

PARTNERSHIP FOR
clean competition

Research Insider

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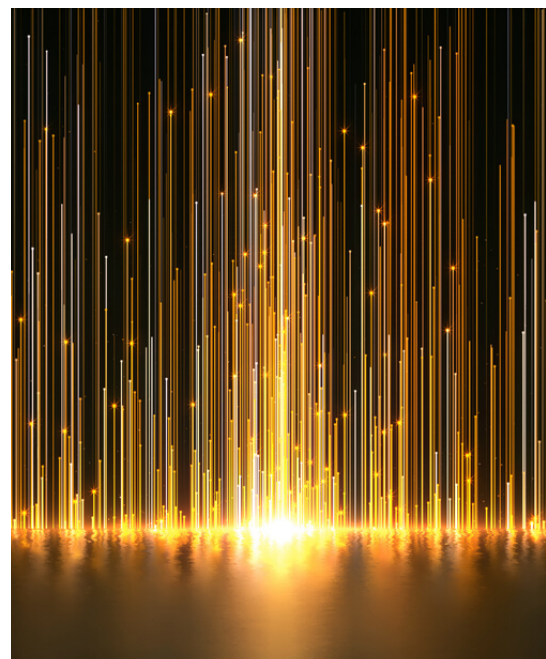
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UPCOMING GRANT DEADLINE



NEW PCC AWARD PRESENTED



RESEARCH DISCOVERIES

UPCOMING GRANT DEADLINE

Pre-Applications Due: **July 1st**
Full Applications Due: **August 1st**

Grants

Investigators anywhere in the world are eligible for PCC Grants, as long as they are contributing to the detection or deterrence of performance-enhancing drugs


There are no maximum or minimum amounts for grant applications, though the average funding amount is roughly \$200,000. To date, more than 100 projects have been funded in more than 19 countries worldwide. Approximately 30% of applicants are awarded PCC funding.

Fellowships

The Fellowship Program represents the PCC's investment in the future of the anti-doping science community. The program supports qualified post-doctoral scientists at leading universities and WADA-accredited laboratories who demonstrate strong interest and potential for long-term contribution to the fields of anti-doping science. By cultivating ethical leadership and ongoing commitment to research, the Fellowship Program helps ensure the continuation of standards established by today's anti-doping experts.

APPLICATION
CENTER

Not quite ready for this deadline?



START THE COUNTDOWN
UNTIL THE NEXT ONE

Pre-Applications Due: **November 1st**
Full Applications Due: **December 1st**

APPLICATION
CENTER

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Got questions?

Ask Ryan!

The Partnership for Clean Competition's Communications Director is departing this June, so all inquiries for the organization should be directed to Executive Director Ryan Murphy. You can reach him via email at rmurphy@cleancompetition.org.

CONGRATULATIONS!



The Partnership for Clean Competition announced its first **Award for Published Advances in Anti-Doping**. The award goes to the WADA-accredited anti-doping lab in China for their leadership on the paper **Discovery of c.577del in EPO: Investigations into endogenous EPO double-band detected in blood with SAR-PAGE**.

The PCC partnered with the Manfred Donike Workshop to announce the award at the conclusion of the workshop's online platform. The prize will go to Dr. Zhou Xinmiao and Prof. Zhang Lisi for their leadership on the awarded paper. The recognition comes with a €1,000 reward.

The study, published in Drug Testing and Analysis in November 2021, highlights the presence of a genetic variant of endogenous erythropoietin (EPO) called c.577del. The variant can cause anti-doping tests to return an adverse analytical finding against an athlete showing they have used recombinant EPO, when in fact, they have not. The researchers identified the variant, which can be found in Chinese athletes specifically, and developed new technical guidance that protects people who have the rare variant.

The World Anti-Doping Agency has adjusted its Technical Document on EPO to reflect the results of the research.

The PCC used a jury of experts in anti-doping science to identify the paper as having a direct impact on clean sport practices.

Our jury kept three specific criteria in mind:

- The study presents a method or approach for detecting substances of high importance that have been difficult-to-impossible to pinpoint. The research improves the efficiency of testing and the deterrent impact of those tests.
- The study illustrates specificity improvements that reduce the risk of misinterpretation or inadequate management of results, increasing the reliability and credibility of the global testing system.
- The study's outcome leads to changes in prevailing rules or guidance for result interpretation or a harmonization of procedures throughout the field.

