ABOUT THE PCC

Doping is a global problem. We fund solutions.

THE PARTNERSHIP FOR CLEAN COMPETITION IS A NONPROFIT, 501(C)(3) ORGANIZATION WORKING TO PROTECT THE INTEGRITY OF SPORT AND PUBLIC HEALTH BY ENGAGING AND SUPPORTING THE WORLD'S TOP SCIENTISTS AND INNOVATORS IN HIGH-QUALITY ANTI-DOPING RESEARCH AND DEVELOPMENT.

PROTECTING ATHLETES THROUGH A COMMITMENT TO FUNDING HIGH QUALITY ANTI-DOPING SCIENCE.
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Dear PCC Supporters,

The Partnership for Clean Competition marked a year of achievement in 2019. With record numbers of applications and published findings, the PCC demonstrated how thoughtful priorities, agile thinking, and strategic execution can advance research by leaps and bounds.

At the heart of the organization’s success in 2019, you’ll find the PCC’s conference in London. The PCC’s largest conference ever brought together experts from every corner of the anti-doping world. Stakeholders ranging from scientists to athletes, program administrators to doping control officers, and many others all gathered to share perspectives and exchange wisdom.

By hosting the most athlete-focused anti-doping conference in PCC history, the PCC demonstrated a commitment to putting athletes first in the world of clean sport and set the bar for future anti-doping conferences.

In 2019, the PCC also advanced this athlete-first vision through a translational research project focused on new collection technology. For this project, the PCC partnered with Major League Baseball, the Sports Medicine Research and Testing Laboratory, and Drug Free Sport International to complete a trial of dried blood spot testing technology—a project that quickly gained favor among participating athletes for its ease of use and less invasive procedure. These dried blood spot tests also save money for the organizations conducting testing, eliminating the need for costly shipping and a phlebotomist to collect the sample. We are excited to see organizations in the Olympic Movement and professional sports leagues already moving forward in this space.

In addition, the PCC issued its first Request for Proposal, looking for new ways to precisely measure percent glycated hemoglobin (HbA1C) fraction at the single red blood cell (RBC) level from whole-blood samples, which specifically advances the development of a new detection method for blood transfusions. A number of new working groups also began work in 2019, including groups focusing on collagen turnover, performance hematology, and the availability of reference materials.

Of course, the core of the PCC’s mission remains funding exceptional anti-doping research, and here too, 2019 marks significant success. The PCC funded just shy of $4.2 million in research projects, representing a 10% increase over 2018 and the second largest funding year in PCC history. We look forward to seeing the impact of this funding on protecting clean athletes and clean sport in the months and years ahead.

Respectfully,

Michael Pearlmutter

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Adolpho Birch - National Football League (Left)
Travis Tygart - United States Anti-Doping Agency (Right)
Dan Halem  
*Major League Baseball*

Major League Baseball’s Deputy Commissioner, Baseball Administration and Chief Legal Officer, Mr. Halem oversees all collective bargaining issues with the MLB Players Association, including the annual updates to Joint Drug Prevention and Treatment Program. Mr. Halem also works closely with club management officials and helps directs the administration of MLB’s revenue sharing system, the debt-service rule, the competitive balance tax, the salary arbitration system, and the amateur draft support program. Prior to joining MLB, Mr. Halem was a partner at the law firm of Proskauer Rose, where he represented and counseled the NBA, the WNBA, the NHL, and the New York Jets of the NFL. Mr. Halem graduated from Cornell University’s School of Industrial and Labor Relations in 1988 and from Harvard Law School, magna cum laude, in 1991.

Adolpho Birch III  
*National Football League*

Senior Vice President of Labor Policy & League Affairs for the National Football League, Birch oversees the development, administration and enforcement of the League’s critical policies respecting the integrity of the game, including those on substances of abuse, performance-enhancing drugs, gambling and criminal misconduct. Mr. Birch also has advanced the League’s legislative and political interests, working with federal, state and local officials on key league issues such as youth concussion laws, the League’s tax status and the FCC’s blackout rule. Prior to joining the NFL, Mr. Birch was in private practice in Houston, Texas. Mr. Birch attended Vanderbilt University Law School as a Patricia Roberts Harris Scholar.

Chris McCleary  
*United States Olympic & Paralympic Committee*

Chris McCleary has served as general counsel for the United States Olympic & Paralympic Committee since January 2015. In this role, he leads a team of legal professionals responsible for all USOPC legal, contract, intellectual property, and dispute resolution matters. Additionally, he serves as the organization’s ethics officer and works with the USOPC Ethics Committee to advance USOPC’s ethics and conflicts of interest policies and practices, and to resolve ethics questions as they arise. He also leads USOPC’s governance work and serves as corporate secretary to the USOPC board of directors. McCleary oversees the USOPC’s partnerships with the World Anti-doping Agency, U.S. Anti-doping Agency and Partnership for Clean Competition. He also serves as a member of the Association of National Olympic Committee’s Legal Commission.

