

Curriculum Vitae

KENNETH HARRINGTON MCKEEVER, Ph.D., FACSM, FAPS

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Education:

1985-1987	National Academy of Sciences-National Research Council Resident Research Associate at the NASA-Ames Research Center	Post-Doctoral Training
1981-1984	University of Arizona	Ph.D. Animal Physiology
1979-1981	Fresno State University	M.S. Animal Science
1974-1979	California State Polytechnic University Pomona	B.S. Animal Science

General Fields of Interest: On a basic level my research has focused on comparative exercise and cardiovascular physiology with a particular interest in baroreceptor function and renal and neuroendocrine control of blood pressure, blood volume and fluid and electrolyte balance. On an applied level, my research has focused on the effects of ergogenic (performance enhancing) practices on the physiological responses of the equine athlete.

Professional Experience:

2009-	Professor. Department of Animal Science, School of Environmental and Biological Sciences, Rutgers, The State University of New Jersey, New Brunswick, NJ.
2002-	Associate Director for Research. Equine Science Center, School of Environmental and Biological Sciences, Rutgers, The State University of New Jersey, New Brunswick, NJ.
1995-2009	Associate Professor. Department of Animal Science, School of Environmental and Biological Sciences, Rutgers, The State University of New Jersey, New Brunswick, NJ.
1989-1994	Assistant Professor and Co-Director of the Equine Exercise Physiology Program. Department of Veterinary Clinical Sciences, College of Veterinary Medicine, The Ohio State University, Columbus, OH.
1989-1994	Assistant Professor. School of Health Physical Education and Recreation. The Ohio State University, Columbus, OH.
1988-1989	Instructor. School of Health Physical Education and Recreation. The Ohio State University, Columbus, OH..
1987-1989	Instructor. Department of Veterinary Clinical Sciences, College of Veterinary Medicine, The Ohio State University, Columbus, OH.
1986-1987	National Academy of Sciences-National Research Council Resident Research Associate. Cardiovascular Research Laboratory, NASA-Ames Research Center, Moffett Field, CA.
1985-1986	National Aeronautics and Space Administration Post-Doctoral Research Associate. Cardiovascular Research Laboratory, NASA-Ames Research Center, Moffett Field, CA.

Awards, Honors, and Recognition:

Awards:

- 2019 **Fellow - American Physiological Society** - The rank of Fellow of the American Physiological Society (FAPS) is an elite member status reserved to honor distinguished leaders who have demonstrated excellence in science, have made significant contributions to the physiological sciences and related disciplines and have served the Society,” McKeever is the only person ever to receive this for horse research and the first Legacy Rutgers faculty member to receive this honor.
- 2013 **Distinguished Service Award in Equine Science - Equine Science Society** – “The Distinguished Service Award in Equine Science was awarded for the outstanding research contributions of the candidate to the field of equine science. This award is the most prestigious honor that the Equine Science Society can bestow upon one of its members.
- 2005 **Volunteer of the Year Award** - Rutgers College Office of Recreational Services. Presented for coaching the water polo club and advising its student members.
- 2003 **The George Fleming Prize - The Veterinary Journal** – The award, commemorating the founder of *The Veterinary Journal*, Professor George Fleming (1833-1901) was awarded for the “paper that was the most meritorious published in the *Journal* during the year. Judged on scientific content, originality, style and readability, and contribution to scientific and veterinary knowledge.”
- 2003 **Faculty Service Award - Graduate Program in Animal Sciences** – Presented by the graduate students for significant contributions to the efforts of the students and the program.
- 1997 **Team Building Award** - Executive Dean Cook College-NJAES
- 1990 **Fellow** - American College of Sports Medicine
- 1988 **Young Investigator Award** - Central Ohio Heart Association.