The PCC would like to thank the entire clean sport community for another excellent year of research. We look forward to seeing all of the breakthroughs this year that we will consider for the Award for Published Advances in Anti-Doping next year.

SMRTL SITE VISIT

We at the Partnership for Clean Competition are thrilled with the opportunity to meet with some of our partners in person again.

In April, leaders from the PCC traveled to Salt Lake City, Utah to tour the Sports Medicine Research & Testing Laboratory (SMRTL).

The primary topic of conversation: progress in Dried Blood Spot analysis.

Dried Blood Spots (DBS) and Dried Plasma Spots (DPS) have been a major focus of the PCC for years. The technology has reached a critical mass and can now be used to reduce testing costs for sports organizations, while improving the athlete experience.



Ryan Murphy
PCC Executive Director



SMRTL Laboratory in Salt Lake City



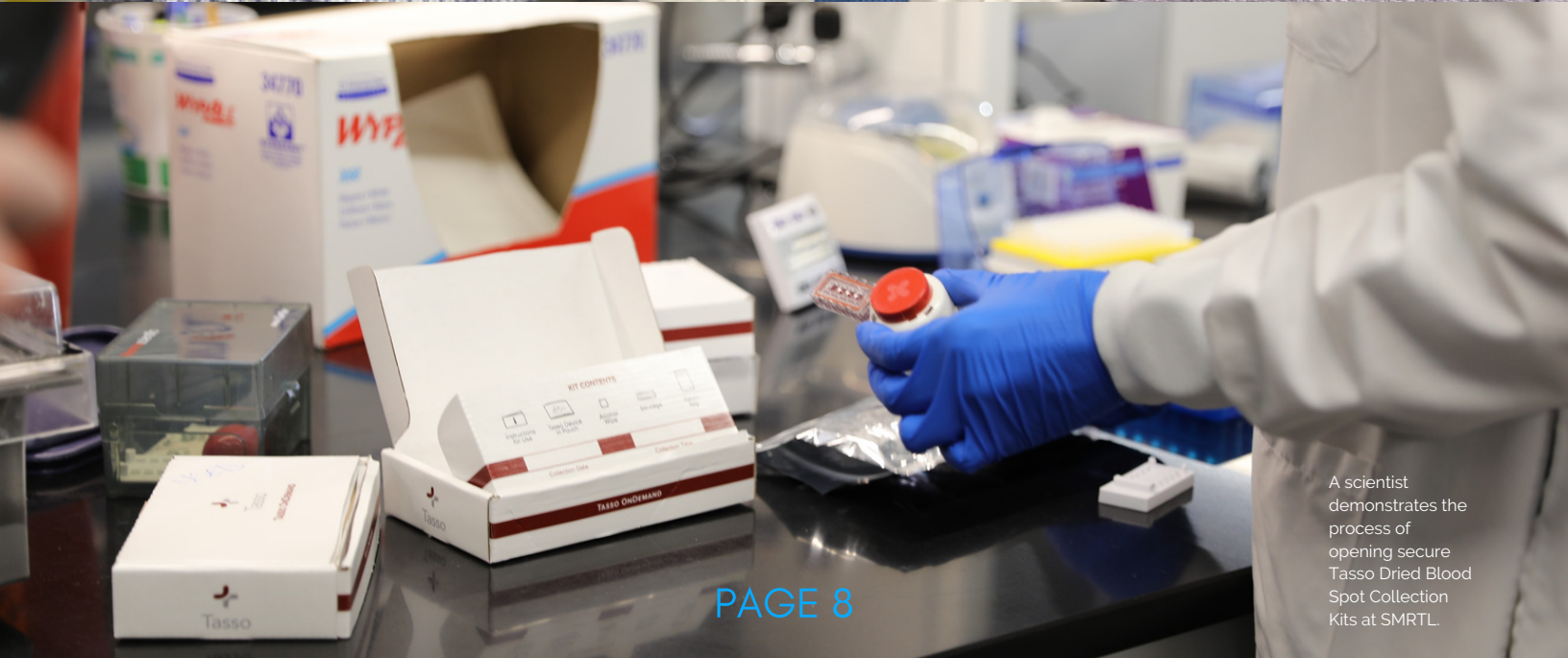
Jon Coyles
MLB - VP Drug, Health
& Safety Programs

PCC Board of
Governors Chair

Dr. Daniel Eichner
SMRTL - President

Dr. Matthew Fedoruk
USADA - Chief Science
Officer

PCC Scientific Advisory
Board Co-Chair



A scientist
demonstrates the
process of
opening secure
Tasso Dried Blood
Spot Collection
Kits at SMRTL.

