

THOMAS TOBIN

MVB, MSc, PhD, MRCVS, DABT, 80-15, AMAORC

Toxicologist/Pharmacologist/Veterinarian

SUMMARY CURRICULUM VITAE AND BIOSKETCH

Citations, 5,878, *h*-index 39, *i10* index 147, ResearchGate Score, 2020 41.83

IP Royalties, US Patent #5,583,095 US\$10M, UK ELISA Technology license, US\$2.5M to date

<https://orcid.org/0000-0001-8506-3147>

www.thomastobin.com

<http://vetsci.ca.uky.edu/> <http://getgluck.ca.uky.edu/> <http://gluck.ca.uky.edu/>

<https://toxicology.med.uky.edu/>

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Office: (859) 218 1092; Dept. 859 257 4757 UK Fax: (859) 257-8542
E-mail: ttobin@uky.edu; Personal e-mail: thomastobin@me.com
Personal cell, 1-859 229 9392,

Education: MVB, (DVM), University College, Dublin, Nat. Univ. Ireland, 1964
MSc, Pharmacology, University of Guelph, 1966
PhD, Pharmacology, Medical Center, University of Toronto, 1970
MRCVS – Member, Royal College of Veterinary Surgeons, 1964-date

Boards DABT, Diplomate, American Board of Toxicology Inc., 1980-2015

Vet. Licenses Licensed/eligible to practice in Ireland, 1964-date
Licensed to practice in Ontario, Canada, 1964-1978
Overseas practicing member, Royal College of Veterinary Surgeons.
Kentucky Veterinary License, NS-1053146473, 1978 -date

Employment: Professor of Veterinary Science, The Maxwell H. Gluck Equine Research Center, U.K., Professor, the Graduate Center for Toxicology / Department of Toxicology and Cancer Biology, UK, 1975-date

INTELLECTUAL PROPERTY:

Patent Applications

Filed/Awarded

- 1) **1984:** US Patent # 4,473,640 for morphine detection: “Detection of Morphine and its analogues using enzymatic hydrolysis”.
- 2) **1999:** US Patent # 5,883,095 for treatment of EPM (1999) “Formulations and methods to treat and prevent Equine Protozoal Myeloencephalitis”.
- 3) **2004:** US Patent Application number: 20040053938” “Novel method and device for treatment of exercise induced pulmonary hemorrhage in horses”
- 4/ **2005:** US Patent Application number: 20050043288 “Composition and method for marking procaine penicillin”
- 5) **2006:** US Patent # 7,074,834 for an equine tranquilizer (2006); “Long

acting, reversible veterinary sedative and analgesic and method of use.”

6) 2014: US Utility Patent E-filing, Filing, Oz, H and **Tobin T** “Novel Compositions & Methods for Preventing & Treating Apicomplexan Related Disease” utility patent application E-filed August 4th, 2014, EFS ID: 19771622, Application Number: 14451337 International Application Number: N/A Confirmation Number: 496.

LICENSED IPS/ COMPANIES:

1/ 1987-1989 International Diagnostic Systems; Royalty arrangements for fentanyl, carfentanil, furosemide, acepromazine, cocaine, detomidine, phenylbutazone, alfentanil, sufentanil and 20-plus others, in ELISA and PCFIA formats.

2/ 1991: WTT ELISA TESTS, Inc., created by UK with licenses for 50- plus ELISA tests, 1991. Sold to Neogen, Inc., ELISA Technologies, 1993.

3/ 1999: US Patent # 5,583,095 licensed to Bayer, first FDA approved treatment for Equine Protozoal Myeloencephalitis, marketed as **Marquis®**, August 2001, also (Fall, 2011) marketed as **Protazil®** by Merck Animal Health.

4/ 1999: 20 equine medication metabolites/regulatory analytes/deuterated standards, research quality, licensed to Neogen, Inc.

5/ 2011: 20 plus other metabolites/regulatory analytes/deuterated standards as Certified Reference Standards, licensed to Frontier BioPharm, March 2011.
<http://www.thomastobin.com/standards.htm>

6/ 2012-2016: University of Kentucky Intellectual Property involving novel therapeutic approaches to parasitic disease licensed for patenting and commercialization to VC Equine Research, Inc., September 24th, 2012. A provisional patent was filed by VC equine and a utility patent made possible by this Intellectual Property disclosure was filed on August 4th, 2014 as follows; US Utility Patent E-filing, Filing, Oz, H and **Tobin T** “Novel Compositions & Methods for Preventing & Treating Apicomplexan Related Disease” utility patent application E-filed August 4th, 2014, EFS ID: 19771622, Application Number: 14451337 International Application Number: n/a Confirmation Number: 496.

COPYRIGHTS/ROYALTIES

2003: Unusual mathematical analysis and biologically unique pathogenesis of the Mare Reproductive Loss Syndrome (MRLS) copyrighted (US Copyright# TXU1111484). Other copyrights and IP royalties.

TEACHING Toxicology, Pharmacology, “Ethics in Scientific Research,” “Risk Assessment,”

International Short Courses: “The Commission Veterinarian/Equine Medical Director” 1995 to 2001, and “Testing for Therapeutic Medications, Dietary and Environmental Substances.” Six Kentucky Veterinarian’s Short Courses, 2000-2001. Bain-Fallon Lectures, Australia, 1990 and 2002. Workshop on Mare Reproductive Loss Syndrome (MRLS), August 2002, Published, May 2003. Ongoing lectures to Equine Program students, to Graduate Center for Toxicology students, Organized and presented The Tex Cauthen Farrier / Veterinarian / Researcher seminars, January 2017, 2018, 2019 and 2020.

HONORS/RECOGNITION

Ontario Government Faculty Training Grant 1967-70,
 Massey College Junior Fellow, Massey College, University of Toronto, Ontario 1967-70,
 Graduate Center for Toxicology Student Award, 1993;
 Toxicology rated the only “*extremely effective*” *graduate program in Kentucky by National Research Council*, 1992-93;
 National Horsemen’s Benevolent and Protective Association [NBPA] Man of the Year, 1995,
 Invited lecturer, Bain Fallon Lectures, New Zealand 1989;
 The “**Dr. Thomas Tobin Purse**,” August 1, Emerald Downs, Seattle, Washington, 1999;
 Kentucky Horsemen’s Benevolent and Protective Association [HBPA] Man of the Year, 1999;
 Dubai Millennium Medal, 2001.
 Honorary faculty, College of Veterinary Medicine, Cordoba, Argentina,
 “**Thomas Tobin Purse**”, Cordoba, Argentina, August 2001.
 The Professor Thomas **Tobin Trophy**, Cayamanas Racetrack, Jamaica, April 20th, 2002.
 Invited lecturer, Bain-Fallon Lectures, Gold Coast, Australia, July 2002, **Thomas Tobin Purse**, Sao Paulo, Brazil, 2007, Race won by Baroness Margarida Polak Lara, Primeira Dama do Turfe Brasileiro, and prize presented to her.
 Kentucky Horsemen’s Benevolent and Protective Association [KBPA] Industrial Service Award, 2009,
 Invited Lecturer Buenos Aires, Argentina, and Montevideo, Uruguay, July 2012,
 Invited lecturer Union Nacional de Asociaciones Ganaderas Colombianas- UNAGA, Bogota, Colombia, 2015.
 Sixth WADA and Anti-Doping Laboratory Qatar, June 1st, 2016, Invited lecture and invited to chair the conference closing session.
 Guest of His Highness Sheik Mohammed bin Rashid al Maktoum, Vice President and Prime Minister of the United Arab Emirates and Emir of Dubai at the 2014, 2015, 2016 and 2017 Dubai World Cups and also made invited presentations at the Buhoot Equine Research Center, Marmoom, Dubai UAE, in association these visits.
 Invited lecturer Union Nacional de Asociaciones Ganaderas Colombianas- UNAGA, Bogota, Colombia, 2017.

RESEARCH SUPPORT: Approximately \$16 million through 2020.

PUBLICATIONS: Approximately 500 papers/communications, 420 plus invited presentations, numerous educational submissions and presentations including testimony in 1983 before the US Congressional Criminal Justice subcommittee, 3

awarded patents, numerous communications, four books, several volumes of proceedings, uncounted abstracts, 5,878 citations, more or less. ResearchGate score, 41.77, January 2020, score based on only 300 or so publications. Numerous articles published and reprinted in lay journals.

- SELECTED BOOKS:**
- 1) *Drugs and the Performance Horse*, by **Thomas Tobin**. Foreword by HRH, the Duke of Edinburgh. 480 pp., Springfield, Illinois: Charles C. Thomas, 1981.
 - 2) *Equine Drugs and Vaccines: A Guide for Owners and Trainers* 1995. Eleanor Kellon and **Thomas Tobin**. Breakthrough Publications, Ossining, New York.
 - 3) *Equine Drug Testing and Therapeutic Medication Regulation: 2008 National Policy of the National Horsemen's Benevolent and Protective Association, Inc.* Kent H Stirling and **Thomas Tobin**, 160 pages, Wind Publications, PO Box 24548, Lexington Kentucky 40524, wind @wind.org
 - 4) *Equine Drug Testing and Therapeutic Medication Regulation: 2009 National Policy of the National Horsemen's Benevolent and Protective Association, Inc.* **Thomas Tobin** and Kent H Stirling, 170 pages, Hardcover ISBN 978-1-893239-12-8 Softcover ISBN 978-1-936138-03-6 Wind Publications, PO Box 24548 Lexington Kentucky 40524, wind@wind.org
 - 5) *World Rules for Equine Drug Testing and Therapeutic Medication Regulation 2012 Policy of the National Horsemen's Benevolent and Protective Association* **Thomas Tobin**, Kimberly Brewer, Kent H. Stirling CY 280 pages, February 2012, International Standard Book Number, 978-1-9361388-42-5, Library of Congress Number, 2001012345. Wind Publications, 600 Overbrook Drive, Nicholasville KY 40350
 - 6) In translation into Spanish: *Reglamentacion Mundial para Evaluacion de Drogas y Regulacion de Medicacion Terapeutica en Equinos; Política 2012 para la Asociación Nacional de Beneficencia y Protección de Jockeys.* **Thomas Tobin**, Kimberly Brewer, Kent H. Stirling and Teresita Zambruno, Wind Publications, 600 Overbrook Drive, Nicholasville KY 40350, in progress.

WORKSHOPS/ PROCEEDINGS/ SYMPOSIA:

- 1) **Thomas Tobin**, Jerry W Blake and William E. Woods, 1979; The Third International Symposium on Equine Medication Control, Lexington, Ky, June 12,-14, 522 pages Published by the Department of Veterinary Science, University of Kentucky.
- 2/ **Thomas Tobin**, Jerry Blake, Mike Potter and Thomas Wood, 1988: Proceedings of the 7th International Conference of Racing Analysts and Veterinarians, Louisville, KY, April 10-13, 1988, 516 pages. Published by the Department of Veterinary Science, University of Kentucky.
- 3/ *Proceedings of the Workshop on Testing for Therapeutic Medications, Environmental and Dietary Substances in Racing Horse*. 218 pages, 1995.
- 4) *"Furosemide in the Horse: its actions effects and regulatory control"* A Testing Integrity Program Seminar held at The New Orleans Hilton Riverside, March 1, 1998. Convened by Richard Sams and Scott Stanley,

Edited by J.D Harkins, Wyndee Carter and **Thomas Tobin**; Wind Publications, PO Box 54248, Lexington Kentucky, 40524 (wind@wind.Org)

5) Proceedings of the First Workshop on Mare Reproductive Loss Syndrome [2003] Powell, David G, Troppman, Amy and **Tobin, Thomas (Eds): 134 pages, The Maxwell H Gluck Equine Research Center, College of Agriculture, Food and Environment, University of Kentucky Lexington, KY, August 2002, Published 2003.**

BIOGRAPHICAL SKETCH:

Thomas Tobin (TT), Veterinarian, Dublin, 1964, Pharmacologist, MSc, Guelph, 1966, PhD Medical Center, University of Toronto, 1970, Instructor, Assistant and Associate Professor, Michigan State University, 1970-1974, contributed about 40 research papers on Sodium Potassium ATPase. From 1975-date, Equine Pharmacology, Therapeutics and Toxicology (EPTT) program at the University of Kentucky. In 1979 organized the Third Int. Symp. On Equine Medication Control, now the International Conference of Racing Analysts and Veterinarians, ICRAV, in 1980 became a Diplomate, America Board of Toxicology, DABT. <http://www.ca.uky.edu/gluck/index.htm>. In 1981 authored/published *Drugs and the Performance Horse*, a 480 page text. In 1983 testified before the Criminal Justice Subcommittee of Congress on the "Corrupt Horse Racing Practices Act"; activity on this bill thereafter ceased.

In 1985 **TT** initiated the research that introduced ELISA drug testing to horse racing. Commercialization of this technology led to the creation of the first UK spin-off company, WTT ELISA TESTS, later sold to Neogen Corp (www.neogen.com). Neogen Lexington now employs 250 plus, brings in \$150M plus/year to Lexington and the ELISA IP yields a significant UK Intellectual property royalty, <https://uknow.uky.edu/campus-news/neogen-expansion-continues-benefit-uk-kentucky>. More recently, a number of these ELISA tests have been adapted for human hair testing, www.omegalabs.net/.

In 1988 **TT** became Director of the UK Graduate Center for Toxicology, brought in an \$800K NIEHS Training Grant still in place and developed minority programs. By 1993 core faculty and student admissions were up three-fold, extramural funding had increased from 0 to \$800K per year and new courses on "*Ethics in Scientific Research*" and "*Risk Assessment*" had been developed. When the National Research Council reviewed Kentucky doctoral programs in 1993, only the Graduate Center for Toxicology was rated "*extremely effective*".

In 1994, **TT** organized and published an international workshop, "Testing for Therapeutic Medications, Environmental and Dietary Substances in Racing Horses," that brought 70 international industry leaders to Lexington. In 1995, **TT** and colleagues organized "The Commission Veterinarian/Equine Medical Director: A Short Course". In 1995, **TT** and colleagues founded the Testing Integrity Program (TIP), a national drug testing Quality Assurance Program (www.testingintegrityprogram.org/). In 1995 **TT** was named "Man of the Year" by the National Horsemen's Benevolent and Protective Association.

In 1996, **TT** and David Granstrom investigated new therapeutic approaches to Equine Protozoal Myelitis (EPM), rapidly establishing the therapeutic efficacy of Diclazuril and Toltrazuril. A use patent in this area was granted (US patent #5,883,095, 1999) and licensed to Bayer Animal Health; in July 2001, Bayer Marquis® (Bayer DVM.com – Marquis®) became the first FDA-approved treatment for EPM. More recently, Diclazuril as Protazil® has been brought to market

under this same patent by Merck Animal Health, total sales to date estimated at >US\$150 million, significant UK patent royalty.

In 1998 the industry focused on Clenbuterol. A series of LC-MS-MS based studies led to the publication of a highly sensitive serum test for Clenbuterol, allowing much more sensitive and reliable regulatory control of therapeutic medications than previously. In 1998 TT also organized and published a Testing Integrity Program [TIP] seminar on Furosemide.

In 2000, at the direction of the Kentucky Racing Commission (KRC), TT developed a series of nationally accredited continuing education short courses for practitioners and regulatory veterinarians in Kentucky and surrounding states. Six such short courses were offered.

In May 2001, TT chaired the Toxicology Working Group investigating the 2001 Mare Reproductive Loss Syndrome (MRLS) and his group temporarily redirected to work on MRLS. Within three weeks the Eastern Tent Caterpillar was identified as a/the central factor in MRLS. Work in 2002 clearly linked MRLS to the Eastern Tent Caterpillar; in July 2002 TT proposed that the pathogenesis of MRLS followed a biologically unique probabilistic septic penetrating setal emboli model. In August 2002, TT and David Powell organized the first workshop on the Mare Reproductive Loss Syndrome, published in May 2003. In 2003, TT showed that MRLS followed a unique probabilistic mathematical model, "Accelerated Failure Time Analysis", and the biologically unique proposed pathogenesis for MRLS based on septic penetrating and embolic setal fragments (www.jarvm.com/articles/Vol2Iss2/TOBINJARVMVol2No2.pdf) was formally communicated and the copyright registered (US Copyright# TXU1111484).

In 2003 the program contributed to the writing of the first National HBPA Proposed Policy on Drug Testing and Therapeutic Medication (<http://hbpa.org/resources/MedicationPolicy.pdf>) and focused on developing fully validated quantitative analytical methods for therapeutic medications appropriate for use in racing horses. In 2003 it was decided that it would be in the best interests of the racing industry in Kentucky for the program to accredit, and the process of becoming A2LA accredited was initiated. In 2004, following election of a Republican governor, the program redirected to address therapeutics and toxicology, with an emphasis on diagnostics, prophylaxis and therapeutics for equines.

In 2005 the program began synthesizing a series of certified reference standards and stable isotope internal standards for the regulatory analytes of equine therapeutic medications. These standards were based on earlier research quality standards used in thresholds research pioneered by the program, and these certified reference standards have been made available worldwide through UK licensing agreements. In July 2006 US Patent # 7,074,843 for a novel veterinary sedative and tranquilizer was awarded and a unique pathogenesis for oligofructan associated equine laminitis was proposed.

More recently work on certified reference standards and stable isotope internal standards for use in quantitative forensic work in equine medication control and related areas continues. The program generated research support from the Kentucky Science and Engineering Foundation [KSEF] the Racing Medication and Testing Consortium [RMTC] and National and local Horsemen's Benevolent and Protective Association organizations [HBPA's] the Kentucky Equine Drug Research Council and other equine groups in support of the creation and commercial availability of appropriate Certified Reference Standards for use in racing chemistry. The research/intellectual property goal is to create and provide certified reference standards and stable isotope internal standards for the 50 or so therapeutic medications used in horses in training, and whose use is regulated by quantitative forensic chemistry. This work is being carried

out in association with Frontier BioPharm Inc. of Richmond Kentucky [www.FrontierBiopharm.com] and the Lexington division of Neogen Corporation Inc. [www.neogen.com].

Medications for which certified reference standards and stable isotope, usually deuterated, internal standards have been developed and are have been or are being brought to market include phenylbutazone, flunixin, ketoprofen, methocarbamol, guaifenesin, clenbuterol, procaine and furosemide. Additionally, a number of certified reference standards for drug metabolite fragments/regulatory analytes include unlabeled and deuterated 3-hydroxylicocaine, 3-hydroxymepivacaine, hydroxyethyl promazine sulfoxide, carboxyDetomidine and Hydroxydetomidine, with approximately 5 corticosteroid therapeutic medications scheduled for stable isotope reference standard development.

In 2008 the third edition of the National Horsemen's Benevolent and Protective Association Policy on Drug Testing and Therapeutic Medication Regulation was assembled by the program in cooperation with Mr. Kent Stirling, Chairman of the National HBPA Medication Committee and Executive Director of the Florida Horsemen's Benevolent and Protective Association. In 2009 Mr. Kent Stirling and TT were jointly awarded the 2008 National Horsemen's Benevolent and Protective Association Industry Service Award. In March 2011 the first of a sequence of metabolites/regulatory analytes/deuterated standards certified reference standards were licensed to Frontier BioPharm. In February 2012 the fourth edition of the HBPA medication book, now entitled "World Rules for Equine Drug Testing and Therapeutic Medication Regulation" was published and the first certified reference standard for myo-Inositol TrisPyroPhosphate [ITPP] was released through the Frontier Biopharm LLC licensing agreement.

In 2012 a University of Kentucky Intellectual Property involving novel therapeutic approaches to parasitic disease was licensed for patenting and commercialization to VC Equine Research, Inc. A provisional patent was filed by VC Equine. In 2104 the utility patent made possible by this Intellectual Property disclosure was filed on August 4th, 2014: US Utility Patent E-filing, Filing, Oz, H and **Tobin T** "Novel Compositions & Methods for Preventing & Treating Apicomplexan Related Disease" utility patent application E-filed August 4th, 2014, EFS ID: 19771622, Application Number: 14451337 International Application Number: n/a Confirmation Number: 496.

In 2106, and thereafter TT and Mr. Hans Albrecht convened the first TEX CAUTHEN MEMORIAL SEMINAR. To date four such annual seminars have been organized. Guests of honor are Doug, Kerry & Steve Cauthen, in 2020 the invited speakers include Professor Kevin Keegan, Dr. Bronte Forbes, Mr. Sandy Hawley, Dr. Rob Holland, Mr. Hans Albrecht, Mr. Michael Savoldi, Dr. Pedro De Pedro and Dr. **Thomas Tobin**. The seminars are held in the Auditorium of The Maxwell H. Gluck Equine Research Center, University of Kentucky, Lexington, KY 40546-0099. The entire seminars have been videotaped and made available on The Maxwell H. Gluck Equine Research Center web site and republished by the American Farriers Association Communications Committee on their internet newsletter / eblast.