Travis Tygart  
*United States Anti-Doping Agency*

Serving as USADA’s Chief Executive Officer since September 2007, Travis T. Tygart leads the organization’s efforts to preserve the integrity of competition, inspire true sport, and protect the rights of clean athletes. Under Tygart’s leadership, some of USADA’s most significant efforts to protect athletes’ rights have come in the form of international advocacy of clean sport, most recently in relation to the Russian doping scandal, and in the form of major investigations. Working alongside federal authorities, USADA investigated the international steroid bust, Operation Raw Deal, and the international doping conspiracy involving the BALCO laboratory in San Francisco. Tygart also led the investigation into the U.S. Postal Service pro-cycling team doping conspiracy and spearheaded the publication of the Reasoned Decision in the Lance Armstrong case.
Michael Pearlmutter was named Executive Director for the Partnership for Clean Competition Research Collaborative in January 2014. In this role, Pearlmutter is responsible for developing, directing, and driving organizational strategy and overseeing daily operations, including managing the organization's $4M budget, fundraising, business development, grant administration, scientific outreach, and communication with the PCC Board of Governors and Scientific Advisory Board. Pearlmutter earned his Masters of Business Administration in Entrepreneurship from Babson College and served on the Alumni Association Board of Directors. He also has a BS degree in Quantitative Economics from United States Naval Academy.

Jenna joined the PCC as Stakeholder Engagement Manager in March of 2016 to provide dedicated outreach and communications services to the PCC’s numerous sponsors, researchers, and collaborators. She was promoted to Director of Communications in 2019. In this role, Celmer supported the promotion, growth and advancement of PCC programming and partnerships through implementing strategic engagement initiatives, creative marketing efforts, and mission-driven support mechanisms for the anti-doping community.

Katie has more than 15 years in the accounting industry with an emphasis working in the non-profit industry. Katie spent 12 years of her career working in the public accounting sector at BKD, LLP consulting with non-profit and healthcare clients on audit, tax, internal control, and strategic planning projects. In 2016, Katie joined the Finance team at the United States Olympic Committee overseeing financial operations and partnering with executive teams within the organization to manage monthly financial reports, forecasts, budgets, and development of strategic plans while also overseeing external audit, 990, and consulting projects. Katie is an active CPA and member of the American Institute of Certified Public Accountants (AICPA) and the Colorado Society of CPAs.

Kevin Manara serves as Vice President, Labor Relations & Policy for the NFL. His responsibilities include the administration of the League’s collective bargaining agreements with its players and game officials, as well as enforcement of the League’s policies on performance-enhancing substances, personal conduct, and substances of abuse. Kevin represents NFL clubs in grievances filed by players under the CBA, prosecutes appeals of discipline imposed under League policies, and advises clubs on a variety of contractual, disciplinary and other labor-related matters. Kevin was a member of the NFL Management Council’s bargaining team during negotiations that resulted in the 2011 and 2020 CBAs. Prior to joining the NFL, Kevin was an associate in the Labor & Employment department at Proskauer Rose. Kevin graduated from Johns Hopkins University, where he played varsity football, and earned his law degree with honors from New York Law School.
James Dalton, Ph.D. is Executive Vice President and Provost at the University of Alabama. He received his Bachelor of Science in Pharmacy from the University of Cincinnati (1986) and Doctor of Philosophy in pharmaceutics and pharmaceutical chemistry from Ohio State University (1990). Dr. Dalton rose through the faculty ranks in the Department of Pharmaceutical Sciences in the College of Pharmacy at the University of Tennessee (1992-2000) before returning to Ohio State where he served as Professor and Chair in the Division of Pharmaceutics (2000-2007). He began an entrepreneurial leave of absence from Ohio State in 2005 and finally left OSU in 2007 to devote his full time effort as Chief Scientific Officer at GTx, Inc. in Memphis, TN (2007-2014) where he oversaw the preclinical and clinical development of selective androgen receptor modulators and then served as Dean at the University of Michigan College of Pharmacy from 2014-2020.

