *Nonparametric Statistical Methods Using R*, Chapman and Hall/CRC.
- [5] Alpert, R., & Haber, R. N. (1960), “Anxiety in academic achievement situations,” *The Journal of Abnormal and Social Psychology*, 61(2), 207.
- [6] Hudson W (1992), *The WALMYR assessment scales scoring manual*, Walmyr Publishing, Tempe.
- [7] “Zung Self-Rating Anxiety Scale.” Available at [https://en.wikipedia.org/wiki/Zung\\_Self-Rating\\_Anxiety\\_Scale](https://en.wikipedia.org/wiki/Zung_Self-Rating_Anxiety_Scale).
- [8] Mackay, C., Cox, T., Burrows, G., & Lazzerini, T. (1978), “An inventory for the measurement of self-reported stress and arousal,” *British Journal of Social & Clinical Psychology*.
- [9] “MyMathLab.” Available at <https://www.pearsonmylabandmastering.com/northamerica/mymathlab/>.

### Biographical Sketch

Michael Lloyd graduated cum laude and in the honors program in Chemical Engineering with a B.S. in 1984. He accepted a position at Henderson State University in 1993 shortly after earning his Ph.D. in Mathematics (Probability Theory) from Kansas State University. He has presented papers at meetings of the Academy of Economics and Finance, the American Mathematical Society, the Arkansas Conference on Teaching, and the Southwest Arkansas Council of Teachers of Mathematics. He has been an active member of the Mathematical Association of America since 1993, earned 18 hours in computer science, and has been an Advanced Placement statistics consultant since 2002.

### Progressive Team Home Run Leaders of the Los Angeles Dodgers, Boston Red Sox, and Pittsburgh Pirates

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**Abstract.** In this paper, we will look at which players have been the career home run leaders for the Los Angeles Dodgers, Pittsburgh Pirates, and Boston Red Sox since the beginning of the organizations.

#### Introduction

In the past, I published the progressive team home run leaders for the New York Mets, Chicago White Sox, Washington Nationals, Houston Astros, Los Angeles Angels and New York Yankees. Since I simply enjoy this kind of statistical amusement, I have done similar research and decided to publish three more this year.

I find this topic interesting for a variety of reasons. First, I simply enjoy baseball history. Of the four major sports (baseball, football, basketball, and cricket), none has had its history so consistently studied, analyzed and mythologized as baseball. Secondly, I find it amusing to

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come across names of players that are either a vague memory or players I have never heard of before.

### The Dodgers

One unexpected issue in such research is how to define the team. The Dodgers have only been the Los Angeles Dodgers since 1958. Before that, they were the Brooklyn Dodgers. Except for when they weren't. Team names changed often, were not always official, and sometimes two names were used. For this project, these are the names for the Dodgers and the years for which those names were used. You will note some overlap from years when two names were used somewhat interchangeably.

Team	Years
Los Angeles Dodgers	1958-2017
Brooklyn Dodgers	1911-1957
Brooklyn Robins	1914-1931
Brooklyn Superbas	1899-1913
Brooklyn Bridegrooms	1888-1898
Brooklyn Grooms	1891-1895
Brooklyn Grays	1885-1887
Brooklyn Atlantics	1884

Before people talked about the Curse of the Bambino or the Billy Goat Curse, there was Dem Bums. In 1889, they won the American Association championship but lost the predecessor to the modern World Series, six games to three. In their first year in the National League, they again won a championship but that year's championship series ended in a tie, each team winning three with one tie. They again finished first in 1899 and 1900 when no post-season championship series was played. Championships followed in 1916, 1920, 1941, 1947, 1949, 1952 and 1953. But each championship was followed by a loss in the World Series. In 1955, they finally broke through, winning the World Championship.

Several other World Series appearances followed, some ending in victory, some in losses. They have not made it to the Fall Classic since 1988.