THOMAS TOBIN

MVB, MSc, PhD, MRCVS, DABT, 1980-2015, AMAORC.

Toxicologist/Pharmacologist/Veterinarian

Citations, 5,027, *h*-index 35, *i*10 index 133 ResearchGate Score, 2020 41.83

www.thomastobin.com

<http://vetsci.ca.uky.edu/> <http://getgluck.ca.uky.edu/> <http://gluck.ca.uky.edu/>

<https://toxicology.med.uky.edu/>

BORN Dublin, Ireland, Naturalized United States Citizen.

BUSINESS ADDRESS The Maxwell H. Gluck Equine Research Center, Room 128C, University of Kentucky, 1400 Nicholasville Rd, Lexington, KY 40546-0099,
E-Mail: ttobin@uky.edu; Phone: (859) 218 1092; Fax: (859) 257-8542

HOME ADDRESS Nine Mile Farm, 5301 Bethel Rd, Lexington, KY 40511
E-Mail- thomastobin@me.com Personal Cell 1-859-229-9392

MARITAL STATUS Married, Vicki Wooley-Tobin; Daughter, Mary Courtney Tobin, Esq.

EDUCATION, LICENSES, BOARDS

MVB (DVM) National University of Ireland, University College, Dublin, 1958-1964, Bachelor of Veterinary Medicine, MVB

MRCVS Member of the Royal College of Veterinary Surgeons, 1964-date

MSc University of Guelph, Canada, Pharmacology, 1964-1966

PhD University of Toronto, Canada, College of Medicine, Pharmacology, 66-70

DABT Diplomate, American Board of Toxicology, 1980-2015

LICENSES Licensed Veterinarian, United Kingdom, Ireland, 1964-date, Canada 1964-1978, Kentucky, NS-1053/146473, 1978-date

FELLOWSHIPS, DISTINCTIONS, AWARDS

University of Toronto, Ontario Government Faculty Training Grant 1967-1970

Massey College Junior Fellow, University of Toronto, Ontario 1967-1970

[<http://www.masseycollege.ca/>]

Bain Fallon Lectures, Australia 1989

Toxicology Student Award, Graduate Center for Toxicology, 1993

Graduate Center for Toxicology rated "*the only extremely effective*" graduate program in KY in 1992-93 by National Research Council", 1995.

“Man of the Year,” National Horsemen's Benevolent and Protective Association, 1995
 Hirsch Speaker Series Lecturer, University of Arizona, 1996
 “Man of the Year,” Kentucky Horsemen's Benevolent and Protective Association, 1999
 Dr. **Thomas Tobin** Purse, Emerald Downs, Seattle, 1999
 Dr. **Thomas Tobin** Purse, Cordoba, Argentina, 2001
 Honorary Faculty Member, Province of Cordoba College of Veterinary Medicine, Argentina,
 Dubai Millennium Medal 2001, Gift of His Highness Sheikh Mohammed bin Rashid Al
 Maktoum Vice President, Minister of Defense and Prime Minister of the United Arab
 Emirates (UAE), and Emir (Ruler) of Dubai.
 The Professor Thomas **Tobin** Trophy, Cayamanas Racetrack, Jamaica, April 20th, 2002
 Bain-Fallon Lectures, Australia, 2002
Thomas Tobin Purse, Jockey Club of Sao Paulo, Sao Paulo, Brazil, 2007
 National HBPA 2008 Industry Service Award, 2009
 Invited Lecturer Buenos Aires, Argentina, July 2012, and Montevideo, Uruguay, July 2012
 Guest of His Highness Sheik Mohammed bin Rashid al Maktoum, Vice President and Prime
 Minister of the United Arab Emirates and Emir of Dubai at the 2014/2015, 2016 and most
 recently the 2017 Dubai World Cups and also made invited presentations at the Buhoot
 Equine Research Center, Marmoom, Dubai UAE, in association these visits.
 Invited Lecturer, Bogota, Colombia, 2015
 Invited Lecturer, Doha, Qatar, 2016 Sixth WADA and Anti-Doping Laboratory Qatar, June 1st,
 2016, Invited lecturer and chair of the conference closing session.
 Invited Lecturer, UNAGA, Bogota, Colombia, 2017.

PROFESSIONAL AND TEACHING EXPERIENCE

1978 - Date Professor, Department of Veterinary Science, Professor, Graduate Center for
 Toxicology, now Department of Toxicology and Cancer Biology, University
 of Kentucky.
 2013 - 2018 Scientific advisor, Buhoot Equine Research Center, Marmoom, Dubai, United
 Arab Emirates.
 1988 - 1993 Director, Graduate Center for Toxicology, University of Kentucky
 1975 - 1978 Associate Professor, Dept. of Vet Sci and Graduate Center for Toxicology, Univ.
 of KY.
 1970 - 1974 Instructor, Assistant and Associate Professor, Dept. of Pharmacology, Michigan
 State University, East Lansing, Michigan.
 1966 - 1970 PhD Candidate, Dept. of Pharmacology, Medical Center, University of Toronto
 1964 - 1966 MSc, Candidate, Dept. of Pharmacology, College of Veterinary Medicine,
 University of Guelph, Guelph, Ontario, Canada
 1958 - 1964 Veterinary student, National University of Ireland, University College Dublin
 1948 –1958 Apprentice carpenter, coal merchant and Guinness distributor, James Ryan
 and Sons, 16 The Quay, New Ross, Co. Wexford, Ireland.

INTELLECTUAL PROPERTIES, PATENTS, LICENSES, COPYRIGHTS, ROYALTY ARRANGEMENTS

1) 1984: US Patent # 4,473,640: “Detection of Morphine and its analogues using enzymatic
 hydrolysis”. **Abstract:** The invention relates to a method for hydrolyzing drug-glucuronic acid
 conjugates present in mammalian body fluids, the conjugates being derived from a narcotic

analgesic, antagonist, or agonist-antagonist whose metabolism includes conjugation with glucuronic acid. The method comprises incubating the body fluid sample at from about 60.degree. To about 70.degree. C., for at least about 1 hour, with .beta.-glucuronidase derived from *Patella vulgata*, and substantially increases the sensitivity of chromatographic techniques for the detection of morphine and its analogues. **Type:** Grant **Filed:** June3, 1982, **Date of Patent:** September 25, 1984, **Inventors:** Joan D. Combie, Jerry W. Blake, Thomas E. Nugent, and **Thomas Tobin**.

2) International Diagnostic Systems, 1987-1989; University of Kentucky licensing and royalty arrangements for fentanyl, carfentanil, furosemide, acepromazine, cocaine, detomidine, phenylbutazone, alfentanil, sufentanil and 20-plus other tests, in ELISA and PCFIA formats.

<https://www.washingtonpost.com/archive/sports/1988/04/07/new-test-could-confirm-widespread-drug-use-in-horse-racing/9fe5e16e-f420-4d57-965e-ae5390aeb99a/>

3) 1989: WTT ELISA Tests. Founder with David Watt and Dan Tai of first UK "Spin Off" company to develop, manufacture, distribute and market ELISA tests for use in racing horses and greyhounds. Sold to Neogen Corp, 1992, significant UK royalty.

<https://uknow.uky.edu/campus-news/neogen-expansion-continues-benefit-uk-kentucky>

Tests developed and brought to market working with Neogen include:

- | | |
|-----------------------------|--------------------------------|
| 1 Generic Barbiturate | 27 Meperidine |
| 2 Generic Benzodiazepine | 28 Mepivacaine |
| 3 Generic Bronchodilator | 29 Nalbuphine |
| 4 Generic Corticosteroid | 30 Oxymorphone/Oxycodone |
| 5 Generic Fentanyl | 31 PCP |
| 6 Generic Opiate 1 | 32 Pentazocine |
| 7 Generic Promazine | 33 Procaine |
| 8 Generic Tricyclics | 34 Stanozolol |
| 9 Azaperone | 35 Sulfamethazine |
| 10 Boldenone | 36 Tetracaine |
| 11 Butorphanol | 37 Alfentanil |
| 12 Clenbuterol | 38 Bumetanide |
| 13 Cocaine Benzoyllecgonine | 39 Buprenorphine |
| 14 Detomidine/Medetomidine | 40 Carfentanil |
| 15 Dexamethasone | 41 Fentanyl |
| 16 Droperidol | 42 Fluphenazine |
| 17 Ethacrynic Acid | 43 Furosemide (Lasix) |
| 18 Etorphine | 44 Haloperidol (Blood only) |
| 19 Flunixin | 45 Mazindol (Sanorex) |
| 20 Glycopyrrolate | 46 Methylprednisolone |
| 21 Haloperidol Metabolites | 47 Nandrolone |
| 22 Isoxsuprine | 48 Phenylbutazone (Blood only) |
| 23 Levallorphan | 49 Reserpine |
| 24 Lofentanil | 50 Sufentanil |
| 25 Mazindol Metabolites | 51 THC Metabolites |
| 26 Cotinine | |

52 Trans-3-hydroxycotinine	66 Lofentanil
53 Anileridine	67 Mazindol
54 Azaperone	68 Medetomidine
55 3, 4-aminobenzoylecgonine (Cocaine metabolites)	69 Meperidine
56 Caffeine	70 Mepivacaine
57 Clenbuterol	71 Methocarbamol
58 Cromolyn (adapted)	72 Phencyclidine
59 Diprenorphine	73 Prazepam
60 Droperidol	74 Sulfamethazine
61 Glycopyrrolate (adapted)	75 Temazepam
62 Imipramine	76 Triamcinolone Acetonide
63 Isoxsuprine	And others
64 Ketorolac	
65 Lidocaine	

4) 1981, 1995: Publishing royalties: “Drugs and the Performance Horse, 1981” and “Equine Drugs and Vaccines: A Guide for Owners and Trainers, 1995.”

5) 1999: US Patent #5,883,095: “Formulations and methods to treat and prevent Equine Protozoal Myeloencephalitis” **Abstract:** The present invention provides formulations useful to treat EPM. It also provides methods to treat EPM in a horse in need of such treatment, comprising administering a pharmaceutically effective amount of a triazine-based anti-coccidial. Preferred are methods to treat EPM using clazuril, diclazuril, toltrazuril or letrazuril. The present invention also provides methods to prevent *S. neurona* infection in horses comprising administering a prophylactic amount of a triazine-based anticoccidial. Preferred is a method to prevent *S. neurona* infection by using clazuril, diclazuril, toltrazuril or letrazuril, alone or in combination with other known therapeutics.

Type: Grant

Filed: August 7, 1997

Date of Patent: March 16, 1999

Assignee: University of Kentucky Research Foundation

Inventors: David Granstrom, **Thomas Tobin**

6/ Investigational New Animal Drug Applications: Formulations and methods to treat and prevent Equine Protozoal Myeloencephalitis. Investigational New Animal Drugs: two fast track/no environmental risk INADs for two agents for use in EPM. US Patent #5,883,095 granted in this area; licensed to Bayer Animal Health, 1999, marketed as Marquis, August 2001, first FDA approved treatment for EPM, more recently (Fall 2011) marketed as Protazil® by Merck Animal Health. Total sales estimated US150 million, significant UK and Kentucky New Ace Corp patent royalty.

7) 2003: Copyright: Unusual probabilistic mathematical analysis and biologically unique pathogenesis of MRLS copyrighted, US Copyright (US Copyright# TXU1111484).

8/) 2004: US Patent Application number: 20040053938” “Novel method and device for treatment of exercise induced pulmonary hemorrhage in horses” **Abstract:** A device and method are provided for convenient, patient compliant inhalation therapy of equine species. The device can be used to deliver any drug or other pharmaceutical agent which can be

adapted for inhalation directly into the nasal passages of a horse and thereby provide inhalation therapy with minimal discomfort. The device can be used to treat any of a number of conditions including, EIPH, infections and allergies, e.g., asthma or heaves. In one embodiment, the invention provides a method for the treatment or prevention of EIPH, utilizing a composition adapted for inhalant therapy comprised of sildenafil citrate alone or in combination other agents.

Type: Application

Filed: July 16, 2003

Publication date: March 18, 2004

Inventors: Calvert R. Bratton, **Thomas Tobin**

9/ 2005: US Patent Application number: 20050043288 "[Composition and method for marking procaine penicillin](#)" **Abstract:** A chemically marked procaine penicillin is provided as an antibiotic which can be distinguished from procaine used for anesthetic purposes. A preferred embodiment provides a procaine penicillin molecule wherein the procaine portion of the molecule comprises one or more substituted deuterium atoms in place of hydrogen atoms typically found in procaine penicillin. The resulting non-radioactive isotope can be easily identified via mass spectrometry as being distinct from any naturally occurring isotope, without negatively impacting the pharmacological nature of the drug itself. An alternative embodiment of the invention provides a method of marking the procaine penicillin through the substitution of various other isotopes in place of their naturally occurring counterparts. Methods of detection of the marked procaine penicillin molecule are also provided.

Type: Application

Filed: August 23, 2004

Publication date: February 24, 2005

Inventor: **Thomas Tobin**

10) 5) 2006: US Patent # 7,074,834 for an equine tranquilizer (2006); "Long acting, reversible veterinary sedative and analgesic and method of use." **Abstract:** A veterinary composition comprising a guanidine derivative, e.g., guanabenz or guanabenz acetate is provided which produces a rapid acting and long lasting sedative and analgesic effect in a subject animal that is selectively reversible. The use of guanabenz in the horse provides for a safe, effective, long lasting and rapidly reversible sedative and analgesic which can be used on the standing animal. Methods of use of the compositions of the invention are also provided.

Type: Grant

Filed: May 24, 2001

Date of Patent: July 11, 2006

Assignee: University of Kentucky Foundation

Inventor: **Thomas Tobin**

11) 1999: Equine Drug Metabolite Standards, Reference Standards, Stable Isotope Internal Standards and Haptens: W. Karpiesiuk, F. Lehner, Eisenberg, R and **Tobin, T** have synthesized, purified and have licensed or are licensing the release of about 20 research quality equine metabolites standards and internal standards and haptens, modest UK royalty.

12) 2011: Equine Drug Metabolite Standards: 20 plus other Certified Reference Standards, Stable Isotope Internal Standards equine drug metabolite/regulatory analytes/deuterated standards certified reference standards, licensed to Frontier BioPharm, March 2011, modest UK royalty. See also <http://www.thomastobin.com/standards.htm>

	Parent Medication	Regulatory Analyte/ Internal Standard
1	Acepromazine (metabolite)	1-Hydroxyethyl) promazine
2	Acepromazine (deuterated metabolite)	D ₄ 2-(1-hydroxyethyl) promazine sulfoxide
3	Acepromazine (metabolite)	Acepromazine sulfoxide
4	Amitraz (deuterated metabolite)	D ₆ N-2,4-Dimethylphenyl-N'-methylformamidine
5	Bupivacaine (metabolite)	3-Hydroxybupivacaine
6	Chlorpromazine (metabolite)	7-Hydroxychlorpromazine
7	Clenbuterol (deuterated standard)	D ₉ Clenbuterol
8	Clenbuterol (metabolite)	1-(4-Amino-3,5-Dichlorophenyl)ethane-1, 2-diol
9	Clenbuterol (metabolite)	2-(2-)4-Amino-3,5-Dicholorophenyl)-2- hydroxyethylamino)-2-Methyl-Propan-1-Ol
10	Colterol and Bitolterol (metabolite)	3-O-Methylcolterol
11	Carboxydetomidine	D ₄ Carboxydetomidine
12	Hydroxydetomidine	D ₄ Hydroxydetomidine
13	Fluphenazine (metabolite)	7-Hydroxyfluphenazine
14	Furosemide (deuterated standard)	D ₅ Furosemide
15	Flunixin (deuterated standard)	D ₃ Flunixin
16	Guafenesin (deuterated standard)	D ₄ Guafenesin
17	Guanabenz (metabolite)	Hydroxyguanabenz
18	Ketoprofen (deuterated standard)	D ₄ Ketoprofen
19	Lidocaine (deuterated metabolite)	D ₁₀ 3-hydroxylidocaine

20	Lidocaine (metabolite)	3-Hydroxylidocaine
21	Mazindol (metabolite)	2-(2-Aminoethyl)-3-(4-chlorophenyl)-3-hydroxy-2,3-dihydro-isoindol-1-one
22	Mepivacaine (deuterated metabolite)	D ₃ 3-Hydroxymepivacaine
23	Mepivacaine (metabolite)	3-Hydroxymepivacaine
24	Methocarbamol (deuterated metabolite)	D ₄ Methocarbamol
25	Phenylbutazone (deuterated metabolite)	D ₉ Phenylbutazone
26	Procaine (deuterated metabolite)	D ₁₀ Procaine
27	Promazine (metabolite)	3-Hydroxypromazine
28	Promethazine (metabolite)	Promethazine sulfoxide
29	Propranolol (metabolite)	4-Hydroxypropranolol
30	Propiomazine (metabolite)	2-(1-Hydroxypropyl) promethazine sulfoxide
31	Propionylpromazine (metabolite)	2-(1-Hydroxypropyl) promazine sulfoxide
32	Pyrilamine (deuterated standard)	D ₄ Pyrilamine
33	Pyrilamine (metabolite)	O-desmethylpyrilamine
34	Ropivacaine (metabolite)	3-Hydroxyropivacaine
35	Ropivacaine (metabolite)	4-Hydroxyropivacaine
36	Selegiline (metabolite)	Desmethylselegiline
37	Tramadol (metabolite)	Desmethyltramadol
38	Tripelennamine (metabolite)	3-OH-tripelennamine
39	Nandrolone	D3 Nandrolone

13) 2012-2014: University of Kentucky Intellectual Property involving novel therapeutic approaches to parasitic disease licensed for patenting and commercialization to VC Equine Research, Inc., September 24th, 2012. A provisional patent was filed by VC equine and a utility patent made possible by this Intellectual Property disclosure was filed on August 4th, 2014 as follows; US Utility Patent E-filing, Filing, Oz, H and **Tobin T** "Novel Compositions & Methods for Preventing & Treating Apicomplexan Related Disease" utility patent application E-filed August 4th, 2014, EFS ID: 19771622, Application Number: 14451337 International Application Number: n/a Confirmation Number: 496.

14 VALIDATED ANALYTICAL METHODS:

14.1/ "Confirmation and Quantitation of Furosemide in Equine Serum:" TIP Verified SOP, September 11th, 2003 Developed for the Testing Integrity Program by the Equine Pharmacology Laboratory, Gluck Equine Research Center, University of Kentucky.

ADVISORY BOARDS/ACTIVITIES

The Irish Equine Center, Johnstown, County Kildare, Ireland
Thoroughbred Owners of California
Equine Testing Program, University of Auckland, New Zealand
Neogen Corp., Lansing, Michigan
The Alabama; Arizona; Arkansas; Canada; Charles Town, WV; Florida; Iowa; Indiana, Kentucky; Louisiana; Michigan; Minnesota; National, Nebraska, Ohio, Oklahoma, Ontario Canada, Oregon, Pennsylvania, Tampa Bay Downs, FL; Texas; Washington State; West Virginia and Canadian Divisions of The Horsemen's Benevolent and Protective Association.
The Keeneland Association, Lexington, Kentucky
The Fasig-Tipton Company, Lexington, Kentucky
FrontierBioPharm, Richmond, Kentucky
New Ace Corp, Lexington KY
Equine Molecular Diagnostics, Lexington, KY.
BioQuine Inc.
Wycliffe Pharmacy
Scientific advisor, Buhoot Equine Research Center, Marmoom, Dubai, United Arab Emirates.

SELECTED UNIVERSITY COMMITTEE ASSIGNMENTS

Patents Committee, University of Kentucky, 1985-1988
Director of GCT, *ex officio* member of five plus GCT standing committees, 1988-1993
Safety Committee Chair, Gluck Equine Research Center, 1996
Self-Study Committee Chair, Department of Veterinary Science, 1999
Building Committee, Gluck Equine Research Center, 2001
Toxicology Working Group on Mare Reproductive Loss Syndrome, 2001
Graduate Committee, Dept. of Veterinary Science 2009
Faculty Evaluation Committee, Dept. of Veterinary Science 2009
Diversity Advisory Council, College of Agriculture Food, and the Environment, ,
Departmental representative, 2021 to 2024.