Matthew Fedoruk, Ph.D. currently works as the Chief Science Officer at the U.S. Anti-Doping Agency (USADA). With more than 10 years of experience in anti-doping and a Ph.D. in Pathology and Laboratory Medicine, Dr. Fedoruk also serves as a standing member of the IPC Anti-Doping Committee, the WADA TDSSA Expert Group Chair and Athlete Biological Passport (ABP) Ad-Hoc Working Group. Before joining USADA, Dr. Fedoruk worked at the Canadian Centre for Ethics in Sport (CCES) and served with the Vancouver 2010 Organizing Committee for the 2010 Olympic and Paralympic Winter Games in Canada. He currently lives in sunny Colorado Springs, Colorado, which is also known as ‘Olympic Town USA’ for being home to the U.S. Olympic Committee, the high-altitude Olympic Training Center, numerous national sport federations and USADA.

Gerhard Baumann, M.D. is Past Chief of Endocrinology and Metabolism at the Veterans Administration Lakeside Medical Center and the Associate Director of the Northwestern University General Clinical Research Center in Chicago. Dr. Baumann is a Professor of Medicine Emeritus at Northwestern University. Dr. Baumann discovered the growth hormone binding protein, the circulating ectodomain of the growth hormone receptor.

Larry Bowers, Ph.D. As USADA’S Chief Science Officer from 2000 to 2016, Dr. Bowers provided leadership and scientific support for USADA’s research sample collection planning, results management, arbitration, education programs, and the prestigious USADA Annual Symposium. Past Associate Editor (Drug Testing and Toxicology) for the journal, Clinical Chemistry, Dr. Bowers was the deputy director of the Athletic Drug Testing Laboratory for the 1996 Olympic Games, and has served on several scientific organizations Board of Directors.
SCIENTIFIC ADVISORY BOARD

Steve Elliot  
Ph.D

Recently retired from his Scientific Executive Director Position at Amgen, where he had worked since 1983, Dr. Elliott continues to work in conjunction with the antidoping movement. During his early years at the company, he performed structure-function studies on erythropoietin and the erythropoietin receptor and is the inventor of Aranesp, a re-engineered analog of rHuEpo with a longer serum half-life. He also played a key role when three cross country skiers who doped with Aranesp were caught and stripped of their gold medals and suspended from competition for two years following the 2002 Olympic Winter Games.

Gary Green  
M.D.

Gary Green, MD, was appointed Medical Director for Major League Baseball in 2010. He also serves as research director for MLB. He is a fellow in the American College of Physicians and American College of Sports Medicine and a Clinical Professor in the UCLA School of Medicine in the Division of Sports Medicine, Dr. Green is the head team physician for Pepperdine University and serves on the California Interscholastic Federation Medical Advisory Committee. He is also on review boards for USADA for adverse analytical findings and therapeutic use exemptions. He is in private practice in Pacific Palisades, California at the Medical Doctors of St. John’s.

Alvin Matsumoto  
M.D.

Dr. Matsumoto is a Professor Emeritus in the Division of Gerontology & Geriatric Medicine, Department of Medicine at the University of Washington School of Medicine, and Clinical Investigator in the Geriatric Research, Education and Clinical Center (GRECC) at the Veteran Affairs Puget Sound Health Care System (VAPSHCS) in Seattle. He serves as a member and Vice President, respectively, of the Board of Directors of the United States Anti-Doping Agency and Seattle Institute for Biomedical and Clinical Research; and co-chair of the Partnership for the Accurate Testing of Hormones. Previously, he was Director of the Clinical Research Unit, Associate Director of the GRECC, Chief of Gerontology and an Attending Physician in Internal Medicine, Geriatric Medicine and Endocrinology & Metabolism at the VAPSHCS.

Annette Salmeen  
D.Phil

Dr. Salmeen, D.Phil., was a 1996 Olympian and gold medalist. She served as an athlete’s representative for the USA Swimming national governing body from 1996 to 2005. In 2005, she was elected as an athlete member of the U.S. Anti-Doping Agency Board of Directors and served until 2012. She was a member of the USADA board research committee and was also involved with efforts to support athlete education and the USADA True Sport initiative. She earned her doctoral degree in Biochemistry as a Rhodes Scholar at Oxford in 2001 and studied growth factor signaling pathways as a post-doctoral fellow in the Chemical and Systems Biology department at Stanford. She is currently a lecturer in the Human Biology Program at Stanford.
Emeritus Professor of Pathology at the University of Virginia, Dr. Silverman also served as Director of the Molecular Diagnostics, Clinical Genomics, and Immunology Laboratories at the University of Virginia, as well as Director of the Division of Molecular Pathology, and Director of the Immunochemistry/Molecular Genetics Laboratory at the University of North Carolina Hospitals. Dr. Silverman is a diplomate of the American Board of Clinical Chemistry and a Fellow of the American College of Medical Genetics.