The American Association did not start play in 1884 until May 1. No homers were hit until their fourth game which was played on May 5. John Cassidy hit a home run that day off of John Hamill whose won-loss record in this, his only major league season, was 2-17 due to allowing more than a run per inning, though his ERA was only 4.48. No more home runs were hit until May 14 when Bill Greenwood (whose grave I could not find due to the deplorable condition of Mount Moriah Cemetery in Philadelphia) tied Cassidy for the franchise career home run leadership at 1. Five days later, Cassidy regained the lead, hitting his second. Greenwood hit his second on June 7. Jack Remsen followed a little over a month later, hitting his second home run on July 12. Greenwood regained the lead hitting his third on August 8. Remsen followed a bit over a month later, hitting his third on September 11. At this point, Charlie Householder went on a bit of a tear. He hit all three of his home runs for the season from September 13 to the 27th. At the end of their inaugural season, the Atlantics (aka Trolley Dodgers) had Greenwood, Remsen and Householder tied with three home runs.

Cassidy was finally heard from again in 1885. On May 20, he made it a four-way tie for the franchise career home run honors. Almost four months later, they were joined by Germany Smith. Smith was the first of the career record holders who ended up with over ten home runs for his career (whether with the Dodgers or other teams). Smith hit his third Dodger home run on September 19, 1885, to join the leaders but then took sole possession of the honors on October 1, hitting his fourth. He finished with 47 career home runs, four with Cleveland, 25 with Cincinnati and one with St Louis to go along with the total that he extended (through 1890)

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to 17 with Brooklyn. He hit his last Dodger home run on June 27, 1890. By that time, George Pinkney and Oyster Burns were getting close.

On July 31, Smith had the record to himself but within the next day or so Pinkney and Burns join him. The Bridegrooms played a double header that day. Pinkney and Burns each hit their 16<sup>th</sup> home runs in the first game. In the third inning of the second game, Pinkney hit his 17<sup>th</sup> to tie Smith. Two innings later, Burns joined them. The next day, Burns jumped ahead with his 18<sup>th</sup>, and he stayed ahead, finishing the year with 20 career home runs. His 13 in 1890 was the first time anyone had hit double figures for Brooklyn. That stayed as the team record until 1921.

For a while, Pinkney kept getting within one of Burns, but by the end of 1891, Burns had a cushion, leading Pinkney 24-20. Over the next few years, Burns padded his total, ending his career in 1895 with 40 for Brooklyn, along with 24 before his Dodger years and one after.

Burns stayed on top until Tom Daly came along. Daly had a long career, never hitting more than eight home runs in a season. But he hit his 40th Dodger homer on September 13, 1900. About three weeks later, on October 4, 1900, he hit number 41. Daly finished his Dodger career in 1901 with 44.

The Dodgers had no real home run hitters to this point. They had a few guys with a little power, but those players did not stay in Brooklyn long. In 1909, future Hall-of-Famer Zach Wheat joined the club. Wheat didn't have great power but was fairly consistent in the five to ten home run range, and he stayed in Brooklyn for 18 years. On September 15, 1916, Wheat hit number 44 to tie Daly. Four days later he passed Daly with his last homer of the season.

The next two years saw Wheat only hit one home run, though his zero in 1918 was accompanied by a league leading batting average. But in the second half of his career, which coincided with the end of the dead ball era, his power numbers picked up. Though his single-season Dodger record of 16 (set in 1922) only lasted one year, he left after 1926 with 131 home runs.

Wheat stayed at the top of the list until 1942. Legitimate power hitters, Jack Fournier and Babe Herman, played for Brooklyn in the interim, but neither stayed long. Dolph Camilli arrived in 1938 after hitting 98 home runs for the Cubs and Phillies. During his Dodger career, he hit 139. He tied Wheat on September 16, 1942, and passed him six days later. After 1943, he was traded to the Giants, but that brought on an interesting story.

In Ralph Berger's biography of Camilli (published by the Society for American Baseball Research (SABR) BioProject <http://sabr.org/bioproj/person/19ffdc9d>), we read the following.

While playing for the Dodgers, he built up a severe animosity toward New York's third major-league team, the New York Giants and their fans. When he was traded to them in July 1943, he refused to report and stayed home for the entire remainder of the season and returned to work on his cattle ranch in California. He was passionate in his position: "I hated the Giants. This was real serious; this was no put-on stuff. Their fans hated us, and our fans hated them. I said nuts to them, and I quit."

He played minor league ball for a year and then spent 1945 with the Red Sox before retiring.