Honors and Recognition:

- 2018 **Selected - Harness Racing Medication Collaborative** - one of 7 researchers invited by the United States Trotting Association to serve on a panel of experts to formulate research needed to guide policy issues related to harness racing.
- 2017 **President - Equine Science Society** elected to a two year term as the leader of the association of record for academic professionals conducting research, teaching, and outreach of horses.
- 2017 **Invited Panelist - First International Equine Forum** held at the American University of the Emirates in Dubai, United Arab Emirates under the patronage of Sheikh Hamdan bin Rashid Al Maktoum. Served on three expert panels: “Future innovations and Directions for Equine Research and Education”; “Behavior and Psychology”; and “Equine Welfare, Nutrition, Breeding, and Doping”
- 2014 **Selected - 6 member top-tier Scientific Research Review Committee of the Association of Racing Commissioners International**. Note, the other five members are all racing chemists with McKeever being the only exercise physiologist in the world to serve on this important committee. The Association of Racing Commissioners International (RCI) is the preeminent international body of regulators, scientists, and others involved in the oversight of equine and canine racing. Their mission is to advise national and international regulatory bodies to achieve consensus on policy issues focused on improving the integrity of the industry.
- 2014 **Selected - International Committee** (term 2014-2026) of the International Conference on Equine Exercise Physiology (ICEEP) - One of eight members from around the world selected to serve 12 year terms to guide the organization. ICEEP is the pre-eminent organization devoted to scientific research into the physiology, health, and function of equine athletes.
- 2012- **Editor-in-Chief** - Comparative Exercise Physiology.

- 2009 **Invited International Expert (One of 4)** - Scientific Advisory Committee, Equine Drug Research Institute, a joint effort of the Anti-Doping Research Organization and the Grayson-Jockey Club Foundation. Provide expert advice on drug detection methods and funding requests. Formulation of a Code of Conduct for the Horse Industry.
- 2008 **External Examiner - University of Limerick, Equine Studies Program** - Four year term to review exams and to meet on the final disposition of students in both the degree and certificate programs offered by the International Equine Institute and the university.
- 2008 **Invited Panelist - American College of Sports Medicine International Health & Science Exchange at the National Press Club, Washington, D.C.** This was the kickoff event for a joint effort between the ACSM and the Sato Sports Plaza, Ltd., a Japanese company that developed KAATSU training, an innovative muscle conditioning technique.
- 2004- **Editor-in-Chief** - International Journal of Kaatsu Training Research

Research Support:

Grants and Contracts Funded (PI or Co-PI):

2022-2023 - Principal Investigator, *Pharmacokinetics and Pharmacodynamics of SARMS in Standardbred Horses.* Equine Science Center Grant, **\$25,000**

2019-2020 - Principal Investigator, *Effect of furosemide and acute exercise on the equine microbiome.* Equine Science Center Grant, **\$24,934.54.**

2016 - 2022 - Principal Investigator, *Duration of Effect of E4021 on pulmonary arterial pressures in horses exercising on a treadmill.* Equine Sports Medicine Consultants, LLC/Luitpold, Inc, **\$416,435**

2016-2017 - Principal Investigator, (McKeever, Anthony, Klein) *The effects of an acute bout of maximal exercise before and after chronic training, as well as after detraining, on the unfolded protein response and its role in the adaptations of skeletal muscle to exercise in Standardbred horses* Equine Science Center Grant, **\$23,000.**

2015-2017 - Principal Investigators (K.H. McKeever and S. Arent), *Oxidative stress in an equine mode - ChromoLogic OCOSMO study.* Chromologic/Department of Defense. **\$184,295** -Validation of a non-invasive transocular device for the measurement of markers of oxidative stress in aqueous humor and plasma in horses subjected to exercise.

2015-2016 - Principal Investigator, (McKeever, Janabi, and Biddle), *Effect of acute exercise and exercise training on the equine microbiome,* Equine Science Center Grant, **\$25,000.**

2015-2016 - Principal Investigator, (McKeever, Anthony, Klein), *The characterization of the Unfolded Protein Response (UPR) in Standardbred horses in response to acute and chronic endurance exercise, as well as detraining; in order to establish the role(s) of the UPR in the adaptations to exercise and the mediation of the inflammatory response,* Equine Science Center Grant, **\$25,000.**

2015 Co-PI (McKeever, Malinowski, and Maylin), *Evaluation of cobalt as a performance enhancing drug (PED).* United States Trotting Association, **\$50,000**