Chief Scientific Officer of Environmental Physiology and Hydration Associates, Adjunct Professor of Biological Sciences at Georgia Institute of Technology, past Department of Army Science and Technology Senior Scientist appointee, and Chief of Thermal and Mountain Medicine Division at the US Army Research Institute of Environmental Medicine. Dr. Sawka is an expert in environmental physiology (heat, cold, high-altitude), blood volume control, fluid/ electrolyte balance, temperature regulation, and exercise physiology.

The Ernest W. Hahn Professor in the Department of Chemical Physiology and Molecular & Cellular Neurobiology at The Scripps Research Institute, Dr. Yates is the lead inventor of the SEQUEST software for correlating tandem mass spectrometry data to sequences in the database and developer of the shotgun proteomics technique for analysis of protein mixtures. Dr. Yates was ranked by Citation Impact, Science Watch as one of the Top 100 Chemists for the decade, 2000-2010. Dr. Yates is the Editor in Chief at the Journal of Proteome Research.

Dan Halem has moved on from his role as Chair of the Board of Governors, replaced by Jon Coyles of MLB.
Katie Willemarck has moved on from her role as Treasurer, replaced by Eric Kerzner of the NFL.
Adolpho Birch has moved on from the Board of Governors, replaced by Kevin Manara of the NFL.
Since Kevin Manara has joined the Board of Governors, Lindsey Ingraham of MLB is the new Secretary.
Lori Bestervelt, Ph.D, has joined the Scientific Advisory Board.

The Partnership for Clean Competition leadership has undergone some changes since the end of 2019, the year this Annual Report represents. The PCC is grateful for those who have contributed their leadership, and as always, looks forward to integrating new voices into the organization’s decision-making processes.
Beckie Scott - Olympian, former chair of the WADA Athlete Committee
2019

$4,172,668 in Total Awards

10% funding increase from 2018

2nd largest funding year in PCC history

28 Total Projects

Research funded in 13 different countries

68 research publications & presentations
WORKING GROUPS

- **DR. JEN-TSAN CHI**, DUKE UNIVERSITY. VALIDATION OF THE IN VITRO STORAGE SIGNATURE IN AN INDEPENDENT COHORT OF HUMAN DOPING TRIAL
- **DR. STEPHEN DAVIES**, NATIONAL MEASUREMENT INSTITUTE. PROVISION OF FOUR CALIBRATION STANDARDS FOR SPORTS DOPING CONTROL
- **DR. DANIEL EICHNER**, SPORTS MEDICINE RESEARCH & TESTING LABORATORY. DETECTION OF EPO AND EVALUATION OF CD71 EXPRESSION FROM A DRIED BLOOD SPOT FOLLOWING REPO ADMINISTRATION
- **DR. JOHN HIGGINS**, MASSACHUSETTS GENERAL HOSPITAL. MODELING NON-STEADY STATE RBC POPULATION DYNAMICS IN THE SMRTL AUTOTRANSFUSION STUDY
- **DR. NIKOLAI NORDSBORG**, UNIVERSITY OF COPENHAGEN. SINGLE-CELL MEASUREMENT OF ERYTHROCYTE AGE-RELATED MARKERS

FELLOWSHIPS

- **DR. FEDERICO PONZETTO**, UNIVERSITY OF TURIN. IMPLEMENTATION OF A BLOOD STEROIDAL MODULE IN THE FRAMEWORK OF THE ATHLETE BIOLOGICAL PASSPORT

TRF AWARDS

- **JL CLARK.** PRODUCTION OF PROTOTYPE DPS CARDS

MICRO-GRANTS

- **DR. CLEO VAN DIEMEN**, UNIVERSITY MEDICAL CENTER GRONINGEN. IMPLEMENTATION OF AN OPTIMIZED NGS-BASED GENE-DOPING DETECTION TEST IN A WADA-ACCREDITED LABORATORY
- **DR. AJIT SHAH**, MIDDLESEX UNIVERSITY LONDON. DEVELOPING A STRATEGY FOR THE ENHANCED ANALYSIS OF GLYCOPROTEIN HORMONES
- **DR. JASON WHITFIELD**, UNIVERSITY OF QUEENSLAND. rapid isomeric differentiation using ozone-induced dissociation methods
- **DR. DANIEL EICHNER**, SPORTS MEDICINE RESEARCH & TESTING LABORATORY. THE EFFECTS OF SUBCUTANEOUS TESTOSTERONE INJECTIONS ON URINARY AND HEMATOLOGICAL DOPING MARKERS