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The decade of the 1950s was a time when the Dodgers had Gil Hodges, Duke Snider, Roy Campanella and others, making up one of the dominating offensive teams of the decade. Hodges, who should be in the Hall of Fame, tied Camilli on September 16, 1952. It was his 32nd home run of the season, off of Murry Dickson, and also his last of the season.

Number 140 for Hodges came on May 6, 1953. Hodges kept increasing the record for quite a while, hitting his team record 261st home run on August 3, 1956. But Duke Snider, batting left-handed compared to the right-handed Hodges, took advantage of the bandbox dimensions of Ebbets Field. On August 5, 1956, Snider hit three home runs in the Dodgers doubleheader against the Cardinals. The first homer in the first game, off Dickson, tied Hodges. His second homer in that game, off Jim Konstanty, moved him ahead. He hit another in the second game.

The teammates stayed close for a while, but Snider gradually extended his lead. When he left the Dodgers after 1962, he had 389 Dodger home runs. Hodges who left a year earlier (ironically both left to join the Mets), finished his Dodger career with 361.

Eric Karros, who played for Los Angeles from 1992-2002, finished his Dodger career with 270. Campanella is the only other player to finish within 150 of Snider.

### Boston Red Sox

The Boston Red Sox began in 1901 as the Boston Americans. The name Red Sox seems to have begun in 1908. The Red Sox were a very successful team until around 1920 which is the first season after they sold Babe Ruth to the Yankees. I believe that ownership made a variety of bad decisions, so I will not fall into the trap of blaming "The Curse of the Bambino." More like "The Curse of Bad Choices." That and the fact that sometimes things do not work out solely because of chance occurrences.

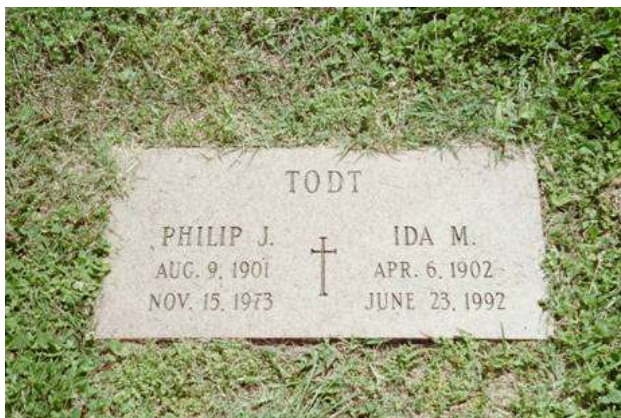
The tale of the Red Sox career leaders will be shorter than that of the Dodgers. They had one of the leading sluggers of the era in Buck Freeman. Freeman hit the first home run in franchise history on April 30, 1901. Charlie Hemphill tied him for the franchise lead a week later, on May 7. The next day, Freeman hit number two. June 1<sup>st</sup>, Freeman hit two, moving him up to four and no one else ever came close. Freeman finished the season with 12, twice as many as anyone else on the team. By 1905, Freeman had 46 home runs which were more than anyone in major league baseball hit from 1901 to 1905. With one home run each of the next two seasons, Freeman retired in 1908 with a franchise record of 48 home runs

In 1914, a young pitcher named George Herman Ruth joined the Red Sox. For a pitcher, he was a great hitter, but he didn't get to bat very often. By 1918, when the team finally realized his hitting potential, Babe Ruth had moved up into a tie for seventh on the Red Sox all-time home run list with 20. In 1919, Ruth played in 130 games, pitching in only 17, and slugged a major league record 29 home runs, catapulting past Freeman. Number 28 of the season, which broke the major league single-season record, and career number 48 came on September 24, 1919. The franchise record was broken on September 27, 1919. That was Ruth's last home run with the Red Sox. In 1920, Ruth hit a new major league record of 54 home runs. After one season he was the Yankees career home run leader, a distinction he still holds. (He also held the Red Sox record until 1930.)