2015 - 2016 - Principal Investigator, *Evaluation of a new formulation of E4021 on Pulmonary Arterial Pressures in Strenuously Exercising Horses using a Treadmill .* Equine Sports Medicine Consultants, LLC/Luitpold, Inc, **\$320,000.**

2014 - 2015 Co-PI (Maylin, McKeever, Malinowski), *Establishment of a threshold for the detection of exogenous cobalt administration in race horses.* United States Trotting Association, **\$40,000**

2013 - Principal Investigator, *Horse Palatability of an Egg Based Muscle Recovery Supplement,* Arkion Life Sciences, LLC, **\$14,871.**

2013 - 2014 - Principal Investigator, *Dose Selection of E4021 for Strenuously Exercising Equine using a Treadmill*, Equine Sports Medicine Consultants, LLC, **\$301,531.**

2012 - 2013 - Principal Investigator (K.H. McKeever and S. Arent), *Pharmacokinetics and pharmacodynamics of an oral superoxide dismutase supplement as a recovery aid for horses following strenuous exercise*. Farnam Companies Inc. dba Central Life Sciences, **\$75,417.**

2012-2013 - Co-Principal Investigator (R.Avenatti, K.H. McKeever and K Malinowski), *Effects of age and Acute Exercise on Heat Shock Protein 70 and Molecular Mediators of Inflammation and Insulin Sensitivity*, Equine Science Center Grant, **\$25,000.**

2012 - Principal Investigators (K.H. McKeever and S. Campbell), *Evaluation of OCHYMO Performance in an Equine Hydration Model*. Chromologic/Department of Defense. **\$63,603.** Validation of a non-invasive transocular device for the measurement of aqueous humor and plasma osmolality in horses and humans subjected to exercise induced manipulations of fluid and electrolyte status.

2008 - 2010 - Principal Investigator (McKeever, Liburt, Malinowski) *Effects of age and training on the cytokine, myokine, and endocrine regulation of glucose metabolism in Standardbred mares*, NJAES-Special Initiative on Equine **\$80,000.**

2007 - Principal Investigator (McKeever) *Effect of various flavor enhancers on the palatability of Equifit liquid vitamin and mineral supplement*, Alpharma, Inc., **\$7,500.**

2006 -2008, Lead Principal Investigator (K.H. McKeever), Managing Principal Investigator (W. Franke), Co-Principal Investigators (N. Vorsa, T Ho, Chan, D. Fong, M. Rafi) W911QY-07-C-0007, *Combat ration supplements for improved cognitive and physical performance*, US Army Natick Soldier System Center, Natick, MA., Total Costs: **\$750,000.** McKeever subcontract total costs: \$220,333.

The main part of this project focused on black tea and cranberry extracts which were shown to suppress the inflammatory response to exercise in horses. The horse was used as an intermediate animal model to conduct dose response trials to determine the effects of the extracts mRNA expression for the cytokines in blood and muscle as well as electron microscopy. The primary hypothesis was that the extracts would suppress markers of delayed onset muscle soreness. The horse was also used to conduct pharmacokinetic studies to determine the distribution and metabolism of the polyflavonols contained in the extracts.

2006 - Principal Investigator (McKeever) *Palatability of an electrolyte and yeast extract supplement*, Alpharma, Inc., **\$5,000.**

2006 - Principal Investigator (McKeever) *Evaluation of the cooling efficacy of a second generation "Extend-a-Cool" transdermal cooling system*. Alpharma, Inc., **\$1,500.**

2006 - Principal Investigator (McKeever) *Horse usage for normal blood samples for assays related to Equiox project*. Merial Pharmaceutical, Ltd, **\$2,000.**

2001-2006, Co-Principal Investigator (Rosen, Franke, McKeever, Ho, Fong, Chan, Rafi, Huang, Ghai) *"Combat ration supplements for improved cognitive and physical performance."* US Army Natick Soldier System Center, Natick, MA. DAAD 16-02-C-05 and DAAD 16-03-C055. Contract Total Costs for yrs 2-3: **\$719,890,** McKeever subcontract total costs: \$211,333.