SELECTED COMMITTEES, NATIONAL AND INTERNATIONAL

Chairman, Executive, Social and Organizing Committees, Third International Symposium on Equine Medication Control, Lexington, KY, 1979. Raised \$50,000 to support program and organized scientific and social programs for Third International Symposium on Equine Medication Control, June 12, 13, 14, 1979, Lexington, KY. Approximately 120 registrants, 15 countries represented, 50 papers presented; proceedings edited and published 1980.

Chairman, Executive, Social and Organizing Committees, Seventh International Conference of Racing Analysts and Veterinarians, Louisville, KY, 1988. Raised approximately \$85,000 to support program and organized scientific and social programs for Seventh International Conference of Racing Analysts and Veterinarians, April 10-14, 1988, Louisville, KY. Approximately 285 registrants, 23 countries represented, 70 papers presented, proceedings edited and published, 1990.

Chairman, Executive, Social and Organizing Committees, Workshop on "Testing for Therapeutic Medications, Environmental and Dietary Substances in Racing Horses," August 18-19, 1994, Lexington, KY. In six weeks raised \$33,000, brought in 70 scientists, veterinarians and industry leaders from around the world to review the problem of limiting the sensitivity of testing for the above substances. Workshop involved 35 presentations, final report presented, and workshop proceedings edited and published, April 1995.

Chairman, Executive Committee of the International Short Course entitled "The Commission Veterinarian/Equine Medical Director: A Short Course". In association with Drs. George Mundy, Scott Stanley, and Rick Sams organized a 3 day short course for commission veterinarians, November 1995. 85 registrants attended from 20 countries. Two days of lectures, one day field trip to Ohio State and Turfway Park. Raised approximately \$45K, short course, proceedings to be published, precipitated suit against Illinois Hooved Animals Humane Society.

Chairman, Executive Committee of the International Short Course entitled "The Commission Veterinarian/Equine Medical Director: A Short Course". In association with Drs. Mitzi Fisher, Scott Stanley, and Rick Sams organized a 2 day short course for Commission Veterinarians, at Churchill Downs, April 30th and May 1st & 2nd, 2001. 65 registrants attended from 15 countries. Raised approximately \$30K. Publication of proceedings interfered with by arrival on May 5th, 2011 of the Mare Reproductive Loss Syndrome, MRLS.

Organizing and Fundraising Committee, 19th, ICRAV 2012 Conference held at the Sheraton Society Hill Hotel, Philadelphia, Pennsylvania, September 15-22, 2012. Approximately \$200K raised for this Conference, 70 plus papers presented, proceedings edited and published, 1990.

Organizing and Fundraising Committee, January 22, 2017: 1:00 p.m. - 5:00 p.m. the TEX CAUTHEN MEMORIAL SEMINAR with Dr. David Horohov, Doug, Kerry & Steve Cauthen, Mr. Hans Albrecht, Dr. Ric Redden, Dr. Raul Bras, Mr. Michael Savoldi Mr. Steve Simon, Dr. Pedro De Pedro and Dr. Thomas **Tobin**, The Maxwell H. Gluck Equine Research Center, University of Kentucky, Lexington, KY 40546-0099. The entire seminar was videotaped and made available on The Maxwell H. Gluck Equine Research Center web site and republished by the American Farriers Association Communications Committee on their internet newsletter / eblast. eblast. <https://gluck.ca.uky.edu/2017-cauthen>

Organizing and Fundraising Committee, January 21, 2018: 9:30 a.m. - 5:00 p.m. the SECOND TEX CAUTHEN MEMORIAL SEMINAR with Dr. David Horohov, Doug, Kerry & Steve Cauthen, Mr. Hans Albrecht, Mr. Steve Simon, Mr. Michael Savoldi, Dr. Pedro De

Pedro and Dr. **Thomas Tobin**, The Maxwell H. Gluck Equine Research Center, University of Kentucky, Lexington, KY 40546-0099. The entire seminar was videotaped and made available on The Maxwell H. Gluck Equine Research Center web site and republished by the American Farriers Association Communications Committee on their internet newsletter / eblast. <https://gluck.ca.uky.edu/2018-cauthen>

Organizing and Fundraising Committee, January 20, 2019: 9:00 a.m. - 5:00 p.m. the THIRD TEX CAUTHEN MEMORIAL SEMINAR with Dr. David Horohov, Doug, Kerry & Steve Cauthen, Mr. Sandy Hawley, Dr. Rob Holland, Mr. Hans Albrecht, Mr. Steve Simon, Mr. Michael Savoldi, Dr. Pedro De Pedro and Dr. Thomas **Tobin**, The Maxwell H. Gluck Equine Research Center, University of Kentucky, Lexington, KY 40546-0099. The entire seminar was videotaped and made available on The Maxwell H. Gluck Equine Research Center web site and republished by the American Farriers Association Communications Committee on their internet newsletter / eblast. <https://gluck.ca.uky.edu/2019-cauthen>

Organizing and Fundraising Committee, January 19, 2020 9:00 a.m. - 5:00 p.m. the FOURTH TEX CAUTHEN MEMORIAL SEMINAR with Doug, Kerry & Steve Cauthen, Professor Kevin Keegan, Dr. Bronte Forbes, Mr. Sandy Hawley, Dr. Rob Holland, Mr. Hans Albrecht, Mr. Michael Savoldi, Dr. Pedro De Pedro and Dr. Thomas **Tobin**, The Maxwell H. Gluck Equine Research Center, University of Kentucky, Lexington, KY 40546-0099. The entire seminar has been videotaped and made available on The Maxwell H. Gluck Equine Research Center web site and republished by the American Farriers Association Communications Committee on their internet newsletter / eblast. <https://gluck.ca.uky.edu/2020-cauthen>

Organizing and Fundraising Committee, January 24th, 2021 9:00 a.m. - 5:00 p.m. the FIFTH TEX CAUTHEN SEMINAR with Doug, Kerry & Steve Cauthen, Professor Kevin Keegan, Dr. Bronte Forbes, Mr. Sandy Hawley, Dr. Rob Holland, Mr. Hans Albrecht, Mr. Michael Savoldi, Dr. Pedro De Pedro and Dr. Thomas **Tobin**, The Maxwell H. Gluck Equine Research Center, University of Kentucky, Lexington, KY 40546-0099. The entire seminar was videotaped and made available on The Maxwell H. Gluck Equine Research Center web site and republished by the American Farriers Association Communications Committee on their internet newsletter / eblast. <https://gluck.ca.uky.edu/2021-cauthen>

Organizing and Fundraising Committee, Sunday, January 23rd, 2022 9:00 a.m. - 5:00 p.m. the SIXTH TEX CAUTHEN SEMINAR with Doug, Kerry & Steve Cauthen, Professor Kevin Keegan, Dr. Bronte Forbes, Mr. Sandy Hawley, Dr. Rob Holland, Mr. Hans Albrecht, Mr. Michael Savoldi, Dr. Pedro De Pedro and Dr. Thomas **Tobin**, The Maxwell H. Gluck Equine Research Center, University of Kentucky, Lexington, KY 40546-0099. The entire seminar to be videotaped and made available on The Maxwell H. Gluck Equine Research Center web site and republished by the American Farriers Association Communications Committee on their internet newsletter / eblast. <https://gluck.ca.uky.edu/2021-cauthen>

OTHER COMMITTEES:

Racing Commissioners International Task Forces:

- 1991: Task Force on Drug Classification, 1991-present
- 1995: Testing Integrity Program, Founding Member, 1995.
- 1996: Veterinary Advisory Board to the Lexington Humane Society (1996)
- 1995: Research Facilitator, Testing Integrity Program 1995-date
- 2001: Veterinary Advisor, National HBPA Medication and Drug Testing Policy Working Group, to date.
- 2001: AAEP "Norwood" Committee on Therapeutic Medications, 2001.
- 2002: AAEP "Arthur" Advisory Committee to the NTRA Medication Task Force, 2002
- 2007 Racing Medication and Testing Consortium [RMTTC], member, Dietary and Environmental Substances Sub-Committee, 2007-- date
- 2007: Racing Medication and Testing Consortium [RMTTC], member, Veterinary Advisory Committee 2007- date
- 2009: Racing Medication and Testing Consortium [RMTTC], member, committee for the creation of "National Thresholds for Trace level Environmental Substances" 2009 to date.
- 20010-2013: Racing Medication and Testing Consortium [RMTTC] Scientific Advisory Committee,
- 2012: RMTTC Baltimore Medication Scientific Advisory group, September 2012.
- 2013-date: Advisor, Marmoom/Buhoot Equine Research Laboratory, Dubai, UAE
- 2015-date Association of racing Commissioners International [ARCI] Scientific Advisory Committee.
- 2016 Director, North American Association of Racetrack Veterinarians, NAARV.
- 2018 Member, Harness Racing Medication Collaborative, on invitation by Mr. Russell C. Williams, President, United States Trotting Association.
- 2018: Charles Town, West Virginia. Medication Committee, Mr. Joe Moore, Ms. Kelly Talbott, Esq., Commissioner Ken Lowe (previously a CT HBPA President), Ms. Jana Tetrault, Dr. Libby Daniel (State Vet who works at Charles Town and Laurel), Mr. Jim Miller, owner, breeder at Charles Town who runs horses across the country.

1. ACADEMIC ADVISING

Major Professor / Thesis Advisor to:

- | | |
|------------------------------------|-----------------------------------|
| 1) Susapto Dirdjosudjono, MS, 1973 | 11) Lisa Collett, MS Cnd, 1982 |
| 2) Brian L. Roberts, MS, 1977 | 12) Joan D. Combie, PhD, 1982 |
| | 13) David DeQuick, MS, 1984 |
| 3) Richard Miller, MS, 1978 | 14) Thomas Wood, PhD, 1989 |
| 4) Connie G. White, MS, 1978 | 15) Jyan-Ming Yang, PhD, 1992 |
| 5) Joan Combie, MS, 1979 | 16) Sylvia Chay, MS, 1977 |
| 6) Steve Ballard, MS, 1980 | 17) Scott Stanley, PhD, 1992 |
| 7) Theodore Shults, MS, 1980 | 18) Neil Hoglen, MS, 1990 |
| 8) Eugenie Green, MS, 1980 | 19) Joanne Scheurer, MS Cnd, 1993 |
| 9) William A. Rees, PhD, 1997 | 20) Eddie Mitchell, PhD, 1996 |
| 10) Levent Dirikolu, PhD, 2006 | |

- 21) Bradford Bentz, MSc, 1999
- 22) Cedric Holtz, MS, 2000
- 23) Jeffrey Bosken, PhD, 2003
- 24) Manu Mohan Sebastian, BVSc, PhD, 2004
- 25) Fernanda Camargo/Olivier, DVM, PhD, 2007
- 26) Kimberly Brewer DVM, 2012

- 27) Jake Machin, BS, PHD Toxicology 2015-2021 Thesis defended August 11th, 2021
- 28/ Taylor Childers, BSc, MSc in Medical Science candidate, Thesis successfully defended July 31st, 2020.

Post-Doctoral Fellows/Research Associates:

- Dr. John M. Weld, Studies on Endotoxin Shock, 1980-1981.
- Dr. Steve Kamerling, Studies on Equine Pain Perception, 1982-1984.
- Dr. Stefan Kwiatkowski, Synthesis of Derivatives of Tranquilizers, Stimulants, and Narcotic Analgesics, 1987-1988.
- Dr. Ursula Wacjen, Synthesis of Derivatives of Tranquilizers, Stimulants, and Narcotic Analgesics, 1987-1988.
- Dr. Ichiro Fuse, Synthesis of Derivatives of Non-steroidal Anti-inflammatory Drugs and Diuretic Drugs, 1987-1988.
- Dr. Tomohiro Ichimaru, Synthesis of Derivatives of Non-steroidal Anti-inflammatory and Diuretic Drugs, 1987-1988.
- Dr. Alwarsamy Jeganathan, Synthesis of Derivatives of Drugs of Abuse in Racing Horses, 1987-1988.
- Dr. Daniel J. Harkins, Studies on the Pharmacological Effects of Therapeutic Agents, 1993-2004.
- Dr. Nathan Hall, Studies on Musculoskeletal Injuries in Racing Horses, 1995.
- Dr. Wojciech Karpiesiuk: Synthesis of Drug Metabolites, 1995-2009.
- Dr. Fritz Lehner: Detection of High Potency Drugs, 1996-2004.
- Dr. Levent Dirikolu, Pharmacokinetics of Furosemide, 2002-2004.
- Dr. Julio Gutierrez 2009-2011, Certified reference standard synthesis
- Dr. Raghotham R Pinninti 2011, Certified Reference standard synthesis
- Dr. Thirupathi Yerramreddy 2011, Certified Reference standard synthesis
- Dr. Sucheta Kudrimoti, 2012, Certified Reference standard synthesis

Visiting Scientists/Associates:

- Dr. David Snow, Glasgow University: Muscle biopsy work, 1978
- Dr. Marie Agnes Popot, France; Etorphine, 1986
- Dr. Mei-Ru Dai, China; Immunoassay for etorphine and buprenorphine, 1987
- Dr. John Goodman, Energy Lab; Mass spectral confirmation of high potency drugs, 1988
- Dr. Antonio Queiroz Neto, Jaboticabal, Brazil, Behavioral Responses in Horses, 1994-1995
- Dr. In Mo Lee, Seoul, South Korea, Studies on Musculoskeletal Injuries in Racing Horses, 1996.

2. EXTRA-CURRICULAR

Guest Editor, Columnist, Contributor, Editorial Board: *EQUUS*, *Hub Rail*, *The Blood-Horse*, *Practical Horseman*, *Journal of Equine Medicine and Surgery*, *Equine Sport Medicine*, *Horsemen's Journal*, *Appaloosa World*, *Modern Horse Breeding*, *Thoroughbred Times*; about 10-plus articles/year published in lay press. University of Toronto Deep Sea Fishing Team,

1968-1973, Cave Run Sailing Association, 1988. The Thoroughbred Club of America, 1978, The Lexington Polo Club, 1992, The Lafayette Club, 1994, The Iroquois Hunt Club, 1996-2006, Master of Ceremonies, The Bluegrass Charity Ball, 2002-2008.

3. NATIONAL AND INTERNATIONAL ACTIVITIES

Commonwealth of Kentucky, licensed to practice veterinary medicine (1977-present, Kentucky, NS-1053/146473)

Royal College of Veterinary Surgeons, London, licensed to practice veterinary medicine overseas (1964-present)

Ontario Veterinary Association, licensed to practice veterinary medicine (1964-1978)

Canadian Veterinary Medical Association, licensed to practice veterinary medicine (1964-1978)

Michigan Veterinary Medical Association (1970-1974)

American Veterinary Medical Association (1970-present)

Central Kentucky Veterinary Medical Association (1975-1980)

American Society for Pharmacology and Experimental Therapeutics

Founding Fellow and Councilor, American College of Veterinary Pharmacology

American College of Veterinary Toxicology

British Equine Veterinary Association, Associate member

International Doping Research and Control Group

Association of Official Racing Chemists (1977-To date)

International Group of Specialty Racing Veterinarians [IGSRV]

American Association of Equine Practitioners

Society of Toxicology, 1978-1988

Royal Dublin Society

Who's Who in the South and Southwest?

Phi Zeta Society

Member and Founding Fellow, Testing Integrity Program (T.I.P)

Editorial Board: *Modern Horse Breeding*, 1988; *Journal of Equine Medicine and Surgery*, 1978

The Romanian Review of Veterinary Medicine, International Journal of Applied Research in Veterinary Medicine

Guest Reviewer: *Science*, *Molecular Pharmacology*, *National Science Foundation*, *JAVMA*, *AJVR*, *J Eq Med & Surg*, *J Vet Pharm Ther*, *Eq Pract.*,

Visiting Scholar/Advisor, Mr. Aazam Syed Pharmacy in Charge, Zabeel Palace Office, Zabeel Area 1, Dubai, United Arab Emirates and Buhoot Equine Research Center, Marmoom, Dubai United Arab Emirates, 2014-2018.

Kentucky Veterinary Medical Association, 2020

Member, Society of Forensic Toxicology 2020

4. INVITED PRESENTATIONS, SEMINARS, SELECTED EDUCATIONAL SUBMISSIONS, EXPERT OPINIONS, AND RELATED ACTIVITIES:

- 1) Ligand Binding Studies on Na⁺⁺K⁺-ATPase, Department of Biochemistry, Michigan State University, fall 1971.
- 2) The Cardiac Glycosides and the Na⁺⁺K⁺-ATPase, Department of Chemistry, Michigan State University, spring 1972.
- 3) First Int'l Symposium on the Na⁺⁺K⁺-ATPase, New York Academy of Sciences Symposium, November 1973.
- 4) Ontario Veterinary Association Conference on Anesthesia in Lab Animal Medicine, Toronto,

January 1974.

- 5) Neurochemistry Session Chairman, FASEB, Spring Meeting, Atlantic City, New Jersey, April 1974.
- 6) Cardiac Glycosides, Erythrophleum Alkaloids and the Na⁺⁺K⁺-ATPase, Physiology Institute, University of Aarhus, Denmark, September 1974.
- 7) Erythrophleum Alkaloids and the Na⁺⁺K⁺-ATPase, the Biochemical Society, Galway, Ireland, September 1974.
- 8) Cardiac Glycoside Inhibition of Na⁺⁺K⁺-ATPase: Its relation to their Inotropic Actions, Department of Veterinary Science, University of Kentucky, October 1974.
- 9) Cardiac Glycosides, Erythrophleum Alkaloids and the Na⁺⁺K⁺-ATPase, Medical College of Pennsylvania, Department of Pharmacology, December 1974.
- 10) Int'l Conference on Doping Research and Control, Paris, France, May 1975. (First ICRAV!)
- 11) Cardiac Glycosides and the Na⁺⁺K⁺-ATPase, Department of Pharmacology, University of Kentucky, September 1975.
- 12) The Pharmacology of Procaine in the Horse and Its Forensic Significance, School of Veterinary Medicine, University of Tennessee, Knoxville, November 1975.
- 13) Photoaffinity Labeling of the Na⁺⁺K⁺-ATPase, Biochemistry Department, University of Kentucky, February 1976.
- 14) Drugs, Racehorses and the Kentucky Equine Drug Research Program, National Association of State Racing Commissioners Meeting, San Diego, California, March 1976.
- 15) Interaction of Ouabain and Cassaine with Na⁺⁺K⁺-ATPase and Its Relationship to their Inotropic Actions, presented at a symposium on Drug Action at the Molecular Level, London, England, April 1976.
- 16) The Pharmacology and Pharmacokinetics of Procaine in Thoroughbred Horses, presented at Second Int'l Conference on Research and Doping Control, Newmarket, England, May 1976.
- 17) The Pharmacology of Drugs Used in Racing, Seminar, American Association of Equine Practitioners Meeting, Dallas, Texas, November 1976.
- 18) Furosemide in the Horse, National Association of State Racing Commissioners, San Juan, Puerto Rico, March 1977.
- 19) A Review of the Pharmacology of Furosemide in the Horse, presented to Third Int'l Doping Conference, Rome, Italy, March 1977.
- 20) The Pharmacology of Procaine in the Thoroughbred Horse, British Equine Veterinary Association Meeting, Dublin, Ireland, October 1977.
- 21) The Pharmacology of Furosemide in the Horse, Cornell University, Ithaca, New York, November 1977.
- 22) An In Depth Seminar on Medication and Equine Practice, AAEP Meeting, Vancouver, British Columbia, December 1977.
- 23) The Pharmacology of Furosemide in the Horse, Department of Pharmacology, University of Washington, Seattle, December 1977.
- 24) Seminars on Procaine and Lasix® in Thoroughbred Horses (Postgraduate Veterinarians Course), Michigan State University, January 1978.
- 25) Session Chairman, Pharmacokinetics Section, 1st Conference of American College of Veterinary Pharmacologists, Baton Rouge, Louisiana, March 1978.
- 26) "Pre-race Testing", presentation to National Association of State Racing Commissioners,

- Miami, Florida, March 1978.
- 27) Seminar, "The Pharmacology of Furosemide in the Horse," Colorado State University, Fort Collins, April 1978.
 - 28) Seminar, "The Pharmacology of Furosemide in the Horse," Purdue University, Lafayette, Indiana, April 1978.
 - 29) Seminar, "Plasma and Urinary Concentrations of Drugs and Pharmacological Effects," Chicago Equine Veterinarians Group, May 1978.
 - 30) The Pharmacology of Narcotic Analgesics in the Horse: Studies on the Detection, Pharmacokinetics, Urinary Clearance Times and Behavioral Effects of Pentazocine and Fentanyl in the Horse, Fourth Int'l Doping Conference, the Curragh, Ireland, 1978.
 - 31) White CG, Woods WE, **Tobin T**: The Pharmacology of Reserpine in the Horse, I. Effects of Reserpine and Imipramine on Platelet Uptake of Serotonin, presentation and publication, Seventh Int'l Congress of Pharm, Paris, France, 1978.
 - 32) The Pharmacology of Narcotic Analgesics in the Horse, Purdue University, Lafayette, Indiana, November 1978.
 - 33) **Tobin T**, Maylin GA, Fregin F et al.: Drugs and Performance Testing in Racehorses, presentation to NASRC, San Francisco, California, March 1978.
 - 34) **Tobin T**: Medication Testing in North America, presentation to European analysts, Cologne, Germany, March 1979.
 - 35) Moderator, Pharmacological Studies on Doping Drugs in Horses, Third Int'l Symposium on Equine Medication Control, Lexington, KY, June 1979.
 - 36) **Tobin T**: Lasix® in the Horse, Jockey Club Round Table Conference, Saratoga Springs, New York, August 1979.
 - 37) Racehorse Medication, Pharmacologic, Forensic and Administrative Considerations, University of Louisville, KY, September 1979.
 - 38) Overview of Antibiotic Therapy in the Horse, Kentucky Equine Practitioners, November 1979.
 - 39) Guest Lecturer, College of Veterinary Medicine, University of Missouri, Columbia, Medication and Medication Control in Racing Horses, November 1979.
 - 40) Equine Pharmacology Workshop, Columbia, Missouri, November 1979.
 - 41) Overview of Basic Antibiotic Therapy in the Horse, 25th AAEP Meeting, Miami, Florida, December 1979.
 - 42) Guest Lecturer, Clinical Veterinary Pharmacology, College of Veterinary Medicine, Colorado State University, Fort Collins, January 1980.
 - 43) The Pharmacology of Furosemide in the Horse, Diagnostic Laboratory, Iowa State University, Ames, February 1980.
 - 44) Drugs and the Performance Horse, Department Large Animal Medicine, University of Guelph, Guelph, Ontario, March 1980.
 - 45) Recent Advances in Studies on the Drug-Receptor Complexes, with Special Reference to Na⁺K⁺-ATPase and the Opiate Receptor, Second Symposium on Veterinary Clinical Pharmacology and Therapeutics, University of Pennsylvania, June 1980.
 - 46) Two invited papers on a special session on "Medication in Competing Horses," British Equine Veterinary Association:
 - 47) (I) Survey of Positive Results from Racecourse Anti-doping Samples in the USA.
 - 48) (II) Experiences in the Application of Pre-race Dope Testing.