The next holder of the Red Sox franchise career home run record was one of my favorite players of all-time, Phil Todt. Todt tied Ruth when he hit his 49th Red Sox home run on July 27, 1930. On August 5, 1930, he set the new franchise record by hitting his 50th. That is not

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why he is one of my favorite players of all-time, nor is it because he led the American League in several fielding categories throughout his career. It is because he was born and is buried in the same place. And I don't mean the same state. Lots of players have done that. I don't mean the same city. Lots have done that. He is buried in Sts Peter & Paul Cemetery in St Louis, the same place where he was born. In 1901, when Todt was born, his father, Anton, was the superintendent of the cemetery, so the family lived in a house on the grounds. And that is where Phil was born, in the cemetery.



Todt did not hold the franchise home run record for long. Before joining the Red Sox for the 1936 season, Jimmie Foxx, aka "The Beast," had hit 302 home runs for the Philadelphia Athletics. Since he was still in his prime, it did not take Foxx long to become the new Red Sox home-run king. After 41 in 1936, Foxx tied the record with his 11th home run of 1937 on May 23 against Bobo Newsom. Three days later he connected again, this time against Hall of Famer Red Ruffing to become the new Red Sox home run record holder.

Foxx continued to add to his total until 1942 when he left the Red Sox. By that time, he had 222 homers with the Red Sox. But the next, and current, Red Sox home run king was already on the scene.

Ted Williams finished 1945 with 127 home runs with Boston. On October 2, 1948, he hit his last home run of the season and 222nd of his career to tie Foxx. Then, on April 28, 1949, Williams became the all-time Red Sox franchise home run champion with number 223. He finished his career with 521 home runs, all with Boston.

The Red Sox have had several great home run hitters since Williams. Carl Yastrzemski (452, all with Boston), Jim Rice (382, all with Boston), Dwight Evans (385, all but 6 with Boston), and Manny Ramirez (555, with just under half with Boston). David Ortiz, though, is second on the Red Sox list, having hit 483 of his 541 home runs with Boston. With Ortiz now retired, it looks like Williams will have the record for a long time.

### Pittsburgh Pirates

The Pittsburgh Pirates have been around for a long time. From 1882 to 1890, they were known as the Pittsburgh Alleghenys. In 1891 they took the name Pirates. Not all baseball historians believe the Alleghenys and Pirates are the same franchise. Some say the 1887 Alleghenys were the beginning of the Pirates franchise. But we will operate under the assumption that the franchise began in 1882. They have won five World Series and have had some pretty strong power hitters, though none before the middle of the 20th century. And, unfortunately, premature ends to careers due to injury or death kept some of those from accumulating the numbers of which they were capable.

George Strief hit a home run off Will White on May 3, 1882. It was the first home run in Alleghenys/Pirates history. He only had sole possession of the franchise record for one day

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when Mike Mansell also hit a home run off White on May 4. The team didn't get another home run for more than three weeks when Ed Swartwood hit a home run off ambidextrous pitcher Tony Mullane on May 30, 1882. An even longer drought ended on July 4, 1882, when Jim Keenan made it a four-way tie for the franchise home run record. But at that point, the home runs started coming with greater frequency. Jack Leary joined the crowd with one career home run on July 6. Bill Taylor chimed in on July 10, homering in the second inning. Five innings later, Chappy Lane became the seventh player tied with one career home run. The next day, July 11, 1882, Mike Mansell finally broke the logjam at one by hitting his second home run of the season. The next day, George Strief started a new pileup at two. On July 20, Billy Taylor hit his second home run. The July flurry was over.

The next home run was Ed Swartwood's second on August 5. A week later, Swartwood hit his third. Another drought ensued, but it was broken enthusiastically.

On September 12, 1882, the Alleghenys first two players reached base in the first inning and scored on a Billy Taylor home run, as Taylor's third homer put him into a tie with Swartwood. Later that inning, Chappy Lane hit another three-run homer, putting him as the third member of a three-way tie at three.

I would be remiss if I didn't stop here to mention my gratitude to several members of SABR for their help in compiling the preceding paragraph. I knew Taylor and Lane homered in the first inning, but I didn't know the batting order, so I didn't know who tied with Swartwood first. An email to a SABR email list produced nearly a dozen responses in less than 24 hours with the information I needed.

The tie at three ended fairly quickly. Swartwood hit his fourth on September 14, 1882. That was Pittsburgh's last home run of the season. In 1883, Swartwood homered early and stayed ahead of his teammates throughout the season, finishing with 7. Those were his last home runs for Pittsburgh and kept him as the franchise leader until 1887.