APPROVED GRANTS

$4.17 MILLION USD AWARDED TO SCIENTISTS

- **DR. ERIC ANSLYN**, UNIVERSITY OF TEXAS. BEAD BASED PROTEIN CAPTURE IN EMULSIONS FOR MEASURING HBA1C LEVELS ON INDIVIDUAL RED BLOOD CELLS
- **DR. MARTIN BIGLINGMAIER**, KLINIKUM DER UNIVERSITAT MUNCHEN. SOLUBLE ALPHA KLOTHO - A NEW BIOMARKER TO DETECT GROWTH HORMONE DOPING
- **DR. FRANCESCO BOTRE**, FEDERAZIONE MEDICO SPORTIVA ITALIANA. EFFECTS OF NON-BANNED AND NON-MONITORED SUBSTANCES ON THE PARAMETERS OF THE STEROID PROFILE
- **DR. CHRISTOPHER CHOUINARD**, FLORIDA INSTITUTE OF TECHNOLOGY. RAPID ISOMERIC DIFFERENTIATION USING OZONE-INDUCED DISSOCIATION METHODS
- **DR. DANIEL EICHNER**, SPORTS MEDICINE RESEARCH & TESTING LABORATORY. THE EFFECTS OF SUBCUTANEOUS TESTOSTERONE INJECTIONS ON URINARY AND HEMATOLOGICAL DOPING MARKERS
- **DR. DAVID GOODLETT**, UNIVERSITY OF VICTORIA. NANOPOTS AND ISOTOPE DILUTION MASS SPECTROMETRY TO DETERMINE ERYTHROCYTE AGE
- **DR. ANDREW JONES**, ACTIVATED RESEARCH COMPANY. IMPROVED ADSORBENTS AND METHODS FOR THE ANALYSIS OF EXHALED BREATH
- **DR. ALEX MARCHAND**, AGENCE FRANÇAISE DE LUTTE CONTRE LE DOPAGE. DEVELOPMENT OF A SINGLE MULTIPLEX IMMUNOASSAY FOR MEASURING GROWTH HORMONE AND ITS BIOMARKERS
- **DR. AMANDA PATRICK**, MISSISSIPPI STATE UNIVERSITY. INFRARED ION SPECTROSCOPY AND ION MOBILITY SPECTROMETRY FOR BETA2-AGONIST STEREOISOMER ANALYSIS
- **DR. MICHAEL POLET**, UNIVERSITY OF GHENT. NEW LONG-TERM DETECTION WINDOWS BY INCLUDING NON-HYDROLYZED SULFATED STEROIDS IN GC-MS SCREENING
- **DR. ROBERT ROACH**, UNIVERSITY OF COLORADO DENVER. DOPING OMICS ANALYSES TO IDENTIFY DOPING BIOMARKERS AT LOW OR HIGH ALTITUDES
- **DR. SOLEDAD RUBIO**, UNIVERSITY OF CORDOBA. HYPHENATING SUPRAS AND LC-MS-MS FOR HIGH-THROUGHPUT UNIVERSAL TESTING OF BANNED SUBSTANCES IN URINE
- **DR. FRED SCHAUFELLE**, XCELLASSAY. BIOASSAY CELL LINES TO VALIDATE AND IMPLEMENT ANDROGEN MONITORING OF AMATEUR AND YOUTH ATHLETES

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CHI J, ET AL. QUANTITATIVE PHASE IMAGING OF ERYTHROCYTES UNDER MICROFLUIDIC CONSTRUCTION IN A HIGH REFRACTIVE INDEX MEDIUM REVEALS WATER CONTENT CHANGES. MICROSYST NANOENG. 2019;5:65. PUBLISHED 2019 DEC 2. DOI:10.1038/S41378-019-0113-Y


EICHNER D, ET AL. SINGLE-CELL MODELING OF ROUTINE CLINICAL BLOOD TESTS REVEALS TRANSIENT DYNAMICS OF HUMAN RESPONSE TO BLOOD LOSS. ELIFE. 2019;8:E48590. PUBLISHED 2019 DEC 17. DOI:10.7554/ELIFE.48590


HARYNUK J, ET AL. THERMODYNAMICS-BASED RETENTION MAPS TO GUIDE COLUMN CHOICES FOR COMPREHENSIVE MULTI-DIMENSIONAL GAS CHROMATOGRAPHY. ANAL CHIM. 2019;1086. HTTPS://DOI.ORG/10.1016/J.JACCA.2019.08.011

HARYNUK J, ET AL. THERMODYNAMICS-BASED MODELLING OF GAS CHROMATOGRAPHY SEPARATIONS ACROSS COLUMN GEOMETRIES AND SYSTEMS, INCLUDING THE PREDICTION OF PEAK WIDTHS. J SEP SCI. 2019;42([1]):2015-2022. DOI:10.1002/JSSC.201801294

HOPKER, J.G., ET AL. PERFORMANCE PROFILING AS AN INTELLIGENCE-LED APPROACH TO ANTIDOPING IN SPORTS. DRUG TEST ANAL. HTTPS://DOI.ORG/10.1002/DTA.2485