- 49) Bayes' Theorem and its Significance in Equine Drug Testing, presented at AORC Conference NASRC Meeting, Lexington, KY, April 1980.
- 50) The Pharmacology of Furosemide in the Horse, presented at the 1980 AAEP Meeting, Anaheim, California.
- 51) The Pharmacology of the Corticosteroids in the Horse, presented at 1980 AAEP Meeting, Anaheim, California.
- 52) The Role of Simple Behavioral Models in Performance Studies. Seminar on Drugs in Horse Racing, Racecourse Security Services, Newmarket, England, February 1981.
- 53) Drugs and the Performance Horse, Lexington Rotary Club, March 1981.
- 54) Drugs and the Performance Horse, Student Colloquium, Louisiana State University, Baton Rouge, April 1981.
- 55) Pharmacology of Acepromazine in the Horse, Fourth Int'l Symposium on Equine Medication Control, Melbourne, Australia, May 1981.
- 56) Phenylbutazone Use under a Controlled Medication Program, Fourth Int'l Symposium on Equine Medication Control, Melbourne, Australia, May 1981.
- 57) An Overview of Antibiotics and Anti-Inflammatory Therapy in the Horse, Quebec Veterinarians Conference, Montreal, Canada, September 1981.
- 58) An Overview of Performance Horse Medication and Its Control, Mid-American Veterinarians Conference, Louisville, KY, October 1981.
- 59) Guest Lecturer, College of Veterinary Medicine, Gainesville, Florida, September/October 1981.
- 60) Drugs and the Performance Horse, Student Chapter of AAEP, Gainesville, Florida, October 1981.
- 61) "Directions," with Carolyn Kell, thirty-minute television program on Drugs and the Performance Horse, Kentucky Educational Television, October 1981.
- 62) Drugs and the Performance Horse, College of Veterinary Medicine, Virginia Tech, Blacksburg, February 1982.
- 63) Endotoxin Shock in Horses, American Society for Veterinary Pharmacology and Experimental Therapeutics, Ohio State University, Columbus, April 1982.
- 64) Pharmaceutical Manufacturer's Association invited presentation on "Drugs, Medications, and Racing Horses," Louisville, KY, August 1982.
- 65) Symposium on Drugs in Horse Racing and paper on Effects of Drugs on Equine Performance, Fall meeting American Society for Pharmacology and Experimental Therapeutics, University of Louisville, KY, August 1982.
- 66) Guest Lecturer, College of Veterinary Medicine, University of Florida, Gainesville, September/October 1982.
- 67) QED BBC Television Interview on Anabolic Steroids and Racing Horses, Oxford, England, September 1982.
- 68) The Effects of Drugs on Equine Performance, First Int'l Conference on Equine Exercise Physiology, Oxford, England, September 1982.
- 69) Drugs, Medications and Breeding Horses, Munster Thoroughbred Breeders Society, Cashel, Ireland, October 1982.
- 70) Problems, Perceptions and Scientific Realities in Racehorse Medications, invited presentation, Auburn University, Auburn, Alabama, October 1982.

- 71) Drugs and Performance Horses, Kentucky Horsemen's Short Course, October 1982.
- 72) Drugs and Performance Horses, University of Calgary, Canada, February 1983.
- 73) Drugs and Performance Horses, University of Saskatoon, Saskatchewan, Canada, February 1983.
- 74) Drugs and Performance Horses, Harness Horsemen's Association, Columbus, Ohio, March 1983.
- 75) Testimony before the Judiciary Committee, Subcommittee on Criminal Justice, Washington, DC, May 1983, "Phenylbutazone, Furosemide and Drug Testing."
- 76) Drugs and Racing Horses, College of Veterinary Medicine, University of Illinois, November 1983.
- 77) Phenylbutazone and Furosemide in the Racing Horse, Veterinary College of Ireland, Dublin, Ireland, January 1984.
- 78) Drugs, Equine Performance, Drugs in the Growing Horse, Horsemen's Short Course, University of Nevada, Reno, February 1984.
- 79) Plasma Levels of Phenylbutazone in Racing Horses invited presentation American Academy of Veterinary Pharmacology and Therapeutics, College Station, Texas, April 1984.
- 80) Pain Perception and Control in Equines, Proceedings of the Fifth Int'l Symposium on Equine Medication Control, Toronto, Canada, June 1984.
- 81) The Foreign Substance Rule: Presentation to the Board of the HBPA, Cleveland, Ohio, July 1984.
- 82) Drug Detection in Racehorses, Forensic Decisions on Drug Testing in Racehorses, Antibiotics in Equine Medicine, four hours of lecture, South Florida Veterinary Medical Association, Miami, Florida, Labor Day, 1984.
- 83) Drugs, Medication Rules and Performance Horses, four hour seminar, The Caribbean Veterinary Medication Association, Trinidad, November 1984.
- 84) Medication and Testing for Drugs in Racehorses, Transylvania University, Lexington, KY, February 1985.
- 85) Drug Detection in Racehorses, Forensic Decisions Based on Drug Detection in Racehorses and Antibiotics in Equine Medicine, four hour seminar, New Jersey Veterinary Medical Association, Atlantic City, March 1985.
- 86) Drug Detection in Racing Horses and Antibiotic Use in Equine Medicine, four hour seminar, Indiana Veterinary Medical Association, Indianapolis, March 1985.
- 87) Experiences as an Expert Witness, Educating People While under Oath, presented at the Sixth Int'l Symposium on Equine Medication Control, Hong Kong, 1985.
- 88) Drugs and Racing Horses, New Hampshire Vet Med Assoc., New Hampshire, February 1986, four hours of continuing education.
- 89) Keeping Track, California Thoroughbred Breeders Assoc., Breeders Cup Meet, Oct. 27, 1986, Pasadena, California, Use of Medication During a Horse's Racing Career: Does It Mask Inheritable Defects.
- 90) Drugs and the Performance Horse, Irish Veterinary Association Meeting, Kildare, Ireland, December 1987.
- 91) Immunoassay Testing in Equine Forensic Chemistry, Southern Group, Irish Thoroughbred Breeders, Killoran Lodge, Co. Tipperary, Ireland, September 1988.
- 92) ELISA Testing for Drugs: A New Technology, Institute for Mines and Minerals, Lexington, KY,

September 1988.

- 93) ELISA Testing for Drugs in Horses: A New Technology, Bologna, Italy, October 1988.
- 94) ELISA Testing for Drugs in Horses: A New Drug Testing Technology, North American Judges and Stewards Conference, Livonia, Michigan, October 1988.
- 95) ELISA Testing for Drugs in Horses, Harness Expo, Pompano Beach, Florida, November 1988.
- 96) Performance Effects of Drugs in Horses, American Association of Equine Practitioners, San Diego, California, December 1988.
- 97) ELISA Testing for Drugs in Racing Horses, U.N.I.R.E, Rome, Italy, March 1989.
- 98) Drugs, Equine Performance and ELISA Testing for Drugs, Equitana, Essen, West Germany, April 1989.
- 99) Bain Fallon Lectures, eight lectures on Equine Pharmacology and Drug Testing, Coffs Harbour, Australia, May 1989.
- 100) Invited Lecture Tour, North and South Islands, New Zealand, three locations, 18 lectures, May 1989.
- 101) Thoroughbred Racing Protective Bureau, ELISA Testing in Racing Horses, Minneapolis, Minnesota, October 1989.
- 102) Quality Assurance Program Legal Seminar, St. Louis, Missouri, Trace Levels in Equine Drug Testing, November 1989.
- 103) Drug Testing in Racing Horses, four seminars presentations in Mexico City, December 1989.
- 104) Invited presentations, Eighth International Symposium on Equine Medication Control, Harare, Zimbabwe, February 1990.
- 105) Southern Arizona Veterinary Medical Association, Tucson, Arizona, Six seminars on medication in Racing Horses, June 1990.
- 106) ELISA Testing in Racing Horses, Central Kentucky Farm Manager's Club, June 1990.
- 107) Five lectures to veterinarians, Buenos Aires, November 1990.
- 108) Four lectures to administrators, Buenos Aires, November 1990.
- 109) Twelve lectures to Oklahoma Veterinary Medical Association, Oklahoma City, Oklahoma, and January 11-12, 1991.
- 110) Drug Testing and the Graduate Center for Toxicology at the University of Kentucky, Kentucky State University, February 1991.
- 111) Drug Testing and Exotic Drugs in Racing Horses, Johnson & Wells University, Providence, Rhode Island, February 1991.
- 112) Six presentations to the South African Equine Practitioners Association, February 18-19, 1991, Caledon, Cape Province, South Africa.
- 113) Presentation to Cape town Turf Club Members on ELISA Testing and Drug Testing in Racing Horses, February 19, 1991.
- 114) Presentation to Durban Turf Club Members on ELISA Testing and Drug Testing in Racing Horses, February 20, 1991.
- 115) Presentation to Turffontein (Johannesburg) Turf Club Members on ELISA Testing and Drug Testing in Racing Horses, February 21, 1991.
- 116) Expert testimony, South Africa, Affidavit for Turffontein Turf Club on Narcotic Analgesics in Racing Horses. February 1991.

- 117) Four presentations to the Indiana Equine Veterinarians Group on Drugs, Drug Testing and ELISA Testing in Racing Horses, Andersonville, Indiana, March 13, 1991.
- 118) Drugs, Racehorses and Illegal Drug Detection, Benedict College, Columbia, South Carolina, April 1991.
- 119) Trace Levels of Medications in Racing Horses invited presentation to the floor, Racing Commissioners International Meeting, Cincinnati, Ohio, May 1991.
- 120) American Association of Clinical Chemistry, Southeast Ohio Valley Group, ELISA Based Analytical Procedures: A Revolution in Equine Drug Testing, Lexington, Kentucky, October 12, 1991.
- 121) Expert Testimony on Testosterone in Racing Horses on behalf of Iowa Racing Commission Hearing, December 1991.
- 122) Expert testimony, Cook County Courthouse, State vs Wilkie, June 1991, on behalf of prosecutor.
- 123) Two phone depositions, Hearing on Glycopyrrolate, California Horse Racing Board, January & February 1992, commission witness.
- 124) Deposition/Affidavit on behalf of the Colorado State Racing Commission on Pharmacology of Isoxsuprine, August 1992.
- 125) Immunology and the Betting Window, presentation to the Clinical Ligand Assay Society, St. Louis, Missouri, November 1992.
- 126) Immunology and the Betting Window. Presentation to Sigma Diagnostics Group, Sigma Chemical Company, St. Louis, Missouri, November 1992.
- 127) Review of videotape for the Suretie of the Province of Quebec, Quebec, Canada.
- 128) Use of Analgesics in Racing Horses and Their Regulatory Control, invited presentation, British Equine Veterinary Association, September 1993.
- 129) Four lectures on Control of Medications in Racing Horses, Royal Western India Turf Club, Bombay, India, January 3, 1994.
- 130) Presentation on Control of Therapeutic Medications in Racing Horses, Kunigal Stud, Bangalore, January 5, 1994.
- 131) Presentation on Control of Medication in Racing Horses to HRH Prince Miteb, HH Prince Sultan, the Executive Director of the Riyadh Equestrian Club and the club's veterinarians, Riyadh, Saudi Arabia, January 11, 1994.
- 132) Invited presentation on Thresholds and Clearance Times for Therapeutic Agents in Racing Horses, Winter meeting of HBPA, Hot Springs, Arkansas, February 21, 1994.
- 133) Invited presentation on Thresholds and Clearance Times for Therapeutic Agents in Racing Horses, ARCI meeting, Los Vegas, Nevada, May 23, 1994.
- 134) Invited presentation on No Effect Thresholds for Local Anesthetics in Racing Horses, 10th International Conference of Racing Analysts and Veterinarians, Stockholm, Sweden, July 7, 1994.
- 135) Presentation on Workshop on Testing for Therapeutic Medications, Environmental and Dietary Substances in Racing Horses to National Summer HBPA Meeting, Chicago, Illinois, July 25, 1994.
- 136) Workshop on Testing for Therapeutic Medications, Environmental and Dietary Substances in Racing Horses, Lexington, Kentucky, August 18-19, 1994.
- 137) Invited presentation on the outcome of the Workshop on Testing for Therapeutic Medications,

- Environmental and Dietary Substances in Racing Horses, AAEP Annual Meeting, Vancouver, British Columbia, Saturday, December 3, 1994.
- 138) Invited presentation, panel discussion "Are You Positive You Are Negative", University of Arizona Conference on Racing, Tucson, Arizona, December 8, 1994.
 - 139) Report on "Thresholds for Therapeutic Medications in Racing Horses", Spring meeting of the National Horsemen's Benevolent and Protective Association, Houston, Texas, April 13, 1995.
 - 140) The Need for Thresholds for Therapeutic Medications in Racing Horses, Farm Manager's Club, Lexington, Kentucky, April 4, 1995.
 - 141) Thresholds for Therapeutic Medications in Racing Horses: A Television/Live Presentation at the ARCI Meeting in Oklahoma City, Oklahoma, April 23, 1995. Arranged for TV clips by Wayne Lukas, Dick Mandella and John Forsythe, structured program in association with Scott Stanley and Rick Sams.
 - 142) Television clips: a) Amantadine and Rimantadine Prophylaxis of Equine Influenza, b) Thresholds for Therapeutic Medications in Racing Horses. Clips made April 18, 1995, for Derby release.
 - 143) University of Kentucky Equine Law Seminar invited presentation on Thresholds in Equine Medication Control, Thursday, May 4, 1995.
 - 144) Kentucky Equine Research Short Course "Recent Advances in Equine Nutrition", "Drugs and Drug Testing: What Should the Feed Manufacturer Know," May 11, 1995, Lexington, Kentucky.
 - 145) Presentation, Irish Turf Club Analytical Laboratory Review Committee, June 21, 1995.
 - 146) Invited presentation: "Update on Equine Medication Research," Salishan Lodge, Oregon, July 25, 1995. Voted Man of the Year by the National HBPA.
 - 147) Calgary Exhibition and Stampede: Opinion letter to defuse Chuck Wagon Racing Crisis, August 1995.
 - 148) Expert opinion on Clanobutin, The Southern Africa Jockey Club, Nov. 1995.
 - 149) Invited Review, Irish Turf Club, September 1995, Kildangan Stud, Co Kildare
 - 150) Invited Presentations on Equine Medication. Indiana Veterinary Medical Association. February 1996.
 - 151) Invited Presentation, "Doping or Therapeutic Medication" The Dutch Association of Equine practitioners, Amersfoort, Holland, March 6, 1996.
 - 152) "Medication and Medication Control in Racing Horses," Hirsch Series Speaker Lectures, the University of Tucson, Tucson, Arizona, March 29, 1996.
 - 153) Expert opinion on Sodium Bicarbonate: For the Oregon State Racing Commission, March 1996.
 - 154) Invited Presentation, International Conference of Racing Analysts and Veterinarians, Report on Workshop on "Testing for Therapeutic Medications, Environmental and Dietary Substances in Racing Horses, May 1966, Brisbane, Australia.
 - 155) Invited Presentation, "Therapeutic Medications, "No Effect Thresholds" and the Performance Horse" The Members Room, Kalgoorlie Turf Club, Kalgoorlie, Western Australia, May 27, 1996.
 - 156) Invited Presentation, "Therapeutic Medications, "No Effect Thresholds" and the Performance Horse" The Southern Districts Thoroughbred Association Supported by The Breeders, Owners, Trainers, and Reinsmen Association Trotting Association, Golden Nugget Room,

Gloucester Park, Perth, Western Australia, May 30, 1996.