On May 30, 1887, Fred Carroll hit his seventh Pittsburgh homer to pull into a tie with Swartwood. Carroll didn't hit another for a while, but he became the franchise leader on August 9, 1887. He finished the year with 11, the new franchise high. Carroll added two more in 1888, to up his total to 13.

On May 3, 1889, Carroll hit two homers off Pretzels Getzien to hike his tally to 15. That happened just in time because Pop Smith went on a tear during the rest of May, hitting five homers to bring his Pittsburgh total to 13. Oddly, neither hit another home run that year and neither was in Pittsburgh in 1890.

Carroll returned to Pittsburgh in 1891. He extended his record to 19, but two players, Doggie Miller and Jake Beckley, were hot on his trail. Miller finished 1891 with 17, Beckley with 13. But Beckley was the Pirates first consistent home run threat.

Miller worked his way up to tie Carroll with his 19th on June 25, 1892. But that was his last Pittsburgh homer. Beckley tied him on July 9, 1892, passed him two days later and continued to 23 by the end of the season. Over the next four years, Beckley, who would be eventually inducted into the Hall of Fame, upped his tally to 43. He stayed in the franchise lead until possibly the greatest Pirate of all-time displaced him.

Honus Wagner debuted with Pittsburgh in 1900, his fourth major league season. Wagner caught up to Beckley on July 13, 1908, by connecting off of Hall of Famer Joe McGinnity. A

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week later he hit number 44 to become the franchise leader. By the time he retired after the 1916 season, he had 101 career home runs, including a Pittsburgh record of 82.

Another future Hall of Famer, Paul Waner, succeeded Wagner. Waner closed out 1931 one homer behind Wagner. His first 1935 home run came on May 11 to tie Wagner before passing him two days later with number 83. Waner ended the Pittsburgh portion of his career in 1940 with 109 home runs. While it took Waner 15 years to accumulate his total, his record was broken part way into his successor's third season.

Ralph Kiner, another future Hall of Famer, was the most dominant power hitter in Pittsburgh history to this point. In his rookie season of 1946, he hit 23 to tie the single-season team record. His remaining six full seasons with Pittsburgh produced the six highest season home run totals in team history. In late 1948, on August 26, he hit career home number 109 to tie Waner. September 2nd he passed Waner. Playing part way into 1953, Kiner finished his Pittsburgh career with 301 home runs, on his way to 369 homers in a career prematurely shortened by back trouble. That gives him more than 46% of all the home runs ever hit by players born in New Mexico.

Kiner's record held until 1973. Willie Stargell, another Hall of Famer, hit a grand slam on July 3, 1973, to tie Kiner. On July 11, Stargell hit number 302 to take the franchise lead which he holds to this day. When he retired in 1982, he had a total of 475 home runs, all with Pittsburgh.

### Conclusion

These studies are the third installment of a series I hope to continue. Baseball is unique among sports in the way that statistics play such a central role in the game and the fans' enjoyment thereof. The importance of baseball statistics is evidenced by the existence of the Society for American Baseball Research, a scholarly society dedicated to studying baseball.

### References and Acknowledgements

This work is made much easier by Lee Sinins' Complete Baseball Encyclopedia, a wonderful software package, and [www.baseball-reference.com](http://www.baseball-reference.com). It would have been impossible without the wonderful websites [www.retrosheet.org](http://www.retrosheet.org) and [www.sabr.org](http://www.sabr.org) which give daily results and information for most major league games since the beginning of major league baseball.

## Bernoulli Numbers and Their Applications

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**Abstract.** Bernoulli numbers, named after a Swiss mathematician, Jakob Bernoulli (1654-1705), crop up in various branches of mathematics such as number theory, topology, combinatorics, and analysis. In this article, we will give a recursive definition of Bernoulli numbers and look at some elementary applications of the numbers.

### 1 Introduction

There are several special numbers in Mathematics. The reader might have come across amicable numbers, Fibonacci numbers, harmonic numbers, Euler numbers, Lucas numbers, or Genocchi numbers. In this article, we are going to briefly look at special numbers called Bernoulli numbers and discuss some of its applications.