2005 - Principal Investigators: (Bagnell, McKeever, Williams) *Inflammation in horses and cytokine assay development*, NJAES-Special Initiative on Equine **\$79,000.**

2003 - Principal Investigators (Gordon and McKeever) *The effects of exercise and ghrelin administration on food intake and endocrine parameters of energy homeostasis in Standardbred mares* NJAES-Special Initiative on Equine **\$40,000.**

2003 - Principal Investigators (Watford, Manso, McKeever) *Regulation of fuel homeostasis in the horse during pregnancy, lactation and development*, NJAES-Special Initiative on Equine. **\$10,000.**

2002 - Principal Investigator (Malinowski, McKeever, Gordon) *Care of the Aging Equine Athlete.* Bernice Barbour Foundation. **\$6,400.**

2002 - Principal Investigators (McKeever and Lorimer) *Do artificial oxygen carriers enhance performance and can we detect their use in horses?* NJAES-Special Initiative on Equine. **\$40,000.**

2002 - Principal Investigator (Watford, Manso, McKeever) *Regulation of skeletal muscle glucose metabolism in the horse: effects of development and exercise.* NJAES-Special Initiative on Equine. **\$43,000.**

2002 - Principal Investigators (Gordon, Malinowski, and McKeever) *The regulation of energy homeostasis in the horse.* NJAES-Special Initiative on Equine. **\$49,000.**

2001 - Principal Investigator *Effects of acid blocking therapies on plasma tCO₂ concentration and markers of performance in Standardbred horses,* NJAES-Special Initiative on Equine. **\$51,000.**

2000 - Principal Investigator (McKeever, Malinowski) *Do electrolyte supplements alter plasma TCO₂ concentrations in Standardbred horses?* NJAES-Special Initiative on Equine. **\$59,000.**

2000 -Co-Principal Investigator (Malinowski, McKeever) *Effect of age on the glucose insulin response to exercise in Standardbred mares.* NJAES-Special Initiative on Equine. **\$36,000.**

2000-Principal Investigator (McKeever, Lorimer, Cook) *An Equine specific transferrin receptor assay.* Association of Racing Commissioners International, **\$22,400.**

1999 - Principal Investigator (McKeever, Kearns, Malinowski) *Does clenbuterol treatment alter muscle performance and aerobic capacity in the horse.* NJAES-Special Initiative on Equine. **\$55,000.**

1999 - Co-Principal Investigator (Malinowski, Boyadjieva, Guirnalda, McKeever) *Effect of exercise training and clenbuterol on immune function in the horse.* NJAES-Special Initiative on Equine. **\$55,000.**

1999 - Principal Investigator (McKeever) *Development of a new model for inducing arthritis.* Merck Research Labs, **\$20,000.**

1998 - Principal Investigator: (McKeever) *Does enalapril alter pulmonary artery pressure and performance? A possible new treatment for EIPH.* NJAES-Special Initiative on Equine. **\$30,000.**

1997 - Principal Investigator: (McKeever and Lorimer) *Methods to detect prior rhuEPO use.* Association of Racing Commissioners International. **\$25,500.**

1996 - Principal Investigator: (McKeever) *Development of methods to detect prior EPO use.* NJAES-Special Initiative on Equine. **\$33,000.**

1996 - Principal Investigator: (McKeever) *Methods to detect prior EPO use.* Earle I. Mack Charitable Trust. **\$3,500.**

1996 - Principal Investigator: (McKeever) *Development of methods to detect prior EPO use.* New York Thoroughbred Horseman's Association. **\$10,000.**

1996 - Principal Investigator: (McKeever) *Measures of exercise performance in geriatric mares undergoing chronic treatment with equine somatotropin (eST)* Bresagen, Inc.. **\$6,400.**

1996 - Co-Investigator:(Malinowski, Christensen, Hafs, Ralston, McKeever) *Effects of equine somatotropin in geriatric mares.* Bresagen, Inc. **\$92,500.**

1995 - Principal Investigator: (McKeever) *Erythropoietin dying to win? Effects on maximal aerobic capacity, blood pressure, and cardiovascular function.* NJAES-Special Initiative on Equine. **\$16,000.**

1995 - Principal Investigator: (McKeever) *Erythropoietin dying to win? Effects on maximal aerobic capacity, blood pressure, and cardiovascular function.* Rutgers Research Council, **\$800.**

1995 - Principal Investigator: (McKeever) *Endothelin response to exercise in young and geriatric female horses.* ORSP-Busch Biomedical Research Program, **\$8,940.**

1995-1998 - Principal Investigator (McKeever). Start-up funding came from the New Jersey State Equine Initiative at approximately \$140,000/yr for four years (1995-1998). Funding provided to develop the Rutgers Equine Exercise Physiology Laboratory.