- 157) Invited Presentation, "Therapeutic Medications, "No Effect Thresholds" and the Performance Horse" A Presentation at Ellerslie Racecourse, Auckland, New Zealand, June 1, 1996.
- 158) "Therapeutic Medications, "No Effect Thresholds" and the Performance Horse" A Presentation to Equine Practitioners and Regulators, Auckland University Medical Center, New Zealand, June 2, 1996.
- 159) "The Detection, Actions, Uses and Effects of Drugs and Medications in Performance Horses". A series of seminars to BHP staff, Limerick, Ireland, July 1-5, 1996.
- 160) "The Philosophical Basis For "No Effect Thresholds" or "NETs." Annual Conference of the American Veterinary Medical Association, Louisville, Kentucky July 21, 1996.
- 161) South American Anti-Doping Technology and Medication Testing Conference - The Jockey Club of Brasileiro. August 8th and 9th, 1996, The Rio De Janeiro JCB Central Offices.
- 162) "Performance Affecting Agents and Medications in Racing Horse: An Overview of Their Uses and Effects in Racing Horses"
- 163) "Testing for Performance Affecting Agents and Medications in Racing Horses"
- 164) "Testing for Therapeutic Medications, Environmental and Dietary Substances: The Need for Limited Sensitivity Testing".
- 165) "The North American Approach to Medication Control; The ARCI Foreign Substances Classification System and the American Association of Equine Practitioners Therapeutic Medication List".
- 166) "No Effect Thresholds": One North American Approach to Limiting the Sensitivity of Testing for Approved Therapeutic Agents.
- 167) The Jockey Club of Sao Paulo, Sao Paulo, Brazil, August 12th, 1996. Two hour seminar on "Equine Medication Control in North America and "No Effect Thresholds" or NETS.
- 168) UNESP at Jaboticabal, Jaboticabal Veterinary School, August 13th, 1996. One hour seminar on "Equine Medication Control in North America and "No Effect Thresholds" or NETS.
- 169) Presentations to the "Confederacion Hipica De Puerto Rico, Inc." Second Technical Convention. El Conquistador Beach Resort, Puerto Rico, Sept. 15th, 1996.
- 170) Trinidad and Tobago Racing Authority, Santa Rosa Racing Facility, Churchill Roosevelt Highway, O'Meara, Arima, Trinidad. September 27th, 1996.
- 171) "Performance Affecting Agents and Medications in Racing Horse: An Overview of Their Detection, Actions, Effects and Uses."
- 172) "Limited Sensitivity Testing for Therapeutic Medications, the ARCI Foreign Substances Classification System, the American Association of Equine Practitioners Therapeutic Medication List and Developing "No Effect Thresholds" or NETs.
- 173) Environmental and Dietary Contaminants and "Positives". AAEP Denver, Sunday, December 8, 1996.
- 174) Quantification of Pharmacological Response in the Horse." U of Arizona RTIP, Tucson, Dec 11th, 1996.
- 175) "Thresholds Research Progress." Two presentations to HBPA December 15th and 16th, Phoenix, AZ, Dec. 1996.
- 176) Video Teleconference; "Overview of Medication Control" distance seminar format for Maryland practitioners, presented, March 1997.
- 177) Presentations on "Drug Detection and Control in Racing Animals" at the Scientific Centre for

- Racing Camels, Al Ain, Abu Dhabi, United Arab Emirates, April 7-8th 1997.
- 178) "Regulators, Regulations and the Marketing of Therapeutic Medications" April 16-17th 1997, Merck Inc., Rahaway, New Jersey.
 - 179) Presentation on Equine Protozoal Myelitis, Equine Dressage Clinic, New Jersey. April 19th, 1997.
 - 180) Presentation on analytical/pharmacological relationships for Lidocaine, Association of Racing Commissioners International meeting. Boston, Sunday April 20th, 1997.
 - 181) Review of analytical/pharmacological relationships for therapeutic and performance altering drugs, seminar presentation, BHP, Limerick, Ireland, July 3, 1997.
 - 182) Presentation on "Developing and Marketing ELISA Tests in an Evolving Regulatory Environment". Washington, DC. July 17-18th, 1997.
 - 183) "Analytical/Pharmacological Relationships for Therapeutic Medications". Summer HBPA conference, Las Vegas, Nevada, 1997.
 - 184) "Analytical Pharmacological Relationships: An Overview of Progress". Testing Integrity Program, New Bolton Center, Philadelphia, PA., September 1998.
 - 185) Presentation on "Lasix and EIPH" on behalf of the Thoroughbred Owners & Breeders Association. The Breeder's Cup, Hollywood Park, California, 1997.
 - 186) "Analytical Pharmacological Relationships" update on progress in this field. Presented to the National HBPA, Ft. Lauderdale, Florida, January 1998.
 - 187) Television clip – Super science "Diclazuril and EPM," Monday, February 9th, 1998 Channel 36 Lexington KY.
 - 188) Presentation on "Diclazuril and Equine Protozoal Myelitis" Eighth International Conference on Infectious Diseases. Dubai, United Arab Emirates, March 1998.
 - 189) Presentations on "Analytical-Pharmacological Relationships," Reviews and specific cases, the 12th International Conference of Racing Analysts and Veterinarians, Vancouver, British Columbia, April 1998.
 - 190) "Hay, Oats & Water – Then (?) and Now," Presentation to the Thoroughbred Owners of California, July 23, Del Mar, California, 1998.
 - 191) "Hay, Oats & Water – Then (?) and Now" Presentation to the Medication Committee and the Board of the National HBPA, Des Moines, Iowa, July 26th and 27th, 1998.
 - 192) "EPM and the Performance Horse: New Treatments and Management Options" Presented at the Kentucky Horse Council Seminar, Red Mile Place, Lexington, November 25th, 1998.
 - 193) "Limits on the Sensitivity of Testing" Conference on Applied Biotechniques in the Equine, Brazilian Horse Breeders. Belo Horizonte, Brazil, November 25th, 1998.
 - 194) "Limits on the Sensitivity of Testing" Sao Paulo Veterinarians and Regulators Group, Sao Paulo, Brazil, November 26th, 1998.
 - 195) "Limits on the Sensitivity of Testing" College of Veterinary Medicine, Jaboticabal, Brazil, November 27th, 1998.
 - 196) Representing Testing Integrity Program (TIP) at the Racetrack Industry Testing Program, Tucson, Arizona, December 10th, 1998.
 - 197) "Analytical Techniques in Racing Chemistry" BHP Laboratories, Limerick, Ireland. January 8th, 1999.
 - 198) "Limitations of the Sensitivity of Testing". Presentation to Harness Racing Stewards, Perth, WA, January 11th, 1999.

- 199) Clenbuterol: Review of current research in this area. Presentation to the Medication Committee, National Horsemen's Benevolent & Protective Association, January 16th, Ft. Lauderdale, FL.
- 200) Seminar for Meriel on introduction of Omeprazole in Equine Market. Boston, MA, February 26, 1999.
- 201) "Panel of Experts on Medication" March 6th, 1999, Orlando Florida. **Thomas Tobin**, Richard Sams, George Maylin, and Thomas Lomangino. Hosted by Stan Bergstein of Harness Tracks of America.
- 202) Six plus presentations to the Association of Official Racing Chemists on Drug Testing in Racing Horses, March 10th - March 16th, 1999, New Orleans, Louisiana
- 203) Presentation on Drug Testing and medication control, March 26th, 1999, Dover, Delaware, Seminar @ Delaware Harness Commission Offices.
- 204) Seminar on Medication Control, June 24, 25th, 26th, 1999, Boston, MA for The Controlled Release Society.
- 205) Attendance at the National Council of Legislators from Gaming States (NCLGS) Seminar, July 11th, 1999, Louisville, KY
- 206) Presentation on Clenbuterol, July 16th - 17th, 1999, Chicago, Illinois. Association of Racing Commissioners International (ARCI) Workshop.
- 207) Attendance at Summer Meeting of The Horsemen's Benevolent and Protective Association Meeting, August 2nd - 6th, 1999, Seattle, Washington.
- 208) Presentation to Thoroughbred Owners of California, Del Mar Racetrack, August 7th, 1999, San Diego, California.
- 209) "Seminar on Clenbuterol"; August 21st, 1999; Association of Racing Commissioners International, Del Mar Hilton; San Diego, CA
- 210) Presentation on Clenbuterol Regulation. October 9th - 11th, 1999, Palm Beach, FL. Presentation on Clenbuterol Regulation. National Association of Pari-mutuel Regulators.
- 211) Presentation on "Equine Medication Control: Clenbuterol and Cocaine." National HBPA Meeting, New Orleans, LA, January 30 - February 1, 2000.
- 212) "SuperTesting": Seminar at the Gluck Equine Research Center with Mr. James Gallagher of the NTRA February 7th, 2000.
- 213) Organization of Racing Investigators, Keeneland, Lexington, KY. "Past, Present and Future of Horse Drug Testing". Wednesday, March 22nd, 2000.
- 214) Testing Integrity Program, Davis, California. March 30th - April 1, 2000. Presentations on Clenbuterol, Cocaine and Pyrilamine.
- 215) "Therapeutic Medication of Racing Horses: A Short Course"; Kentucky Racing Commission/Kentucky Racing Commission/Kentucky Equine Drug Council. Short Course, Three Hours. Keeneland, April 21st, 2000.
- 216) New Directions in Equine Drug and Medication Testing. Equine Law Section of the Kentucky Bar Association. Marriott Griffin Gate, May 3, 2000.
- 217) "Therapeutic Medication of Racing Horses: A Short Course": Kentucky Racing Commission/Kentucky Racing Commission/Kentucky Equine Drug Council. Short Course, Three Hours. Churchill Downs, June 8, 2000.
- 218) Invited presentation and discussion group on Product Entry into the Equine Market, Boehringer/3M at the 3M Corporate Retreat, Wonewok, Wisconsin, June 9-12, 2000.

- 219) Representing the Department and the College of Agriculture at the "Memoire" of Mr. Cedric Holtz, Dijon, France, July 26, 2000.
- 220) Review of Equine Research. National Horsemen's Benevolent and Protective Association, Minneapolis, Minnesota, August 4, 2000. Charles Hughes and **Thomas Tobin**
- 221) Clenbuterol in the Horse: An Overview. The 3M Corporation, Minneapolis, Minnesota, August 5, 2000. Charles Hughes and **Thomas Tobin**.
- 222) Invited presentation to 13th International Conference of Racing Analysts and Veterinarians. "No Effect Levels – an Overview and a Pharmacological Approach." Cambridge, England, August 9, 2000.
- 223) "Therapeutic Medication of Racing Horses: A Short Course": Kentucky Racing Commission/Kentucky Racing Commission/Kentucky Equine Drug Council. Short Course, Three Hours. Ellis Park, June 8, 2000.
- 224) Eighth Testing Integrity Workshop. "High Sensitivity and High Throughput ELISA and Mass Spectral Analysis." Lexington, Kentucky. October 6,7, and 8, 2000.
- 225) "Therapeutic Medication and Racing Horses: A Short Course." Extended program with three guest faculty and 50+ registrants. Churchill Downs, Louisville, KY. October 31, 2000.
- 226) "Medication: Then and Now." Stewards Accreditation Short Course. University of Louisville, November 13, 2000.
- 227) Invited panelist, "Therapeutic Medication and the Racing Horse." The American Association of Equine Practitioners Meeting, San Antonio, Texas. November 2000.
- 228) Invited speaker, Testing Integrity Program, Racetrack Industry Program. Tucson, Arizona. December 2000.
- 229) Therapeutic Medication & Racing Horses: A Short Course: Turfway Park, LLC, Florence, Kentucky. March 20, 2001. Guest Faculty: Dr. Mitzi Fisher, Dr. Thomas Wood; 40 registrants.
- 230) Therapeutic Medication & Racing Horses: A Short Course: Turfway Park, LLC, Florence, Kentucky. March 20, 2001. Guest Faculty: Dr. Mitzi Fisher, Dr. Thomas Wood; 40 registrants.
- 231) The Commission Veterinarian/Equine Medical Director 2001: A Short Course: Kentucky Derby Museum, Louisville, Kentucky. May 1-2, 2001. Extensive guest faculty; 80+registrants/participants, extensive international list of attendees.
- 232) Presentation on the Mare Reproductive Loss Syndrome (MRLS), Keeneland, May 28th, 2001.
- 233) Board Meeting, Thoroughbred Owners of California, Del Mar, California, Saturday, July 21st, 2001.
- 234) With Dr. Levent Dirikolu, presentation on Formulation Strategies for Clazuril Anti-Protozoals, Bayer Animal Health, Kansas City, Kansas, August 10th, 2001.
- 235) "Zero Tolerance – A Myth" presentation to the Board of the National Horsemen's Benevolent and Protective Association, Copley Plaza, Boston, MA, Monday, August 13th, 2001.
- 236) College of Veterinary Medicine, Cordoba, Argentina, August 16th, 17th and 18th – 14 lectures in Continuing Education Short Course, Honorary Faculty Member, College of Veterinary Medicine of the Province of Cordoba.
- 237) Cordoba: History of Equine Medication Control: Medication Control from the early Eighteen-hundreds to today.
- 238) Cordoba: Equine Drugs and Medications: Their absorption, distribution, metabolism and elimination in the horse. Equine Drug Metabolism: an overview of why chemists test horse urine. Equine Drug Testing: an overview.

- 239) Cordoba: An overview of the Pharmacological Actions of Performance altering Drugs effects, including how drugs and medications are used to influence racing performance.
- 240) Cordoba: The "NO Effect Threshold" concept and how "No effect Thresholds" are developed.
- 241) Cordoba: The Narcotic Analgesics and their actions and detection in the Horse.
- 242) Cordoba: Central Stimulant Drugs and their actions and effects.
- 243) Cordoba: Selected Tranquilizers and their actions and effects (class 2 agents).
- 244) Cordoba: Selected Tranquilizers and their actions and effects (class 3 agents).
- 245) Cordoba: Selected Bronchodilators and their actions and effects.
- 246) Cordoba: Selected Non-steroidal Anti-inflammatory Medications and their actions and effects.
- 247) Cordoba: Furosemide and other agents used in the control of Exercise Induced Pulmonary Hemorrhage....
- 248) Cordoba: Anabolics and their actions and effects.
- 249) Cordoba: The rules of the Therapeutic Road.
- 250) Cordoba: Equine Protozoal Myelitis: A New Therapeutic Approach.
- 251) Dubai Grass Sickness Research Group, Dubai, UAR. Presentation on "Toxicokinetics of Cyanide in the Horse", September 22nd, 2001. Dubai Millennium Medal.
- 252) Chicago Hilton, Boehringer Ingelheim Working Group on Torpex. Presentation on Detection Times for Albuterol after Administration by Torpex. October 16th, 2001.
- 253) Keeneland Racecourse. Presentation and Press Conference on "Proposed Policy on Drug and Medication Testing" by the National Horsemen's Benevolent and Protective Association., October 18th, 2001.
- 254) Attendance and Presentations at TIP Meeting and AAEP Medication Summit, Tucson, Arizona, December 2001.
- 255) "Overview of the Proposed Policy on Drug Testing and Medication Control," Las Vegas, Nevada, Tuesday, January 22nd , 2002.
- 256) "An Overview of MRLS", Karakata Sales Complex, Karakata, New Zealand. Sponsored by the University of Auckland, January 26th, 2002.
- 257) "An Overview of Equine Medication Research". Presented to the Board of the Florida HBPA, Gulfstream Park, February 14th , 2002.
- 258) Equine Medication Control Thresholds: An Overview. The Conference Center, Bank of Nova Scotia, Kingston, Jamaica, April 18th, 2002.
- 259) Furosemide and EIPH: An Overview. The Conference Center, Bank of Nova Scotia, Kingston, Jamaica, April 18th, 2002.
- 260) Highest No-Effect Dose for Pharmacological Responses to Acepromazine in the Horse: A Preliminary Communication. Presented to the Research Committee of the Testing Integrity Program, May 1st, 2002.
- 261) "ELISA Testing of Racing Horses: A Regulatory Revolution". Presented for the California Association of Toxicologists, Tempe, Arizona, May 18th, 2002.
- 262) "Town and Gown: Academic 'Spin-offs' in the Bluegrass". Presented to the Lexington Kiwanis Club, Kentucky Inn, Lexington, Kentucky, July 9th, 2002.
- 263) Intellectual Property Presentation with Videotape in Support of a Patent Application on a New Equine Sedative, Analgesic and Tranquilizer. The Patent Office, Washington, D.C., July 11th,

- 2002.
- 264) Presentation to Medication Committee of the National Horsemen's Benevolent and Protective Association, Vancouver, Canada, July 19th, 2002.
 - 265) An overview of current drug issues in racing and comparison of medication rules around the world. Australian Equine Veterinary Association invited lecture, Bain-Fallon Lectures, The Gold Coast, Australia, July 2002.
 - 266) Practical experiences with drug testing in the pre-purchase in the USA and other places. Australian Equine Veterinary Association invited lecture, Bain-Fallon Lectures, The Gold Coast, Australia, July 2002.
 - 267) Factors affecting the excretion time and detection limits for NSAIDs-PBZ, Finadyne, ketoprofen, Meclofenamic acid, meloxicam, etc. Australian Equine Veterinary Association invited lecture, Bain-Fallon Lectures, The Gold Coast, Australia, July 2002.
 - 268) Sensitivity of testing, threshold levels and minimum pharmacologic activity. Australian Equine Veterinary Association invited lecture, Bain-Fallon Lectures, The Gold Coast, Australia, July 2002.
 - 269) Excretion and detection of corticosteroids – triamcinolone, DepoMedrol, Voren depot, dexamethasone, betamethasone, etc. Australian Equine Veterinary Association invited lecture, Bain-Fallon Lectures, The Gold Coast, Australia, July 2002.
 - 270) Anabolic steroids – excretion and detection of oil and water based, injectable and oral. Australian Equine Veterinary Association invited lecture, Bain-Fallon Lectures, The Gold Coast, Australia, July 2002.
 - 271) Sedatives – excretion and detection. Australian Equine Veterinary Association invited lecture, Bain-Fallon Lectures, The Gold Coast, Australia, July 2002.
 - 272) Excretion and detection of medications used to treat respiratory tract disease e.g. clenbuterol, dembrexine, Lasix, etc., nebulized drugs vs systemic. Australian Equine Veterinary Association invited lecture, Bain-Fallon Lectures, The Gold Coast, Australia, July 2002.
 - 273) Look to the future new drugs, new tests and an overview of MRLS research. Australian Equine Veterinary Association invited lecture, Bain-Fallon Lectures, The Gold Coast, Australia, July 2002.
 - 274) Drug and Medication Testing and Its Regulatory Control. Stewards Short Course, Retama Park, San Antonio, Texas, September 17, 2002.
 - 275) Erythrophleum in Racing Horses: Detection and Regulatory Control. Stewards Short Course, Retama Park, San Antonio, Texas, September 17, 2002.
 - 276) Shock Wave Therapy in Racing Horses: Detection and Regulatory Control. Stewards Short Course, Retama Park, San Antonio, Texas, September 17, 2002.
 - 277) Presentation on new Kentucky Medication Rule. Kentucky Racing Commission Meeting, The Red Mile, September 24, 2002.
 - 278) "Drug and Medication Detection in Racing Horses." Kentucky Equine Management Internships, Gluck Equine Research Center, Lexington, Kentucky, October 9, 2002.
 - 279) Drug and Medication Testing and Regulatory Control in Racing Horses. Stewards Short Course, Louisville, Kentucky, November 12, 2002.
 - 280) Town and Gown: Academic "Spin-offs" in the Bluegrass, with a minor in caterpillars. Presented to the Lexington Sunrise Rotary Club, The Lafayette Club, Lexington, Kentucky, November 26, 2002.
 - 281) Phoenix Arizona, National Horsemen's Benevolent and Protective Association, Winter

- Meeting. Presentation on National HBPA Proposed Policy on Drug Testing and Therapeutic Medication. January 26, 2003.
- 282) New Orleans, Louisiana. National Horsemen's Benevolent and Protective Association Winter Convention. January 31, 2004.
- 283) Atlanta, Georgia. Clayton State University Biology Seminar. March 9, 2004.
- 284) Dubai, UAE: 15th International Conference of Racing Analysts and Veterinarians, March 19-26, 2004.
- 285) Portland Oregon: National Horsemen's Benevolent and Protective Association Summer Meeting, July 21st-24th, 2004
- 286) Louisville KY. American Association of Equine Practitioners workshop, Brown Hotel, Louisville, July 25th, 2004.
- 287) Istanbul Turkey, Invited Presentation, International Racehorse Owners Association, August 21st- 24th, 2004.
- 288) Rio Jockey Club, Nov 1st, 2004
- 289) Congreso Mundial Equino Confepaso, November 19-21, 2004.
- 290) January 15-18, 2005 , National Horsemen's Benevolent and Protective Association Winter Meeting, San Antonio, Texas, Presentation on the matter of trace level morphine identifications and regulatory approaches to the same
- 291) Attended Equine Guelph Research Meeting as representative of Ontario Horsemen's Benevolent and Protective Association and as Equine Guelph Grant Reviewer. Feb 15th-16th, 2005
- 292) Visit to Oklahoma City to present to the Oklahoma Horse Racing Commission concerning medication rules. June 16th, 2005
- 293) November 21–23, 2005, Congreso Mundial Equino Confepaso, Fedequinas Congress San Juan, Puerto Rico, Review of Equine Drug Testing, Performance Affecting Substances and Regulation of Therapeutic Medications in Paso Fino Horses
- 294) National Horsemen's Benevolent and Protective Association, Summer Meeting, Toronto, Ontario, Canada, July20-24th 2005. Presentation on the matter of trace level identifications of dexamethasone in racing horses
- 295) Proc 51st Annual Convention American Association of Equine Practitioners Seattle, Washington, Dec3-6th, 2005. Camargo FC, **Tobin T**: "A Review of Environmental Morphine Identifications (EMIs): Worldwide Occurrences and Responses of Authorities". Proc 51st Annual Convention American Association of Equine Practitioners pp 58-64, 2005.
- 296) Presentation at 52nd Annual Convention American Association of Equine Practitioners, December 2006, San Antonio, Texas; presentation, Camargo FC, Hughes C, Lehner AF, Stirling K, **Tobin T**: "Trace" Benzoylcegonine (BZE) Identifications In Post-Race Urines: Probable Sources And Regulatory Significance Of Such Identifications. In Press, Proc 52nd Annual Convention American Association of Equine Practitioners, December 2006, San Antonio, Texas
- 297) Congreso Mundial Equino Confepaso, Fedequinas Congress, Bogota, Colombia, October 2006 .28th and 29th,two platform presentations, "Avoiding Inconsequential "Positives": The Rules of the Regulatory Road for Regulators" **T. Tobin** and K.H. Stirling and "Horsemen Avoiding Positives: The Rules of the Therapeutic Road" **T. Tobin** and K.H. Stirling.
- 298) 16th International Conference of Racing Analysts and Veterinarians, Tokyo, Japan, October 21-27th, 2006, platform presentation "Synthesis of deuterated analytical standards:

- Ketoprofen-d3 and Flunixin-d3. Proceedings of the 16th International Conference of Racing Analysts and Veterinarians, Tokyo, Japan.
- 299) August 15th, 2006, Thoroughbred Owners of California (TOC), Annual Medication Meeting, invited presentation, donation in support of Gluck research program, presentation on deriving thresholds for therapeutic medications and visit with UC Davis faculty and CHRB and TOC staff.
 - 300) National Horsemen's Benevolent and Protective Association, Summer Meeting, Minneapolis, July 13th-14th 2006, Invited presentation on the "Brass Hat" matter and the need for concentrations thresholds for therapeutic medications
 - 301) American Endurance Riders Annual Conference (AERC), San Antonio Texas, February 24-25, 2006. Crowne Plaza Riverwalk, San Antonio "Thomas Tobin, University of Kentucky's Gluck Equine Research C
 - 302) Visit to Abu Dhabi, personal guest of HH Sheik Sultan, of the Abu Dhabi Royal Family; January 16-19th 2006. Review of Endurance Racing and discussions and presentations concerning same and invitation to support UK research Program
 - 303) National Horsemen's Benevolent and Protective Association Winter Meeting, Tampa Florida, January 13th-14th 2006. Presentation on the matter of trace level benzoylecgonine detections, with particular reference to recent matters in Indiana and West Virginia.
 - 304) Orlando Florida, December 1-4, 2007. Attendance at Orlando AAEP meeting and presentation of paper on regulatory thresholds for caffeine and related substances.
 - 305) Buenos Aires, Montevideo, Sao Paulo, November 2-13th 2007. Presentations in Buenos Aires, lecture series the Uruguayan Veterinary Medical Association November 8-9th, 10 lectures covering various aspects of equine drug testing and therapeutic medication
 - 306) Sao Paulo, Nov 10-12th 2007. Guest of Sao Paulo, Jockey Club, review of Sao Paulo, equine drug testing laboratory, race named in honor of and visit with Senior Sao Paulo Jockey Club Member Baroness Margarida Polak Lara
 - 307) Tokyo Japan 16th October 21-26TH 2007. Attended the International Conference of Racing Analysts and Veterinarians, and gave a platform presentation on Certified Reference Standards
 - 308) Bogotá Colombia, October 28-29th 2007. Attended Fedequinas Association Biannual International Congress and gave two Invited platform presentations on therapeutic medication regulation
 - 309) Williamsburg, Virginia July 17-20, 2007. Attended the summer National Horsemen's Benevolent and Protective Association meeting and gave a platform presentation to the meeting
 - 310) San Diego, California, December 4-6, 2008. Attendance at AAEP at San Diego and presentation of paper on regulatory thresholds for therapeutic medications
 - 311) Antalya, Turkey, October 11- 17, 2008. Attended 17th international conference of Racing Analysts and Veterinarians, one platform presentation on tramadol in horses, and three Coauthored presentations
 - 312) Toronto Ontario, September 23-24, 2008. Presentation to Ontario to racing commission group on thresholds for morphine in post-race samples, supported by the Ontario HBPA.
 - 313) West Chester, Pennsylvania, August 4-5, 2008. Visit with Pennsylvania Equine Drug Testing and Research laboratory and the University of Pennsylvania at Kennett Square as part of a certified reference standards Project

- 314) Hershey, Pennsylvania, July 18-20, 2008. Attendance at summer meeting of the National Horsemen's Benevolent and Protective Association, presentation on the 2008 iteration of the National HBPA Proposed Policy for Drug Testing and Therapeutic Medication Regulation
- 315) Davis, California, April 27-30, 2008. Attendance at Racing & Medication Testing Consortium workshop on Anabolic Steroid Analysis, on behalf of the National Horsemen's Benevolent and Protective Association
- 316) Lexington, Kentucky, April 17, 2008. Attendance at Fourth Kentucky Innovation and Enterprise Conference and poster presentation
- 317) New Orleans, Louisiana, January 24-27, 2009. Attendance and presentation on anabolic steroid testing at the National Horsemen's Benevolent and Protective Association Winter Conference .
- 318) Shepherdstown, WVA . (2009) Oral presentation at National Horsemen's Benevolent and Protective Association Summer Convention , Thresholds: How we got to where we are, the Indiana project, and where we are heading
- 319) Dublin, Ireland November 7th (2009) Oral presentation at University College. Equine Medication Regulation: 1800 to November 7th, 2009.
- 320) Dublin, Ireland (2009) Oral presentation at Irish Veterinary Association Equine Division. The Mare Reproductive Loss Syndrome in Kentucky, 2001/2002
- 321) Tucson, AZ (2009) Oral presentation at National Horsemen's Benevolent and Protective Association Winter Meeting, Anabolic Steroid Regulation: An "OK" Proposal
- 322) Queenstown, New Zealand , March 7-13 (2010) Oral presentation at 18th International Conference of Racing Analysts and Veterinarians "Certified Reference Standards and Stable Isotope Internal Standards for Equine Therapeutic Medication Regulation"
- 323) Queens Town, New Zealand, March 7-13 (2010) Oral presentation at 18th International Conference of Racing Analysts and Veterinarians "The role of expert testimony in adversarial proceedings."
- 324) Queens Town, New Zealand , March 7-13 (2010) Oral presentation at 18th International Conference of Racing Analysts and Veterinarians "Experiences as an Expert: Educating People While Under Oath, 25 Years since Hong Kong"
- 325) Minneapolis, Minnesota July 23rd (2010) Presentation at National HBPA Summer meeting "Fatal Musculoskeletal Injury Rates, Thresholds For Phenylbutazone And Pre-Race Examinations: A Preliminary Report"
- 326) Hot Springs, Arkansas, March 17th, 2011. The McKinsey Report: 20 Years Later. Presentation to the National Horsemen's Benevolent and Protective Association Winter Meeting.
- 327) Seattle Washington. Thomas **Tobin** To Race or not to Race on Lasix: The Ethical Dilemma: Presentation to the National Horsemen's Benevolent and Protective Association Summer Meeting, Seattle, Washington, Friday, July 22nd, 20211.
- 328) Racing Medication and Testing Consortium/ Association of Racing Commissioners International Medication Advisory Committee Meeting, Baltimore, Maryland, January 9th, 2012.
- 329) Fort Lauderdale, Florida, Lasix Revisited: The American Horsemen's Story: National Horsemen's Benevolent and Protective Association Winter Meeting Saturday, January 14, 2012.
- 330) Summer meeting, June 28

- th , National Horsemen's Benevolent and Protective Association [NHBPA], Des Moines, Iowa.
- 331) 1/ Presentation "Furosemide: lack of effect on numbers of racing starts." Kimberly Brewer and **Thomas Tobin**.
 - 332) Buenos Aires Presentations for the Organización Sudamericana de Fomento del Sangre Pura de Carrera Buenos Aires at San Isidro Racetrack, Buenos Aires, Argentina
 - 333) Buenos Aires Monday July 2nd,
 - 334) ,1.1/ "Trace level identifications of human therapeutic substances transferring from human to horses; an overview of the current situation" **Thomas Tobin** and Kimberly Brewer
 - 335) 1.2/Screening methods/ELISA Tests: **Thomas Tobin** and Kimberly Brewer
 - 336) Buenos Aires 1.3/ Thresholds for therapeutic medications: **Thomas Tobin** and Kimberly Brewer
 - 337) Buenos Aires 1.4/ Environmental substances/pollution: **Thomas Tobin** and Kimberly Brewer
 - 338) Buenos Aires 1.5/ Factors which affect withdrawal times of therapeutic drugs used in sports horses: **Thomas Tobin** and Kimberly Brewer
 - 339) Buenos Aires Tuesday, July 3rd, 2012 Buenos Aires **Thomas Tobin** and Kimberly Brewer
 - 340) Buenos Aires 2.1/ Troublesome drugs + those which most usually give positive results. which are they, and why do they test positive? **Thomas Tobin** and Kimberly Brewer
 - 341) Buenos Aires 2.2: Avoiding unnecessary positive results. **Thomas Tobin** and Kimberly Brewer
 - 342) Buenos Aires 2.3: Clarifying definitions, so that veterinarians who work either at private practice or doping control laboratories may share the same meanings when it comes to specific language. **Thomas Tobin** and Kimberly Brewer
 - 343) Buenos Aires 2.4: / Animal welfare + increase of its importance at a world-wide basis + relationship with thoroughbreds: **Thomas Tobin** and Kimberly Brewer
 - 344) Soring KH, Brewer K, Kind AJ and Tobin (2012) FOREIGN SUBSTANCES REPORTED IN IOWA RACING, 2001 – 2011: A REVIEW AND ANALYSIS, Presented at the 19th International Conference of Racing Analysts and Veterinarians, Philadelphia Pennsylvania, September 15-22, 2012. [UK #400, Ag. Experiment Station Number, 12-14-098]
 - 345) Kind AJ, Soring K, JD, Brewer K , Eisenberg, R., Hughes CG, Hartmann-Fishbach, P and **Tobin T** (2012) Cathinone and Related "Bath Salt" Substances – Detection in Equine Urine and Potential Sources, Presented at the 19th International Conference of Racing Analysts and Veterinarians, University of Pennsylvania, Philadelphia, Pennsylvania, September 2012. [UK401, Ag. Experiment Station Number, 12-14-099]
 - 346) Gutierrez J, Eisenberg R, Ferguson EM, Hughes C and **Tobin T** (2012) "Synthesis of myo-inositol trispyrophosphate (ITPP) for use as an analytical standard" Presented at the 19th International Conference of Racing Analysts and Veterinarians, Philadelphia, Pennsylvania, September 15-22, 2012. [UK 398 Ag. Experiment Station Number, 12-14-100] .
 - 347) Kudrimoti S, Gutierrez J, Eisenberg R, Ferguson EM, Hughes C and **Tobin T** (2012) Synthesis of 3-Hydroxy-mepivacaine-*d*₃ as an Internal Standard for Equine Medication Regulation Presented at the 19th International Conference of Racing Analysts and Veterinarians, University of Pennsylvania, Philadelphia, Pennsylvania, September 2012. p128-135. [UK 402 Ag. Experiment Station Number, 12-14-101]
 - 348) Chairperson, Session on the "Detection of New Drugs" 19th International Conference of

- Racing Analysts and Veterinarians, University of Pennsylvania, Philadelphia, Pennsylvania, September 2012
- 349) Scientific Conference, Pittsburgh, Pennsylvania, Friday, September 28th 2012 with Dubai Veterinarians representing Sheik Mohammed bin Rashid al Maktoum.
 - 350) Baltimore Racing Medication and Testing Consortium Scientific Advisory Committee Meeting, Baltimore, Maryland, Monday, October 22 and Tuesday October 23rd, Saturday, February 23, 2013
 - 351) Scientific Conference, Dubai UAE, February 14th, 2013 with Dubai Veterinarians representing Sheik Mohammed bin Rashid al Maktoum.
 - 352) Scientific Conference, Dubai UAE, Wednesday, July 3rd to Monday, July 8th and three visits to the Dubai MER Laboratory.
 - 353) National HBPA Summer Meeting, Mystic Lake Casino, Shakopee, Wisconsin, presentation entitled Clenbuterol: Unusual Aspects of its Urinary Detection/Excretion.
 - 354) Denver, Colorado, September 17th, attendance and brief presentation to the Racing Medication and Testing Consortium,[RMTTC], Denver, Colorado, meeting attended on behalf of the National HBPA.
 - 355) December 1-15th 2013: Travel to Dubai, United Arab Emirates and presentation to Dubai authorities on aspects of Equine physiological optimization and medication regulation.
 - 356) National HBPA Winter Meeting, Pasadena, California, Saturday January 25th, **Thomas Tobin**, Kimberly Brewer and Charlie Hughes “Scientifically validated regulatory thresholds for use in racing regulation” Presentations and associated panel discussion.
 - 357) Kentucky Association of Equine Practitioners meeting January 28th, 2014 “Scientifically defined thresholds/ withdrawal time guidelines for racing regulation” by **Thomas Tobin**, Kimberly Brewer and Charlie G. Hughes Red Mile, Lexington, KY, 40511, Presentations and associated panel discussion.
 - 358) Darley Flying Start Student Seminar: “Furosemide and EIPH: Efficacy and Controversy: The American Horsemen’s Story”: Friday, January 31st, 2014, at the Maxwell H. Gluck Equine Research Center
 - 359) Third Annual Univ. of Kentucky Equine Showcase, February 5th, **Thomas Tobin**, Kimberly Brewer and Charlie Hughes “Where did that positive come from? Let me count the ways” Four Points Sheraton, 1938 Stanton Way, Lexington, KY 40511. Presentations and associated panel discussion
 - 360) 5) Racing Medication and Testing Consortium Board Meeting, Gulfstream Park, Florida, March 17th, 2014, attendance as alternate National Horsemen’s Benevolent and Protective Association and brief presentation to the Racing Medication and Testing Consortium Board meeting attended on behalf of the National HBPA.
 - 361) National HBPA Summer Meeting, Oklahoma City, Saturday, August 16th, 2014 , **Thomas Tobin**, Kimberly Brewer and Charlie Hughes “Cobalt, Lasix, Thresholds and Withdrawal Times; An Overview” Presentation to Summer Meeting audience as part of a panel discussion on Cobalt and Lasix and associated panel discussion.
 - 362) S. Kudrimoti¹, R. Eisenberg², G. A. Maylin³, Charlie Hughes¹, and **T. Tobin**^{1*} Synthesis and characterization of 4-hydroxyxylazine and 4-hydroxyxylazine-d₆ standards for use in xylazine regulation in competition horses: Presented at the 20th International Conference of Racing Analysts and Veterinarians, Sugar Beach, Mauritius, September 2014.
 - 363) R. Eisenberg

- ¹, S. Kudrimoti², C. G. Hughes², G. A. Maylin³, and **T. Tobin**^{2*} Dihydromethylprednisone, an isomeric metabolite of methylprednisolone: synthesis of an analytical standard. Presented at the 20th International Conference of Racing Analysts and Veterinarians, Sugar Beach, Mauritius, September 2014.
- 364) S. Kudrimoti¹, R. Eisenberg², G. A. Maylin³, C.G. Hughes¹ and **T. Tobin**^{1*} 20-Dihydroprednisone: Synthesis of an isomeric equine metabolite of prednisolone for use as an analytical standard; Presented at the 20th International Conference of Racing Analysts and Veterinarians, Sugar beach, Mauritius, September 2014.
- 365) K. Brewer¹, C. R. Harden², C.G. Hughes³ and **T. Tobin**³ "Shipping-in," a risk factor associated with fatal musculoskeletal racing injuries: Presented at the 20th International Conference of Racing Analysts and Veterinarians, Sugar Beach, Mauritius, September 2014.
- 366) A.M. Briceño^{1*}, A.M. Sanchez¹, R.H. Galley², K. Brewer³, C. Hughes⁴, **T. Tobin**⁴ Increased Incidence of Sudden Death Associated with Exercise Induced Pulmonary Hemorrhage (EIPH) in Horses Racing at Higher Altitude in Venezuela: Presented at the 20th International Conference of Racing Analysts and Veterinarians, Sugar beach, Mauritius, September 2014.
- 367) Fenger, C. K.^a, **Tobin, Ta**^b, Casey, P. J.^c, Roualdes, E.^D, Langemeier, J. L.^a, and Haines, D.M. Supplementation Improves Earnings, Performance and Recovery in Racing Thoroughbreds Bovine Colostrum Presented at the 20th International Conference of Racing Analysts and Veterinarians, Sugar Beach, Mauritius, September 2014.
- 368) RMTTC Board of Directors Meeting, Canterbury Downs, Oct. 13th 2014: attendance as alternate National Horsemen's Benevolent and Protective Association and brief presentation to the Racing Medication and Testing Consortium,[RMTTC], Minneapolis Minnesota, meeting attended on behalf of the National HBPA.
- 369) Presentation to Azam Syed, Pharmacy in Charge, Zabeel Palace, Dubai and visits to and presentations to the Marmoom Equine Research Center, Dubai UAE, December 3-14th 2014.
- 370) National HBPA Winter meeting, Carefree, Arizona, Thursday, February 7th, 2015 **Thomas Tobin**, Kimberly Brewer and Charlie Hughes "Cobalt, Lasix, Thresholds and Withdrawal Times; An Overview" Presentation to HBPA Winter Meeting audience as part of a panel discussion on Cobalt and Lasix and associated panel discussion.
- 371) Mumbai, India, Royal Western India Turf Club, Mumbai, Feb. 27th, 2015 "Where did that positive come from? Highly sensitive testing: Let me count the ways", **Thomas Tobin**, Kimberly Brewer, Kent Stirling and Charlie Hughes. Travel arrangements made for live presentation at RWITC seminar but visa problems restricted presentation to Skype video format Feb. 27th, 2015.
- 372) Presentation to Azam Syed, Pharmacy in Charge, Zabeel Palace, Dubai and visits and presentations to the Marmoom Equine Research Center, Dubai UAE, March 26th, 2015.
- 373) Association of Racing Commissioners International, Scientific Advisory Committee Meeting. Regulatory thresholds for Cobalt and Gamma Amino Butyric Acid [GABA] Committee meeting, **T. Tobin** and ARCI SAC Committee Members, Tuesday April 21st presentation on GABA to ARCI 10 AM Thursday April 25th, 2015 Tampa, Florida.
- 374) North West Naturopathic Physicians Convention, Seattle Washington, May 2-3rd, 21015 Patrick J. Casey, DM Gerbracht, ZJ Champion, RL Decker, R., Waling and **T. Tobin**; "The Role of Chaperone Proteins in Ageing and Onset of Disease in Modern Medicine", Presentation and Publication,
- 375) Presentation to the Union Nacional de Asociaciones Ganaderas Colombianas- UNAGA, Bogota

Colombia “ T Tobin: Where did that positive come from: Highly sensitive testing; Let me count the ways” Wednesday July 15th, 2015.

- 376) National HBPA Summer Meeting, Denver, Colorado, Saturday, August 8th, 2015: Glenys K. Noble, Kimberly Brewer, MaryAnn O’Connell, K. H. Stirling, A. Morales Briceno, J. Machin, and C. Hughes. **T. Tobin**: “Revisiting the Racing Medication and Testing Consortium [RMTC] Xylazine Guidelines, with Australian Assistance; Presentation to the Summer 2015 Medication Forum of the National Horsemen’s Benevolent and Protective Association Meeting, Denver, Colorado, Saturday, August 8th, 2015.
- 377) K. Brewer, J. Machin, K. Stirling, Abelardo Morales Briceno, C. Hughes and **T. Tobin**. Canadian Environmental Methamphetamines Identifications Linked to a Horse Trailer: Presentation to the Summer 2015 Medication Forum of the National Horsemen’s Benevolent and Protective Association Meeting, Denver, Colorado, Saturday, August 8th, 2015.
- 378) A. Morales, A. Méndez, M. Armas, C. Guarino, M. Moya, E. Suniaga, K. Brewer, **T. Tobin**. 2.2 Título del Trabajo: Efecto de la terapéutica combinada Levotiroxina-Clembuterol en ratones Balb/c y ratas Sprague-Dawley. 2.3 Nombre del Congreso (entidad patrocinante): 76 Aniversario del Instituto Nacional de Higiene Rafael Rangel y 37 Jornadas Científicas 2.4 Fecha: Noviembre, 2014. 2.5 Ciudad y País: Caracas, Venezuela.
- 379) A. Morales, A. Méndez, M. Armas, C. Guarino, M. Moya, E. Suniaga, K. Brewer, **T. Tobin**. 3.2 Título del Trabajo: Efecto de la terapéutica combinada Levotiroxina-Clembuterol sobre la arteria aorta en ratones Balb/c. 3.3 Nombre del Congreso (entidad patrocinante): 76 Aniversario del Instituto Nacional de Higiene Rafael Rangel y 37 Jornadas Científicas 3.4 Fecha: Noviembre, 2014. 3.5 Ciudad y País: Caracas, Venezuela.
- 380) A. Morales, A. Mendez, M. Armas, C. Guarino, M. Moya, E. Suniaga, K. Brewer, **T. Tobin**. 4.2 Título del Trabajo: Efecto de la levotiroxina-clembuterol sobre la arteria aorta en ratas Sprague Dawley. 4.3 Nombre del Congreso (entidad patrocinante): XXIII Jornadas Científicas Dr. Francisco de Venanzi, Instituto de Medicina Experimental Dr. José Gregorio Hernández. 4.4 Fecha: Noviembre, 2014. 4.5 Ciudad y País: Caracas, Venezuela.
- 381) Presentation to Azam Syed, Pharmacy in Charge, Zabeel Palace, Dubai and visits and presentations to the Marmoom Equine Research Center, Dubai UAE, December 5th 2015.
- 382) **T. Tobin**, Invited presentation to the Open Meeting of the International Group of Specialist Racing Veterinarians [IGSRV] Sha Tin, Hong Kong, December 14th, 2015 on the matter of “*Managing a rash of ‘positives’ that result from a known source(s) of contamination through no fault of the trainer/owner? Is there a way to pragmatically manage positives that result from inadvertent contamination that could reasonably be expected not to have an influence on a horses’ performance?*” Abbreviated presentation because of IGSRV concerns that the Royal Western India Turf Club [RWITC] hearing on such a matter had not finalized.
- 383) **Tobin T** Invited presentation to the National Horsemen’s Benevolent and Protective Association, Winter Convention, Clearwater, Florida, “Inconsequential Trace Level Identifications of Environmental Substances” K. H. Stirling, K. Brewer, MaryAnn O’Connell, A. Morales Briceno, J. Machin and **T. Tobin**. February 3-6-7th, 2016.
- 384) **Tobin T** and Morales A, DETECCION DE SUBSTANCIAS PROHIBIDAS Y SUS CONSECUENCIAS PARA INDUSTRIA HIPICA A.Morales¹, A. Méndez¹, K. Brewer², C. Hughes³, **T. Tobin**, Congreso de Veterinaria y Ciencia y Tecnología de los Alimentos Cordoba, Spain, February 12th, 2016
- 385) CATHINONE: A Human Recreational Substance Identified in Post-Race Urines Presentation to Azam

Syed, Pharmacy in Charge, Zabeel Palace, Dubai and The A Team, Jake Machin, Kimberly Brewer, Sucheta Kudrimoti, Kent H. Stirling, Rodney Eisenberg and **Thomas Tobin** Marmoom Equine Research Center, Marmoom, Dubai UAE, Wednesday, April 6th 2016.