POLET M, ET AL. TIME TRIAL PERFORMANCE IS SENSITIVE TO LOW-VOLUME AUTOLOGOUS BLOOD TRANSFUSION. MED SCI SPORTS EXERC. 2019;51(4):692-700. DOI:10.1249/MSS.0000000000001837

POZO O, ET AL. GAS CHROMATOGRAPHY-MASS SPECTROMETRY ANALYSIS OF NON-HYDROLYZED SULFATED STEROIDS BY DEGRADATION PRODUCT FORMATION. DRUG TEST ANAL. 2019;11([1-12]):1656-1665. DOI:10.1002/DTA.2606

SU J, ET AL. ULTRASENSITIVE DETECTION OF HUMAN CHORIONIC GONADOTROPIN USING FREQUENCY LOCKED MICROTOROID OPTICAL RESONATORS. ANAL CHIM. 2019;9(18):11872-11878. DOI:10.1021/ACS.ANALCHEM.9B02650

TOBIAS H, ET AL. LOW TEMPERATURE CATALYTIC COMBUSTION REACTORS FOR HIGH PRECISION CARBON ISOTOPE MEASUREMENTS IN GAS CHROMATOGRAPHY COMBUSTION ISOTOP RATIO MASS SPECTROMETRY. ANAL CHIM. 2019;9(14):2901-2907. DOI:10.1021/ACS.ANALCHEM.8B05043


VAN EENOO, ET AL. TOXICOLOGICAL DETERMINATION AND IN VITRO METABOLISM OF THE DESIGNER DRUG METHYLENEDIOXYPYROVALERONE (MDPV) BY GAS CHROMATOGRAPHY/MASS SPECTROMETRY AND LIQUID CHROMATOGRAPHY/QUADRUPOLE TIME-OF-FLIGHT MASS SPECTROMETRY. RAPID COMMUN MASS SPECTROM. 2010;24(18):2706-2714. DOI:10.1002/RCM.4692

VOECKNER N, ET AL. TOXICOLOGICAL DETERMINATION AND IN VITRO METABOLISM OF THE DESIGNER DRUG METHYLENEDIOXYPYROVALERONE (MDPV) BY GAS CHROMATOGRAPHY/MASS SPECTROMETRY AND LIQUID CHROMATOGRAPHY/QUADRUPOLE TIME-OF-FLIGHT MASS SPECTROMETRY. RAPID COMMUN MASS SPECTROM. 2010;24(18):2706-2714. DOI:10.1002/RCM.4692

PRESENTATIONS

ARMISHAW P, ET AL. "PRODUCTION OF A CERTIFIED REFERENCE MATERIAL TO SUPPORT GC-C-IRMS CONFIRMATION OF ADVERSE ANALYTICAL FINDINGS FOR SYNTHETIC FORMS OF ENDOGENOUS ANABOLIC ANDROGENIC STEROIDS." CCQM WORKSHOP ON ADVANCES IN METROLOGY IN CHEMISTRY AND BIOLOGY. PARIS, FRANCE. APRIL 2019.


AYOTTE C. "IMPLICATIONS OF ISOTOPIC CORRECTION TO ACCOUNT FOR DERIVATIZATION OF SMALL NON-VOLATILE MOLECULES." ADVANCES IN STABLE ISOTOPES TECHNIQUES AND APPLICATIONS (ASITA). WINNIPEG, MANITOBA, CANADA. JUNE 2019.

BUISSON C. "UNTARGETED METABOLOMICS FOR EVIDENCING STANOZOLOL MISUSE." THE 57TH MANFRED DONIKE WORKSHOP. COLOGNE, GERMANY. FEBRUARY 2019.


DAVIES S. UK SOCIETY FOR EXTRACELLULAR VESICLES FORUM AT THE CRICK INSTITUTE. LONDON, ENGLAND. 2019.


HIGGINS J. "MODELING RBC AGE DISTRIBUTIONS IN HEALTH AND DISEASE." UNIVERSITY OF COPENHAGEN SYMPOSIUM ON ANTI-DOPING SCIENCE. NOVEMBER, 2019. COPENHAGEN, DENMARK.

HOPKER J. "PERFORMANCE PROFILING AS AN INTELLIGENCE-LED APPROACH TO ANTIDOPING IN SPORTS." EUROPEAN COLLEGE OF SPORTS SCIENCE ANNUAL CONGRESS. PRAGUE, CZECH REPUBLIC. JULY 2019.

HOPKER J. "PERFORMANCE PROFILING AS AN INTELLIGENCE-LED APPROACH TO ANTIDOPING IN SPORTS." USADA SCIENCE SYMPOSIUM. TOKYO, JAPAN. OCTOBER 2019.

