

# Daily Gazette article

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## Retired professor combines chemistry, sports

By Mike MacAdam

### “Performance-Enhancing Drug Use in Sports: Catching the Cheaters (Sometimes).”

**WHAT:** Dr. Tom Werner, recently retired professor of chemistry at Union College, to speak about drugs in sports.

**WHERE:** McChesney Room of the Schenectady County Public Library.

**WHEN:** 7 p.m., July 7

**MORE INFO:** 388-4500 or go to [www.scpl.org](http://www.scpl.org)

Dr. Tom Werner is used to a game in which the playing field keeps changing.

A recently retired professor of chemistry at Union College, Werner developed a course called “Chemistry and Athletic Performance” with the help of Dr. Don Catlin, the world-renowned director of the UCLA Olympic Analytical Lab.

A sports fan himself, Werner is troubled by not only the difficulty drug testers have keeping up with new ways for athletes to cheat, but also by the way fans appear to have become habituated to the notion that cheating is rampant and inevitable.

After he retired, Werner was selected by the American Chemical Society as a guest speaker on a tour aimed at providing insight to the general public about drugs in sports. He’ll visit the McChesney Room at the Schenectady County Public Library on Tuesday, July 7, to talk about “Performance-

Enhancing Drug Use in Sports: Catching the Cheaters (Sometimes).”

The key word in the title is “Sometimes.”

Drug testers have sophisticated ways of determining whether someone is cheating, but the overall landscape in the world of sports — especially at the professional level, where player unions are resistant to intrusive test methods like blood and urine sampling — makes it difficult to stay ahead of the bad guys.

Big money and competitive zeal make for a powerful one-two punch, so there’s plenty of incentive to find new drugs for which there are no tests, or ways of avoiding positive tests and threshold levels for drugs that are already on the banned list.

“I think it is a losing battle,” Werner said. “Well, let me put it another way. In some cases, it’s a battle in which it’s hard to make the case that we’re winning, but at the same time, you don’t know what the score actually is. There’s a lot of speculation about the percentage of athletes who are using performance-enhancing drugs. Our position is, we don’t know.”

Werner will discuss the prevalence of such substances as steroids, human growth hormone, amphetamines and erythropoietin (EPO), an anemia treatment that increases the concentration of red blood cells, and by extension, the blood’s capacity to carry oxygen to the muscles.

To illustrate what drug testers are up against, testing for EPO, for example, is made more difficult by the fact that there’s “anywhere from 82 to 100 versions of it,” he said.

Checking whether an athlete has been taking testosterone is complicated by the fact that it’s a naturally occurring substance in the human body, so testers look at whether the amount of it is in the proper proportion to another related substance, epitestosterone, the so-called T-E ratio.

“There’s always new versions of drugs that come out and new ways for athletes to take the drugs,” Werner said. “An example is HGH. There’s no good way to analyze for it, and they often take it as a cocktail with steroids at levels that are difficult to detect.”

Werner was inspired to start his “Chemistry and Athletic Performance” course by the work of Catlin, specifically in the

federal case against Victor Conte and his Bay Area Laboratory Co-operative (BALCO), which has become synonymous with rampant drug cheating at the highest level of sports.

On the verge of retirement from teaching, Werner sought a way to bring chemistry out of the four walls of academia and into the real world. As a sports fan, the impact of performance-enhancing drugs in sports and the ways chemical analysis can spot the cheaters was a natural topic.

“One of the reasons I got into this is because I wanted to do one last big thing before I retired, and I was tired of traditional research,” he said. “This BALCO thing was festering, and I started reading about it. I thought it would give me a chance to teach some pretty interesting and complicated chemistry. Often, chemistry is taught as if it’s hermetically sealed away from society, but this gave me a chance to teach it with a social context.”

Werner has observed that cheating has gotten so deeply ingrained in sports that fans are losing their capacity for outrage whenever a new name becomes linked to performance-enhancing drugs.

He also believes it’s unfair for athletes like Michael Phelps and Albert Pujols to automatically assume the mantle of suspicion when their performance is exceptional.

“The unfortunate thing is, most might not be doing it, and maybe even the vast majority aren’t, but they all get tarred with that label now,” Werner said. “There’s a lot of cynicism among sports fans. When [Olympic swimmer] Dara Torres does something, the first response now is, is she really on something?”