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Posted on Tue, Feb. 12, 2008

## Clemens fails test at Penn

**Four Wharton professors claim a report assembled by his agents does not prove innocence or guilt.**

By Frank Fitzpatrick  
Inquirer Staff Writer

When Roger Clemens makes his next scheduled start, tomorrow before a U.S. House committee investigating drug use in baseball, he's likely to reference the 45-page report his agents compiled to support his contention that he never used performance-enhancing substances.

Using contemporary power pitchers such as Curt Schilling, Nolan Ryan and Randy Johnson as examples, it suggested Clemens' late-career brilliance was not atypical, an assertion that would mitigate against allegations in the Mitchell Report that since 1998 he had used steroids or human-growth hormone.

But four professors at the University of Pennsylvania's Wharton School who reviewed the statistics-laden brief by Hendricks Sports Management found that it "does not make a convincing case for his innocence."

"The path of Clemens' career is different from the other pitchers we looked at," said Eric Bradlow, a professor of marketing, statistics and education. "We're saying to those who wrote the report that we have no data that supports his innocence, nor do you."

Bradlow and his colleagues - Shane Jensen, Justin Wolfers and Adi Wyner - noted that the evidence "strongly hints that some unusual factors may have been at play in producing his excellent late-career statistics."

It was impossible, they added, to say whether that was due to performance-enhancing drugs.

The four released a summary of their findings in Sunday's New York Times. Their full study will be published in a statistical journal, said Bradlow.

They compared the 45-year-old Clemens' numbers to those of the 31 other pitchers who, since 1968, had thrown 3,000-plus innings and made at least 10 starts for 15 consecutive seasons.

What they found was that the arc of Clemens' career was nearly the opposite of most of the others.

"Most of the others started off strong, reached their peaks in their late 20s or early 30s, and then began to tail off," said Bradlow. "If you think of that curve on a graph as a U, then Clemens' curve is almost an upside-down U."

In addition to Ryan, Johnson and Schilling, the other pitchers whose statistics they dissected included the Phillies' Jamie Moyer and Steve Carlton, as well as Tom Seaver, Bert Blyleven and Mike Mussina.

The latter three had been cited in the report as examples of pitchers who, like Clemens, prospered in their late-30s and 40s.

"Such comparisons tell an incomplete story," the summary said. "By comparing Clemens only to those who were successful in the second act of their careers, rather than to all pitchers who had a similarly successful first act, the report artificially minimizes the chances that Clemens' numbers will seem unusual. Statisticians call this problem selection bias."

The Penn professors discovered that Clemens was unusual because his numbers declined in his late 20s, then improved in his mid-30s and early 40s.

Clemens' agents also focused almost entirely on ERA, which the professors, because of such variables as team defense, believe to be a flawed measuring tool.

They instead relied on strikeout, walk, hit and home-run rates as well as his walks-plus-hits allowed per inning.



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Justin Wolfers, left, and Eric Bradlow, along with colleagues Shane Jensen and Adi Wyner, analyzed the report assembled by Roger Clemens' agents.

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"[They] suggest Clemens performed similarly to his contemporaries. But these comparisons do not provide evidence of his innocence; they simply fail to provide evidence of his guilt," they wrote.

Bradlow said he was moved to begin his research when the headline on a news story on the Clemens report popped up on his computer's home page. It implied that the statistics absolved the pitcher.

A native New Yorker who grew up a Yankees fan and now has Phillies season tickets, Bradlow said that as a baseball fan and a statistician he felt compelled to see if that were so.

"It implied the data suggested innocence," he said. "We say it does not. There's nothing in there that suggests he's guilty, either. But it is clear that the trajectory of his career was different than most of the others we looked at."

The Clemens report pointed out that his late-career success was due to his developing a split-finger fastball to offset a decrease in his fastball's velocity.

"While this may be true," the Penn professors wrote, "it is also just speculation: There is not a single number in the report quantifying the evolution of Clemens' pitch selection."

Contact staff writer Frank Fitzpatrick at 215-854-5068 or [fitzpatrick@phillynews.com](mailto:fitzpatrick@phillynews.com).

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