LEUENBERGER N. "ERYTHROFERONE AS SENSITIVE BIOMARKER TO DETECT STIMULATION OF ERYTHROPOIESIS." 37TH MANFRED DONIKE WORKSHOP. COLOGNE, GERMANY. FEBRUARY 2019.


NORDSBORG N. "DETECTING BLOOD VOLUME MANIPULATION." UNIVERSITY OF COPENHAGEN ANTI-DOPING SYMPOSIUM. COPENHAGEN, DENMARK. NOVEMBER 2019.
PRESENTATIONS


Thevis M. "Issues to address in the doping control laboratory." Anakon Conference of the German Chemical Society. Munster, Germany. March 2019.


The following documents are excerpts from an independent audit of the Partnership for Clean Competition's finances.
Independent Auditor’s Report

Board of Governors
Partner for Clean Competition
    Research Collaborative
Colorado Springs, Colorado

We have audited the accompanying financial statements of Partnership for Clean Competition Research Collaborative (the Organization), which comprise the statement of financial position as of December 31, 2019, and the related statement of activities, functional expenses and cash flows for the year then ended, and the related notes to the financial statements.

Management’s Responsibility for the Financial Statements

Management is responsible for the preparation and fair presentation of these financial statements in accordance with accounting principles generally accepted in the United States of America; this includes the design, implementation and maintenance of internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error.

Auditor’s Responsibility

Our responsibility is to express an opinion on these financial statements based on our audit. We conducted our audit in accordance with auditing standards generally accepted in the United States of America. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditor’s judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity’s preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity’s internal control. Accordingly, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.
Opinion

In our opinion, the financial statements referred to above present fairly, in all material respects, the financial position of Partnership for Clean Competition Research Collaborative as of December 31, 2019, and the changes in its net assets and its cash flows for the year then ended in accordance with accounting principles generally accepted in the United States of America.

Emphasis of Matters

As discussed in Note 2 to the financial statements, in 2019, the Organization adopted Accounting Standards Update No. 2016-18 (ASU 2016-18), Statement of Cash Flows (Topic 230): Restricted Cash and ASU 2018-08, Clarifying the Scope and Accounting Guidance for Contributions Received and Contributions Made (Topic 958). Our opinion is not modified with respect to these matters.

The 2018 financial statements, before they were restated for the matter discussed in Note 3, were audited by other auditors, and their report thereon, dated October 15, 2019, expressed an unmodified opinion. Our opinion is not modified with respect to this matter.

BKD, LLP

Colorado Springs, Colorado
June 26, 2020
**Partnership for Clean Competition Research Collaborative**  
**Statement of Financial Position**  
**December 31, 2019**

### Assets

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<td>Cash and cash equivalents</td>
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<td>$13,624</td>
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<tr>
<td><strong>Total assets</strong></td>
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### Liabilities and Net Assets

#### Liabilities

<table>
<thead>
<tr>
<th>Liability</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accounts payable and accrued liabilities</td>
<td>$69,921</td>
</tr>
<tr>
<td><strong>Total liabilities</strong></td>
<td><strong>69,921</strong></td>
</tr>
</tbody>
</table>

#### Net Assets

<table>
<thead>
<tr>
<th>Net Asset</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Without donor restrictions</td>
<td>$6,091,237</td>
</tr>
<tr>
<td>With donor restrictions</td>
<td>$320,198</td>
</tr>
<tr>
<td><strong>Total net assets</strong></td>
<td><strong>6,411,435</strong></td>
</tr>
</tbody>
</table>

| Total liabilities and net assets                | **$6,481,356** |
## Partnership for Clean Competition Research Collaborative
### Statement of Activities
#### Year Ended December 31, 2019