- 386) "EQUINE MEDICATION TESTING: 100 YEAR AND STILL LEARNING" **Thomas Tobin**, ShivaKumar Gudlawar, Jake Machin, Kimberly Brewer, Sucheta Kudrimoti,, Rodney Eisenberg and Kent H. Stirling The Maxwell H. Gluck Equine Research Center, University of Kentucky, The Marmoom Equine Research Center, Marmoom, Dubai, UAE, The Florida Horsemen's Benevolent and Protective Association; Presented to The Anti-Doping Laboratory Qatar [ADLQ] Annual Meeting entitled "ANTI-DOPING IN HUMANS AND ANIMALS: PARALLELS AND DIVERGENCES" in conjunction with the World Anti-Doping Association [WADA] at the Doha Marriott Hotel, Qatar, Wednesday, June 1th 2016.
- 387) INVITED CHAIR, SYMPOSIUM CLOSING SESSION PANEL DISCUSSION, The Anti-Doping Laboratory Qatar [ADLQ] Annual Meeting in conjunction with the World Anti-Doping Association [WADA] entitled "ANTI-DOPING IN HUMANS AND ANIMALS: PARALLELS AND DIVERGENCES" at the Doha Marriott Hotel, Qatar, Wednesday, June 1st, 2016.
- 388) Jake Machin, Kimberly Brewer, **Thomas Tobin**, "THE MATTER OF DURING OR POST COLLECTION CONTAMINATION: AN OVERVIEW OF SOME CASES" National Horsemen's Benevolent and Protective Association, Summer Convention, Vancouver, Canada, July 16th 2016.
- 389) Kevin Kersh, DVM, DACVS; Scott R. McClure, DVM, PhD, DACVS, DACVSMR; Jake Machin, MS; Levent Dirikolu, PhD; Brad Brown, DVM; Clara Fenger, DVM, PhD, DACVIM; George Maylin, DVM, PhD; Edward Roualdes, PhD; **Thomas Tobin**, MRCVS, PhD, DABT Determining viable withdrawal times for dexamethasone in horses in a racing environment, where self-contamination is likely: Clinical Guidelines for application in a regulatory environment. Presentation at the 21st International Conference of Racing Analysts and Veterinarians, Montevideo, Uruguay, October 15-22nd, 2016.
- 390) Abelardo Morales Briceño¹, Aniceto Mendez Sanchez¹, Kimberly Brewer², **Thomas Tobin**³ FOREIGN SUBSTANCES IDENTIFIED POST RACE IN THOROUGHBREDS AT LA RINCONADA RACETRACK, CARACAS VENEZUELA, A CLINICAL PATHOLOGICAL AND TOXICOLOGICAL STUDY. Presentation at the 21st International Conference of Racing Analysts and Veterinarians, Montevideo, Uruguay, October 15-22nd, 2016.
- 391) Abelardo Morales Briceño^{1,2}, Antonio Lamprea Garrido², Alicia Garcia Hermoso², Aniceto Mendez Sanchez¹, Kimberly Brewer³, **Thomas Tobin**⁵ EPISTAXIS IN UNMEDICATED EQUINE DURING INTENSE EXERCISE IN ALMONTE-HUELVA-SPAIN. A PRELIMINARY REPORT: Presentation at the 21st International Conference of Racing Analysts and Veterinarians, Montevideo, Uruguay, October 15-22nd, 2016.
- 392) **Thomas Tobin*** ¹ Jake Machin¹, Sucheta Kudrimoti¹ and Rodney Eisenberg² Synthesis and Certification of a Deuterated Internal Standard for Xylazine: Presentation at the 21st International Conference of Racing Analysts and Veterinarians, Montevideo, Uruguay, October 15-22nd, 2016.
- 393) **Thomas Tobin**, Presentation to a Joint Committee of the Louisiana Veterinary Medical Association Equine Group and the Louisiana State Racing Commission, "Optimal approaches to Regulation of Therapeutic Medications, Endogenous, Dietary and Environmental Substances" Sunday November 20th, 2016, Fairgrounds Racetrack, New Orleans, Louisiana.
- 394) **Thomas Tobin** and colleagues, January 22, 2017: 1:00 p.m. - 5:00 p.m. the TEX CAUTHEN MEMORIAL SEMINAR with Dr. David Horohov, Doug, Kerry & Steve Cauthen, Mr. Hans

Albrecht, Mr. Steve Simon, Dr. Simon Curtis, FWCF, Mr. Michael Savoldi, Dr. Pedro De Pedro and Dr. **Thomas Tobin**, The Maxwell H. Gluck Equine Research Center, University of Kentucky, Lexington, KY 40546-0099. The entire seminar was videotaped and made available on The Maxwell H. Gluck Equine Research Center web site and republished by the American Farriers Association Communications Committee on their internet newsletter / eblast.

- 395) **Thomas Tobin**, Friday February 3rd 2107, Seminar and round- table discussion on “Hair testing as a regulatory procedure in racing horses”, invited to participate by the Oklahoma Horsemen’s Benevolent and Protective Association, industry wide panel organized by the Oklahoma Quarter Horse Racing Association, Heritage Place, Oklahoma City, Oklahoma.
- 396) **Thomas Tobin**: Educational presentation on behalf of the New Jersey Harness Horsemen’s Association on the matter of appropriate blood testing sampling procedures for the regulatory control of Furosemide as outlined in the “Furosemide in the Horse: its actions effects and regulatory control” A Testing Integrity Program Seminar held at The New Orleans Hilton Riverside, March 1 1998. Wind Publications, PO Box 54248, Lexington Kentucky, 40524 (wind@wind.org)
- 397) **Thomas Tobin**, Jake Machin, Kimberly Brewer, Clara Fenger and **Thomas Tobin**. EQUINE HAIR TESTING WITH REFERENCE TO POST-RACE AND OUT OF COMPETITION TESTING: AN OVERVIEW; Presentation to the National Horsemen’s Benevolent and Protective Association Annual Convention, Las Vegas, Nevada, March 8-10th, 2017.
- 398) Presentations to Mr. Azam Syed, Pharmacy in Charge, Zabeel Palace, Dubai, at The Buhoot Equine Research Center, Marmoon, Dubai, UAE, March 22-April 5th 2017 on Environmental Substances in Racing Chemistry and attendance at the 2017 Dubai World Cup as a guest of His Highness Sheik Mohammed bin Rashid al Maktoum, Vice President and Prime Minister of the United Arab Emirates and Emir of Dubai.
- 399) Educational presentation on behalf of Charles Town HBPA, May 12th 2017, The Charles Town Naproxen Identifications: Regional Historic Regulatory Thresholds and an Interim Screening Limit of Detection, Submitted by The National Horsemen’s Benevolent and Protective Association, Lexington, Kentucky and Ms. Maria Catignani, The Charles Town Horsemen’s Benevolent and Protective Association, Charles Town, West Virginia, and Mr. Jake Machin, BSc, and **Thomas Tobin**, MVB, MRCVS, PhD, Rm128c, The Maxwell H. Gluck Equine Research Center, 1400 Nicholasville Rd, University of Kentucky, Lexington, Kentucky 40546-0099, and Dr. Kimberly Brewer DVM, MSc, 1711 Lakefield North Court, Wellington, Florida 33414.
- 400) Jake Machin, Kimberly Brewer, Kent H. Stirling and **Thomas Tobin**, Equine Drug Testing: Dealing with Caffeine and Theophylline: Caffeine a Classic Environmental Substance; AGROEXPO, Bogota, Colombia, Invited presentation on behalf of ASOARABES UNAGA on environmental substance regulation in performance horses, July 19th at AGROEXPO 2017, Bogota, Colombia.
- 401) Jake Machin, Kimberly Brewer, Kent H. Stirling and **Thomas Tobin**, Equine Drug Testing: Dealing with Caffeine and Theophylline, Caffeine a Classic Environmental Substance; Fedequinas Headquarters, Bogota, Colombia, Invited presentation on behalf of ASOARABES UNAGA on medication regulation in performance horses, July 18th at Fedequinas Headquarters, Bogota, Colombia.
- 402) Jake Machin, Kimberly Brewer, Maria Catignani, MaryAnn O’Connell and **Thomas Tobin** “GLUCK EQUINE RESEARCH PROGRAM ACTIVITY, 2016-DATE, AN OVERVIEW OF

SOME ENVIRONMENTAL SUBSTANCE CASES” presented to the National Horsemen’s Benevolent and Protective Association Executive Committee Meeting, Louisville, Louisville, Kentucky, June 30th, 2017

- 403) K. H. Stirling, Clara Fenger, Prof. Utpal S. Tatu, K. Brewer, MaryAnn O’Connell, A. Morales Briceno, J. Machin and **T. Tobin**’ “Inconsequential Trace Level Identifications of “Environmental” Substances” Presentation on September 26th, 2017 to the Ohio State Racing Commission, Columbus, Ohio.
- 404) **Tobin T**: Ppresentation to the Council of Arbitration for Sport, Lausanne, Switzerland, November 10th, 2017 on the matter of “Trace Level Identifications of Urinary Ractopamine in Show Horses” on behalf of Cargill Inc.
- 405) **Thomas Tobin** and colleagues, January 21, 2018: 9:30 a.m. - 5:00 p.m. the SECOND TEX CAUTHEN MEMORIAL SEMINAR with Dr. David Horohov, Doug, Kerry & Steve Cauthen, Mr. Hans Albrecht, Dr. Ric Redden, Dr. Raul Bras, Mr. Michael Savoldi Mr. Steve Simon, Dr. Pedro De Pedro and Dr. Thomas **Tobin**, The Maxwell H. Gluck Equine Research Center, University of Kentucky, Lexington, KY 40546-0099. The entire seminar was videotaped and made available on The Maxwell H. Gluck Equine Research Center web site and republished by the American Farriers Association Communications Committee on their internet newsletter / eblast.
- 406) W.C. Duer¹, J. Machin², G. Maylin³, C.K. Fenger⁴, and **T. Tobin**^{2*} APPLICATION OF ROBUST REGRESSION ON ORDER STATISTICS AND DISTRIBUTION FREE STATISTICS IN THRESHOLD DETERMINATIONS FOR THERAPEUTIC MEDICATIONS, USING METHYLPREDNISOLONE AS AN EXAMPLE: Presentation to the 22nd International Conference of Racing Analysts and Veterinarians, Dubai, United Arab Emirates, Monday, March 5th, 2018.
- 407) J. Machin¹, G.A. Maylin², C.K. Fenger³, R. Hunt⁴, K.E. Bladon³, O. Sacoulos³, & T.Tobin^{1*}: PILOT PHARMACOKINETIC STUDIES USING A HIGHEST NO EFFECT DOSE (HNED) AND A FULL CLINICAL DOSE OF MEPIVACAINE IN THOROUGHBRED HORSES; Presentation to the 22nd International Conference of Racing Analysts and Veterinarians, Dubai, United Arab Emirates, Friday March 9th, 2018.
- 408) Jake Machin, Maria Catignanai, Kimberly Brewer, Clara A Fenger, G A Maylin and **Thomas Tobin**. “Walls of Stalls” Substances; ARCI Substances in Charles Town Ship-In Stalls; Presentation for The Kent Stirling Memorial Scientific Panel: Environmental Transfer, Cause for Concern in Racehorses: Inadvertent Exposure to Recreational and Prescription Medications, March 16th, 2108, National Horsemen’s Benevolent and Protective Association Convention New Orleans, Louisiana.
- 409) Jake Machin, Maria Catignanai, Kimberly Brewer, Clara A Fenger, G A Maylin and **Thomas Tobin**. “NAPROXEN, A MAJOR EQUINE ENVIRONMENTAL SUBSTANCE: Presentation for The Kent Stirling Memorial Scientific Panel: Environmental Transfer, Cause for Concern in Racehorses: Inadvertent Exposure to Recreational and Prescription Medications, March 16th, 2108, National Horsemen’s Benevolent and Protective Association Convention New Orleans, Louisiana.
- 410) Jake Machin, Catignanai, Kimberly Brewer, Clara A Tramadol: A Human Prescription Med Occasionally Identified in Post-Race Urines”, Presentation for The Kent Stirling Memorial Scientific Panel: Environmental Transfer, Cause For Concern In Racehorses: Inadvertent Exposure to Recreational and Prescription Medications, March 16th, 2108, National Horsemen’s Benevolent and Protective Association Convention New Orleans, Louisiana.

- 411) **Tobin T** and Shults, T “Understanding the Legal Framework and Requirements of “Forensic” Drug Testing: Due-Process, Legal Defensibility, and Risk-Management in Human and Equine Testing Theodore F. Shults, JD, MS, Chairman, American Association of Medical Review Officers and **Thomas Tobin**, MVB, PhD, The Maxwell H. Gluck Equine Research Center, University of Kentucky, THE 33RD ANNUAL NATIONAL CONFERENCE ON EQUINE LAW, WEDNESDAY MAY 2ND 1:10 pm, The Keeneland Racecourse Sales Pavilion, Lexington, Kentucky.
- 412) **Thomas Tobin**, Jake Machin, Kimberly Brewer and Ted Shults, WHERE DID THIS POSITIVE COME FROM? “MOLECULAR MISADVENTURES”, LET US COUNT THE WAYS! The Maxwell H. Gluck Equine Research Center, University of Kentucky, THE 33RD ANNUAL NATIONAL CONFERENCE ON EQUINE LAW, WEDNESDAY MAY 2ND The Keeneland Racecourse Sales Pavilion, Lexington, Kentucky
- 413) Jacob Machin¹, Sucheta Kudrimoti¹, Rod Eisenberg², Clara Fenger³, Petra Hartmann⁴, George Maylin⁵, **Thomas Tobin**^{1*} and Theodore Shults⁶ Synthesis, Characterization and Certification of Barbarin, a Possible Botanical Source of Aminorex Identifications. For presentation and publication, Society of Forensic Toxicology Annual Meeting, Minneapolis, MN, October 10-12, 2018.
- 414) Presentation submitted at request of National Horsemen’s Benevolent and Protective Association. **Tobin, T** “Lasix PROTECTS the Lungs of the Racing Horse and in so doing PROTECTS the Horse and also the Jockey: An Analysis and Opinions”. Expert opinion and supporting documents and Tobin professional vitae submitted Wednesday June 20th, 2018 to Chairman Latta and Ranking Member Schakowsky Energy and Commerce Subcommittee on Digital Commerce and Consumer Protection for consideration at the June 22, 2018 hearing on H.R.2651, the Horseracing Integrity Act of 2017.
- 415) V. Morales, K. Yvorchuk, **T. Tobin**, A. Conan, P. De Pedro The prevalence of Exercise-Induced Pulmonary Hemorrhage in high goal polo horses. National Veterinary Scholars Symposium, August 2-5, 2018, Texas A&M, College Station Texas.
- 416) Presentation at invitation of the Washington Horsemen’s Benevolent and Protective Association to the Washington Horse Racing Stewards concerning two unusual time and place linked Xylazine identifications in two otherwise unrelated horses, Friday August 30th, 2018, Emerald Downs, Washington.
- 417) Organizing and scheduled presentations on “Environmental Substances in Racing Regulation”, afternoon session at 5th Annual Meeting and Symposium of the North American Association of Racetrack Veterinarians [NAARV] Griffin Gate, Lexington, Kentucky, November 5-6th, 2018, set for afternoon of November 6th.
- 418) Morales A. Méndez-Sánchez A, Brewer K, **Thomas Tobin**. Título del Trabajo: Estudio retrospectivo de la casuística de muerte súbita en Almonte-Huelva, Andalucía, España. Nombre del Congreso (entidad patrocinante): Proceeding XL Jornadas Científicas “Dra. Rosa Alba Salas Mora”, a celebrarse en las conmemoraciones del LXXIX Aniversario del INH“RR” y el XLI Aniversario de la Sociedad Científica del INH“RR”.Fecha: Octubre, 2017. Ciudad y País: Caracas, Venezuela.
- 419) Morales A, Mendez A, Perez J, Gul W, Brewer K, **Tobin T**. Título del Trabajo: A multicentric retrospective study of sudden death non medicated horses 1986-2017 Nombre del Congreso (entidad patrocinante): World Toxicologic Pathology Congress, Sao Paulo, April 2018 Fecha: April 2018 Ciudad y País: Sao Paulo, Brasil.
- 420) **Thomas Tobin**, Jake Machin, Kimberly Brewer, Clara Fenger and Ted Shults. TRACE

LEVELS OF ENVIRONMENTAL SUBSTANCES IN RACING SAMPLES: WHAT SHOWS UP AND WHY 5th Annual Meeting and Symposium of the North American Association of Racetrack Veterinarians [NAARV] Griffin Gate, Lexington, Kentucky, November 5-6th, 2018, November 6th.