GAME CHANGER

A Short Film from the BBC StoryWorks



BBC StoryWorks, supported by Thermo Fisher and aided by the Partnership for Clean Competition, put together a short documentary on some of the scientific technologies being leveraged to fight doping in sport.

The short film highlights the predicament of clean athletes through the story of Paralympic Powerlifter Ali Jawad, who notes how important podiums are for clean athletes—both for glory and for the opportunities for funding and sponsorship they provide.

With the challenge to athletes front and center, the video explores the role of mass spectrometry in catching drug cheats.

It notes that constantly improving technology makes doping a riskier proposition than ever, with retroactive testing now allowing for samples to be re-tested up to ten years after initial collection. Dr. Mario Thevis, a PCC-funded researcher and head of the Institute of Biochemistry, German Sport University Cologne, explains that such retroactive analysis has proven to be a game-changer for clean sport.

Thevis oversees the testing of thousands of samples a year at the Cologne lab.

Jawad points out that while new technologies mean that drug cheats could have their impropriety exposed up to ten years after competition, those technologies also allow Olympians and Paralympians have the chance to receive the medals they rightfully earned.

RESEARCH DISCOVERIES

WITH FUNDING PROVIDED BY
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Learning new fundamentals of Beta-2 agonists

A research team led by Mississippi State University's Dr. Amanda Patrick recently completed a PCC-funded project on beta-2 agonists, revealing new fundamentals of how the prohibited substances behave in a mass spectrometry environment. These findings could lay the groundwork for better detection, including the ability to differentiate between therapeutic use and athlete abuse.

Beta-2 agonists are one of the substance classes prohibited at all times by WADA. However, they are also commonly used to treat asthma and other respiratory ailments. Because therapeutic use of these drugs, especially salbutamol, is widespread, there are a number of exceptions built into the rules. For several of these agonists, there are accepted detection limits rather than the substances being banned outright.

Salbutamol is administered therapeutically as a racemic mixture. That means it contains a 50-50 balance of an active version of the substance, called a "eutomer", and an inactive, mirror image of the same substance. Currently, common tests only look at total content, so if an athlete took a dose that was solely made up of the eutomer without any of the inactive match, a "double dose" could be taken without surpassing the threshold for detection.

The aim of this pilot project was to evaluate several potential paths toward differentiation of the racemic mixture from the pure eutomer using mass spectrometry (an analytical chemistry instrument that "weighs" molecules and their fragments) and related instruments. To this end, the researchers gained many new fundamental insights into how beta-2 agonists behave in the environment of the mass spectrometer.

[The first publication from this work](#) describes the gas-phase dissociation pathways of four beta-2 agonists, including salbutamol, in the mass spectrometer. Understanding this behavior could be key to future advances in detecting abuse of beta-2 agonists.

Dr. Patrick adds of the work, "Analytical advances are often built on improved understanding of the underlying chemistry involved and our team is very excited to have the chance to help build such a fundamental understanding of how beta-2 agonists behave in the mass spectrometry environment toward anti-doping goals."

The team has also begun development of a method for differentiating racemic versus eutomer-spiked urine through the generation and dissociation of specific metal complexes with the compounds being studied. The further evaluation, development, and refinement of this method will be the subject of future work.

THE ANTI-DOPING PODCAST

The field of anti-doping moves fast. Every year there are new scientific discoveries, new regulations and new court cases. The Anti-Doping Podcast brings experts from all corners of clean sport together in one place.

“Anyone involved with the sports world needs to be kept up on this valuable information from Dr. Marie.”

“Great quality info and audio. Dr. McNeely is an excellent host.”



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