<table>
<thead>
<tr>
<th>Revenues, Gains and Other Support</th>
<th>Without Donor Restrictions</th>
<th>With Donor Restrictions</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contributions</td>
<td>$ 2,206,545</td>
<td>$ 100,000</td>
<td>$ 2,306,545</td>
</tr>
<tr>
<td>Conference registration</td>
<td>122,298</td>
<td>-</td>
<td>122,298</td>
</tr>
<tr>
<td>Other income</td>
<td>171,084</td>
<td>-</td>
<td>171,084</td>
</tr>
<tr>
<td>Net assets released from restrictions</td>
<td>621,682</td>
<td>(621,682)</td>
<td>-</td>
</tr>
<tr>
<td><strong>Total revenues, gains and other support</strong></td>
<td><strong>3,121,609</strong></td>
<td><strong>(521,682)</strong></td>
<td><strong>2,599,927</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Expenses and Losses</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Anti-doping research</td>
<td>3,565,066</td>
<td>-</td>
<td>3,565,066</td>
</tr>
<tr>
<td>Management and general</td>
<td>172,181</td>
<td>-</td>
<td>172,181</td>
</tr>
<tr>
<td>Fundraising</td>
<td>30,103</td>
<td>-</td>
<td>30,103</td>
</tr>
<tr>
<td><strong>Total expenses and losses</strong></td>
<td><strong>3,767,350</strong></td>
<td>-</td>
<td><strong>3,767,350</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Change in Net Assets</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>(645,741)</td>
<td>(521,682)</td>
<td></td>
<td>(1,167,423)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Net Assets, Beginning of Year, as Previously Reported</th>
<th>5,242,273</th>
<th>2,336,585</th>
<th>7,578,858</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adjustment applicable to the year ended December 31, 2018</td>
<td>1,494,705</td>
<td>(1,494,705)</td>
<td>-</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Net Assets, Beginning of Year, as Restated</th>
<th>6,736,978</th>
<th>841,880</th>
<th>7,578,858</th>
</tr>
</thead>
<tbody>
<tr>
<td>Net Assets, End of Year</td>
<td>$ 6,091,237</td>
<td>$ 320,198</td>
<td>$ 6,411,435</td>
</tr>
</tbody>
</table>

*See Notes to Financial Statements*
<table>
<thead>
<tr>
<th>Program Services</th>
<th>Support Services</th>
<th>Total Support Services</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Anti-Doping</td>
<td>Management and General</td>
<td></td>
</tr>
<tr>
<td>Research</td>
<td>$2,854,460</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Fellowships and consultants</td>
<td>234,045</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Conferences</td>
<td>206,357</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Salaries</td>
<td>152,877</td>
<td>43,679</td>
<td>21,840</td>
</tr>
<tr>
<td>Benefits</td>
<td>-</td>
<td>48,440</td>
<td>5,382</td>
</tr>
<tr>
<td>Travel</td>
<td>20,029</td>
<td>4,378</td>
<td>-</td>
</tr>
<tr>
<td>Supplies and office expenses</td>
<td>-</td>
<td>6,981</td>
<td>-</td>
</tr>
<tr>
<td>Amortization</td>
<td>43,267</td>
<td>-</td>
<td>1,338</td>
</tr>
<tr>
<td>Website expenses</td>
<td>10,837</td>
<td>-</td>
<td>335</td>
</tr>
<tr>
<td>Fundraising</td>
<td>-</td>
<td>-</td>
<td>1,208</td>
</tr>
<tr>
<td>Insurance</td>
<td>-</td>
<td>17,379</td>
<td>-</td>
</tr>
<tr>
<td>Advertising</td>
<td>33,594</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Professional services and dues</td>
<td>9,600</td>
<td>51,324</td>
<td>-</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$3,565,066</strong></td>
<td><strong>$172,181</strong></td>
<td><strong>$30,103</strong></td>
</tr>
</tbody>
</table>

See Notes to Financial Statements
### Partnership for Clean Competition Research Collaborative

#### Statement of Cash Flows

**Year Ended December 31, 2019**

<table>
<thead>
<tr>
<th>Operating Activities</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Change in net assets</td>
<td>$(1,167,423)</td>
</tr>
<tr>
<td>Items not requiring (providing) cash</td>
<td></td>
</tr>
<tr>
<td>Amortization</td>
<td>44,605</td>
</tr>
<tr>
<td>Changes in</td>
<td></td>
</tr>
<tr>
<td>Contributions receivable</td>
<td>$(197,732)</td>
</tr>
<tr>
<td>Prepaid expenses</td>
<td>$(9,490)</td>
</tr>
<tr>
<td>Prepaid fellowship</td>
<td>54,150</td>
</tr>
<tr>
<td>Accounts payable and accrued liabilities</td>
<td>$(472,509)</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Net cash used in operating activities</td>
<td>$(1,748,399)</td>
</tr>
</tbody>
</table>

| Decrease in Cash, Cash Equivalents and Restricted Cash     | $(1,748,399) |

| Cash, Cash Equivalents and Restricted Cash, Beginning of Year | 6,622,465 |

| Cash, Cash Equivalents and Restricted Cash, End of Year     | $4,874,066 |

### Reconciliation of Cash, Cash Equivalents and Restricted Cash on the Statements of Financial Position

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Cash and cash equivalents</td>
<td>$3,303,868</td>
</tr>
<tr>
<td>Restricted cash</td>
<td>1,570,198</td>
</tr>
</tbody>
</table>

| Total cash, cash equivalents and restricted cash     | $4,874,066 |