- 421) Presentations to the Ontario Association of Equine Veterinarians, February 13th, 2019, Guelph Ontario, Canada. Presentation # 1/ How drug testing is done, and especially how sensitive and specific it has become. 50 minutes, 10 minutes of questions. Honoring Dr. Bill Oliver, DVM. Guelph and Dr. Werner Kalow, MD, U of Toronto.
- 422) Presentations to the Ontario Association of Equine Veterinarians, February 13th, 2019, Guelph Ontario, Canada, Presentation # 2/ How thresholds are set for therapeutics, and at this point we will discuss the Canadian Lasix threshold matter, and how it is handled in the US. 50 minutes, 10 minutes of questions. Dedicated to Dr. Bob Jack, DVM Guelph, and Dr. Mike Weber, DVM, Guelph.
- 423) Presentations to the Ontario Association of Equine Veterinarians, February 13th, 2019, Guelph Ontario, Canada, Presentation # 3/ Why testing is different between authorities, and the matter of highly sensitive testing readily detecting traces of materials inadvertently transferring to Horses, and how to handle this (Contributions of Dr. George Maylin, DVM, Guelph.).
- 424) George Maylin, Clara Fenger, Jake Machin, Kimberly Brewer, J.D. Green, Ted Shults and **Thomas Tobin**: Yellow Rocket: A Kentucky Pasture Plant Yielding Amphetamine (Pemoline??). Presentation at the Kent Stirling Memorial Lecture National Horsemen's Benevolent and Protective Association Convention, Tampa Bay Downs and Clearwater Beach, Fla. 9:00 AM, Friday March 15th, 2019.
- 425) Tobin T, Attendance at the April 3rd, 2019 meeting of the Association of Racing Commissioners International Scientific Advisory Group meeting at the ARCI 2019 Conference on Animal Welfare and Racing Integrity – Arcadia, CA., USA. And attendance at the Drug Testing Standards and Practices Committee Meeting: Presentations and discussions on Lasix, Clenbuterol, Betamethasone and the matter of separate medication rules for Standardbred racing.
- 426) Tobin T Invited presentation on environmental substances, specifically trace level detections of human prescription medications and recreational substances entitled "Environmental substances: "molecular misadventure", let me count the ways! to the ROAP and the Delaware Thoroughbred Racing Commission Conference, April 15–16th, 2019 at the Delaware Park Race Track at the Veranda Room, White Clay Creek Country Club Newark Delaware.
- 427) Jacob Machin³ George Maylin¹, Clara Fenger², and Thomas Tobin^{3*} Plasma Pharmacokinetics of Betamethasone Following Intra-Articular Administration of 15mg of BetaVet[®] into Each Stifle Joint: A Review and Analysis *Presentation to Department of Toxicology and Cancer Biology Orientation with the Integrated Biomedical Sciences Program, August 16th, 2019 and also at the Departmental Retreat, August 23rd 2019*
- 428) Thomas Tobin, invited speaker, "DICLAZURIL / BENZENEACETONITRILE AGENTS: SAFE AND HIGHLY SPECIFIC ANTI-APICOMPLEXAN MEDICATIONS" Presented at the Infectious Diseases Research Day, Oct 17th. Day, Oct 17th 2019 Room 236 Lee T. Todd, Jr. Building, 789 South Limestone Lexington, University of Kentucky.
- 429) Thomas Tobin, invited presentation, RECENT RESEARCH PAPERS (KNYCH / BAYLY) CONCERNING 24 HOUR ADMINISTRATION OF FUROSEMIDE presented Wednesday, October 23rd, 2109, Presented at the National HBPA Executive Meeting, Kentucky Training Center, Lexington, KY

- 430) Clara Fenger, DVM, PhD, DACVIM, Kim Brewer, DVM, Martina Neidhart, DVM DCV, CVA, Thomas Tobin, MCVRS, PhD, DABT “ Feed, Forage and Bedding: What is a positive now” presentation at the North American Association of Racetrack Veterinarians 6th Annual Conference, November 3rd, 2019, Pasadena, California.
- 431) Thomas Tobin, Invited speaker, The Lexington Rotary Club, 6:30 PM March 25th, 2000, 30 minute presentation on “Half a Century of Equine Medication Research, including The Maxwell H. Gluck Equine Research Center at the College of Agriculture Food and the Environment, University of Kentucky. RESCHEDULED BECAUSE OF COVID.
- 432) Thomas Tobin, invited presentation, “Analysis of the Hinchcliff and related contributions on furosemide” Presented Thursday, July 30th, 2020, Presented at the National HBPA Executive Meeting, Kentucky Training Center, Lexington, KY
- 433) Thomas Tobin, October 8th, 2020: <https://youtu.be/Vc5-fcg1uPQ> Video presentation, “An educational presentation about Zilpaterol to the Equine Community” sponsored by Glanbia, Ireland, Purcellsinch Business Park, IDA Ireland, Dublin Rd, Purcellsinch, Kilkenny, R95 E70V, presented by Gain Equine Nutrition to the English Equine Community and, with French subtitles, to the French Equine Community.
- 434) Thomas Tobin, 7 PM, Tuesday March 9th, 2021 *Equine Drug Testing: Now a Million to a Billion Times More Sensitive than When I Entered this Field*” Zoom meeting: Tuesday, 2 CE Hours RACE-approved! Sponsored by [metaVet](#) and the [North American Association of Racing Veterinarians, NAARV](#).
- 435) Thomas Tobin, *ENVIRONMENTAL SUBSTANCE PLUS ENTHUSIASTIC ANALYST, REGULATORY CONCERNS ??*” *Presentation to the 2021 National Horsemen’s Benevolent and Protective Association Expanded Executive Committee Meeting, Hyatt Regency Hotel, Lexington, KY, April 15th, 2021*
- 436) Morales Briceño, Abelardo, Méndez Sanchez, Aniceto; Perez-Arévalo, Jose; Brewer, Kimberly, Fenger, Clara, Tobin Thomas: 2021 Una posible condición hereditaria de Hemorragia Pulmonar Inducida por el Ejercicio, colapso y muerte súbita detectada en caballos Pura Sangre Ingles en Venezuela. Reporte de caso. III Congreso de Veterinaria y Ciencia y Tecnología de los Alimentos 22 June 2021 Facultad Veterinaria, Universidad De Cordoba Av. de Medina Azahara, 3, 14005 Córdoba, Spain

PUBLICATIONS / COMMUNICATIONS :

- 1) Post RL, Kume S, **Tobin T**, Orcutt B, Sen AK: Flexibility of an active centre in (Na⁺⁺K⁺)-dependent ATPase. *J Gen Physiol* 54(1) Part 2:306-326, 1969. [Cited by 452](#)
- 2) Sen AK, **Tobin T**, Post RL: A cycle for ouabain inhibition of the (Na⁺⁺K⁺)-ATPase. *J Biol Chem* 244:6596-6604, 1969. [Cited by 206](#)
- 3) **Tobin T**, Banerjee SP, Sen AK: Allosteric interactions in the (Na⁺⁺K⁺)-ATPase. *Nature* 225:745, 1970. [Cited by 18](#).
- 4) **Tobin T**, Sen AK: Stability and ligand sensitivity of [3H]-ouabain binding to the (Na⁺⁺K⁺)-ATPase. *Biochem Biophys Acta* 198:120-131, 1970. [Cited by 129](#)
- 5) Akera T, Hook JB, **Tobin T**, Brody TM: Cardiac glycoside sensitivity of (Na⁺⁺K⁺)-activated ATPase in newborn rats. *Res Commun Chem Pathol Pharmacol* 4:599-706, 1972. [Cited by 27](#)
- 6) **Tobin T**, Baskin SI, Akera T, Brody TM: Nucleotide specificity of the (Na⁺⁺K⁺)-dependent adenosine triphosphatase. *Molec Pharmacol* 8:256-263, 1972. [Cited by 19](#)
- 7) **Tobin T**, Brody TM: Rates of dissociation of enzyme-ouabain complexes and K_{0.5} values in (Na⁺⁺K⁺)-adenosine triphosphatase from different species. *Biochem Pharmacol* 21:1553-1560, 1972. [Cited by 101](#)
- 8) **Tobin T**, Henderson R, Sen AK: Species and tissue differences in the rate of dissociation of ouabain from the (Na⁺⁺K⁺)-ATPase. *Biochem Biophys Acta* 274:551-555, 1972. [Cited by 55](#)
- 9) Akera T, Baskin SI, **Tobin T**, Brody TM: Ouabain: Temporal relationship between the inotropic effect and the in vitro binding to and dissociation from (Na⁺⁺K⁺)-activated ATPase. *Naunyn-Schmiedeberg's Archiv fur Pharmacol* 277:151-162, 1973. [Cited by 7](#)
- 10) Akera T, Rech RH, Marquis WJ, **Tobin T**, Brody TM: Lack of relationship between brain (Na⁺⁺K⁺)-activated adenosine triphosphatase and the development of tolerance to ethanol in rats. *J Pharmacol Exp Ther* 185:594-601, 1973. [Cited by 38](#)
- 11) **Tobin T**, Akera T, Baskin SI, Brody TM: Calcium and sodium and potassium dependent adenosine triphosphatase: Its mechanism of inhibition and identification of the EI-P intermediate. *Mol Pharmacol* 9:336-349, 1973. [Cited by 6](#)
- 12) **Tobin T**, Akera T, Hogg RE, Brody TM: Ouabain binding to sodium- and potassium-dependent adenosine triphosphatase: Inhibition by the b-y-methylene analogue of adenosine triphosphate. *Mol Pharmacol* 9:278-281, 1973. [Cited by 8](#)
- 13) **Tobin T**, Akera T, Ku D, LU MC: Reversibility of the interaction of strophanthidin bromoacetate with the cardiotonic steroid binding site of sodium- and potassium-dependent adenosine triphosphatase. *Mol Pharmacol* 9:676-685, 1973. [Cited by 11](#)
- 14) **Tobin T**, Dirdjosudjono S, Baskin SI: Pharmacokinetics and distribution of diphenylhydantoin in kittens. *Am J Vet Res* 34:951-954, 1973. [Cited by 10](#)
- 15) Akera T, Baskin SI, **Tobin T**, Brody TM: Cardiac glycosides: Temporal relationship between the inotropic action and binding to and dissociation from Na⁺⁺K⁺-activated ATPase in vitro. *Recent Advances in Studies on Cardiac Structure and Metabolism, Vol 4, Myocardial Biology* (Ed. NS Dhalla), University Park Press, Baltimore, pp 139-147, 1974. [Cited by 4](#)
- 16) Akera T, Baskin SI, **Tobin T**, Brody TM, Manian AA: 7-8-Dihydroxychlorpromazine: (Na⁺⁺K⁺)-ATPase inhibition and positive inotropic effect. *Advances in Biochem Psychopharmacol* 9:633-640, 1974. [Cited by 6](#)

- 17) Akera T, Brody TM, So RH-M, **Tobin T**, Baskin SI: Factors and agents that influence cardiac glycoside Na⁺⁺K⁺-ATPase interaction. *Ann NY Acad Sci* 242:617-634, 1974. [Cited by 45](#)
- 18) Akera T, **Tobin T**, Gatti A, Shieh I-S, Brody TM: Effect of potassium on the conformational state of the complex of ouabain with sodium- and potassium-dependent adenosine triphosphatase. *Mol Pharmacol* 10:509-518, 1974. [Cited by 24](#)
- 19) Ku D, Akera T, **Tobin T**, Brody TM: Effects of rubidium on cardiac tissue, Inhibition of Na⁺⁺K⁺-ATPase and stimulation of contractile force. *Res Commun Chem Pathol Pharmacol* 9: 431-440, 1974. [Cited by 15](#)
- 20) **Tobin T**, Akera T, Baskin SI, Brody TM: The mechanism of the Ca⁺⁺ ion inhibition of sodium-potassium ATPase. Recent Advances in Studies on Cardiac Structure and Metabolism. Vol. 4, *Myocardial Biology*. (Ed. NS Dhalla), University Park Press, Baltimore, pp 139-147, 1974.
- 21) **Tobin T**, Akera T, Brody TM: Studies on the two phosphoenzyme conformations of Na⁺⁺K⁺-ATPase. *Ann NY Acad Sci* 242: 120-132, 1974. [Cited by 17](#)
- 22) **Tobin T**, Akera T, Dworin JZ, Brody TM: Fluoride nephropathy: Lack of direct involvement of renal ATPase. *Canad J Physiol Pharmacol* 52:489-495, 1974.
- 23) **Tobin T**, Akera T, Han CS, Brody TM: Lithium and rubidium interactions with sodium- and potassium-dependent adenosine triphosphatase: A molecular basis for the pharmacological actions of these ions. *Mol Pharmacol* 10:501-508, 1974. [Cited by 55](#)
- 24) **Tobin T**, Akera T, Lee CY, Brody TM: Ouabain binding to (Na⁺⁺K⁺)ATPase: Effects of nucleotide analogues and ethacrynic acid. *Biochem Biophys Acta* 354:102-117, 1974. [Cited by 24](#)
- 25) **Tobin T**, Tai Cy, Arnett S: Recovery of procaine from biological fluids. *Res Commun Chem Path Pharmacol*, 11(2):187-194, 1975. [Cited by 7](#)
- 26) Abramson HN, Huang CL, Wu TF, **Tobin T**: Thiocardenolides. I. Synthesis and biological actions of 3-β-thiocyanato-14-β-hydroxy-5-β-card-20(22)-enolide. *J Pharm Sci* 65:765-768, 1975. [Cited by 8](#)
- 27) Ku D, Akera T, **Tobin T**, Brody TM: Effects of monovalent cations of cardiac Na⁺⁺K⁺-ATPase activity and on contractile form. *Naunyn-Schmiedeberg's Archiv fur Pharmacol* 20: 113-131, 1975. [Cited by 47](#)
- 28) **Tobin T**, Abramson H: Irreversible inhibition of [3H]-ouabain binding to Na⁺⁺K⁺-ATPase by digoxigenin-3-12 dibromo acetate, an alkylating derivative of digoxigenin. *Eur J Pharmacol* 32: 243-250, 1975. [Cited by 3](#)
- 29) **Tobin T**, Akera T: Shodowmycin, a nucleotide site directed inhibitor of Na⁺⁺K⁺-ATPase. *Biochem Biophys Acta* 389: 126-136, 1975. [Cited by 22](#)
- 30) **Tobin T**, Akera T, Brody SI, Brody TM: The mechanism of interaction of Cassaine with Na⁺⁺K⁺-ATPase. *Biochemical Soc Transactions* 2:1375-1378, 1975. [Cited by 1](#)
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- 32) **Tobin T**, Akera T, Brody TM, Tanaja HA: Irreversible inhibition of Na⁺⁺K⁺-ATPase: Strophanthidin 3,5-bisparabenzoylbenzoate, a photo-chemical analog of strophanthidin. *Res Commun Chem Pathol Pharmacol* 10: 605-617, 1975. [Cited by 2](#)
- 33) Akera T, Ku D, **Tobin T**, Brody TM: The complexes of ouabain with sodium- and potassium-

- activated adenosine triphosphatase formed with various ligands: The relationship to the complex formed in the beating heart. *Mol Pharmacol* 12:101-114, 1976. [Cited by 50](#)
- 34) **Tobin T**, Blake JW, Tai Cy, Arnett S: The pharmacology of procaine in the horse. I. A preliminary report. *Am J Vet Res*, 37:1107-1110, 1976. [Cited by 3](#)
- 35) Blake JW, **Tobin T**: The gas-liquid chromatograph and the electron capture detector in equine drug testing. *Brit J Sports Med*, 10:129-132, 1976. [Cited by 2](#)
- 36) Han CS, **Tobin T**, Akera T and Brody TM: Effects of alkali metal cations on phosphoenzyme levels and [3H]-ouabain binding to Na⁺⁺K⁺-ATPase. *Biochem Biophys Acta* 429:993-1005, 1976.
- 37) Ku D, Akera T, **Tobin T**, Brody TM: Comparative species studies on the effects of monovalent cations and ouabain on cardiac Na⁺⁺K⁺-ATPase and contractile force. *J Pharm Exp Therap* 197(2):458-469, 1976.
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- 40) **Tobin T**: Drugs, Horses and the Kentucky Equine Drug Research Program. Proc 2nd Conv Natn'l Assoc. State Racing Commissioners, San Diego, CA, 1976, pp 89-99.
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- 46) **Tobin T**, Swerczek TW, Blake JW: Pine-oil toxicity in the horse: Drug detection, residues and pathological changes. *Res Commun Chem Path Pharmacol* 15:291-301, 1976. [Cited by 10](#)
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- 49) Gabel AA, **Tobin T**, Ray RS, Maylin GA: Furosemide (Lasix®) in horses: A review. *J Eq Med Surg*, 1:215-218, 1977. [Cited by 19](#)
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- 53) **Tobin T**, Akera T: Interaction of ouabain and cassaine with Na⁺⁺K⁺-ATPase and its relationship to their inotropic actions. In: Drug Action at the Molecular Level, MacMillan Pub Co, London, 1977, pp 213-133. [Cited by 2](#)
- 54) **Tobin T**, Blake JW: The pharmacology of procaine in the horse V. Relationships between plasma and urinary concentrations of procaine. *J Eq Med Surg*, 1:188-194, 1977. [Cited by 10](#)
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Tobin, Thomas, May 18

th, 1983 Testimony in Hearings before the Subcommittee on Criminal Justice of the Committee on the Judiciary, House of Representatives 98th Congress, First Session on Corrupt Horseracing Practices, May 18, 1983 serial number 156, starting page 116 and including analysis and rebuttal of previous testimony, testimony by T Tobin, responses to questions by committee members and extensive supporting documentation including many Tobin publications.

THOMAS TOBIN BIOSKETCHES: 225 WORD BIO.

Thomas Tobin is a Veterinarian,) Pharmacologist (1970) and Toxicologist. His MVB is from University College, Dublin (1964), his PhD from the Medical center in the University of Toronto, 1970, where he was a Massey College Junior Fellow.

His early research was on the Somali arrow poison, ouabain, a highly specific inhibitor of the Sodium-Potassium ATPase pump. He worked on Sodium-Potassium ATPase from 64-74, including while on faculty at Michigan State University Veterinary School. In 1975 he went to the University of Kentucky to run the Kentucky Equine Medication Research program.

In Kentucky he published the plasma threshold for furosemide and wrote "Drugs and The Performance Horse". He was asked to develop a test for Etorphine; he developed an immunoassay test, introducing ELISA tests to horseracing, and leading to the Neogen line of Equine ELISA tests.

He next patented Diclazuril as a prevention/treatment for Equine Protozoal myelitis, (EPM) a neurological disease of American horses; this work resulted in Bayer Marquis, the first FDA approved treatment for EPM.

In 2001 he worked on the Kentucky Mare Reproductive Loss Syndrome [MRLS]; he soon proposed a unique probabilistic mechanism for MRLS, which description is copyrighted.

Since 2004 he has worked on the synthesis and certification of reference standards and internal standards for equine therapeutic regulation and also in the area of regulatory thresholds for equine therapeutic medications. www.thomastobin.com.

150 WORD BIO

Thomas Tobin, Member, Royal College of Veterinary Surgeons, 1964, PhD, Pharmacology, University of Toronto, 1970, Toxicologist, Diplomate of the American Board of Toxicology, 1980-2105, Professor, Veterinary Science, Professor, Dept. of Toxicology and Cancer Biology, Univ. of Kentucky, 1975-date, **Author**, 480 page text book "Drugs and the Performance Horse" Charles C Thomas, 1981, **500** or so **Research Papers Communications**. 1983, **Testimony before Congress** re equine medication; **Inventor**, 1985, 80 ELISA tests for horseracing, **first company "spun off" from UK**, now the Neogen Lexington drug testing ELISA tests. Patent holder, **US Patent # 5,883,095 Diclazuril** for Equine Protozoal Myeloencephalitis, first FDA approved treatment for EPM, 1999, marketed as Bayer Marquis and also as Merck Protazil, commercially significant Intellectual properties, also other patents. **Innovator, US Copyright# TXU1111484** of the unique biological mechanism of the Mare Reproductive Loss Syndrome. Currently synthesizes 40 plus **Certified Reference Standards** and **Stable Isotope Internal Standards** for medication regulation worldwide, www.thomastobin.com.

140 WORD BIO

Thomas Tobin is a Veterinarian, Dublin (1964), PhD, Med. Ctr., U. Toronto, 1970. He researched Sodium-Potassium ATPase from 1964-1974, at which time he was an Associate Professor in the MSU Veterinary School. In 1975 he went to the University of Kentucky, where he wrote "Drugs and the Performance Horse" and published the plasma threshold for Lasix. In the eighties he introduced ELISA tests to horseracing, leading to the Neogen line of ELISA tests. In the nineties he patented Diclazuril as a prevention/treatment for Equine Protozoal myelitis, (EPM) leading to Bayer Marquis, the first FDA approved treatment for EPM. In 2001 he started working on the Mare Reproductive Loss Syndrome [MRLS], soon proposing a unique probabilistic mechanism for MRLS. Since 2004 he has focused on the synthesis and certification of reference standards and

internal standards for equine therapeutic medication regulation. www.thomastobin.com.

MASSEY COLLEGE BIO, 1815 WORDS:

***Thomas Tobin** became a Member of the Royal College of Veterinary Surgeons in 1964 and graduated with a Ph.D. in Pharmacology at U of T in 1970, where he was a Massey College Junior Fellow from 1968-1970. He was a Toxicologist, Diplomate of the American Board of Toxicology from 1980 to 2105 and has been a Professor of Veterinary Science in the Gluck Equine Research Center and the Department of Toxicology and Cancer Biology at the University of Kentucky since 1975. Among his other achievements, he is the author of the textbook "Drugs and the Performance Horse", published in 1981 with a foreword by HRH The Prince Philip, Duke of Edinburgh, a long time Massey College Honorary Senior Fellow. He has also published some 500 research papers and has invented and patented several equine-related drugs and tests. Currently, he is synthesizing Certified Reference Standards and Stable Isotope Internal Standards for medication regulation worldwide. In 1983, as the photo above, Dr. Tobin gave testimony on equine drug testing before the US House of Representatives Judiciary Subcommittee on Criminal Justice. <
www.thomastobin.com >*

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