1993 - Principal Investigator: (McKeever, Hinchcliff, Robertson) *Effect of oral erythropoietin on blood volume in horses.* Amarillo Cell Culture, Inc. **\$3,200.**

1993 - Co-Principal Investigator: (Beard, Holcombe, McKeever, Hinchcliff) *Effect of Staphylectomy on airflow mechanics in horses.* Ohio Standardbred & Thoroughbred Research Fund. **\$15,124.**

1993 - Co-Investigator: (Kohn, Hinchcliff, McKeever) *Effect of ambient temperature and humidity on performance in exercising horses.* American Horse Shows Association. **\$33,039.**

1993 - Co-Investigator: (Kohn, Hinchcliff, McKeever) *Effect of total body washing with cool water on heat dissipation in horses exercised at 32.2 °C and 90% humidity.* American Horse Shows Assn **\$5,658.**

1992 - Co-Principal Investigator: (Hamlin, Bonagura, McKeever) *Effect of an atriopetidase inhibitor on the neuroendocrine control of cardiovascular function in dogs with heart failure.* Source: Bayer Pharmaceutical Company. Direct costs: 1st year **\$250,000.**

1992 - Co-Principal Investigator: (McKeever/Hinchcliff, Farris, Lamb) *Serotonin & hormonal responses to prolonged exercise: effect of glucose infusion.* Ohio Standardbred and Thoroughbred Funds. **\$19,681.**

1992 - Co-Investigator: (Hamlin, Bonagura, McKeever) *Clinical trial to prove efficacy of Enalapril to improve exercise tolerance in dogs with heart failure.* Merck, Inc., **\$70,000.**

1992 - Co-Principal Investigator: (Lombardo/McKeever, Heck, Whitehead, Auge, Hinchcliff, Alway) *Anabolic steroids and anaerobic training.* Department of Family Medicine Funds, **\$12,000.**

1991 - Principal Investigator: (McKeever, McNally, Hinchcliff, Reed, Robertson) *Effect of erythropoietin on maximal aerobic capacity.* Ohio Standardbred & Thoroughbred Funds. **\$13,400.**

1991 - Co-Investigator: (Beard, Holcombe, McKeever, Hinchcliff) *Effect of Sternothyroid myectomy on airflow mechanics in normal and clinically affected horses.* Ohio Standardbred and Ohio Thoroughbred Research Fund. **\$15,725.**

1991 - Co-Investigator (Hinchcliff, McKeever, Muir, Sams) *Furosemide and phenylbutazone in performance horses: drug interactions & effects on performance.* Grayson Foundation. **\$150,000.**

1991 - Co-Investigator: (Hinchcliff, McKeever, Reinhardt) *Energy expenditure, water flux, body composition changes during sustained running in sled dogs.* Iams Corp. **\$16,861.**

1991 - Co-Investigator (Hinchcliff, McKeever, Muir, Sams) *Does Na⁺ bicarbonate improve athletic performance in horses?* Ohio Standardbred & Thoroughbred Research Funds. **\$11,573.**

1990 - Principal Investigator, (McKeever) *Hemodynamics, atrial natriuretic peptide, and vasopressin in intact and splenectomized horses during exercise,* University Seed Grant, **\$15,000.**

1990 - Principal Investigator, (McKeever) Development Fund Grant, Columbus Instruments, **\$1,000.**

1990 - Principal Investigator (McKeever) *Plasma atrial natriuretic peptide concentration in monkeys and horses.* National Aeronautics and Space Administration. NASA RTOP199-14-12-11, **\$2,200.**

1990 - Co-Investigator (Hinchcliff, McKeever, Muir) *Thermoregulatory Responses to Running: Effect of Furosemide.* Ohio Standardbred and Ohio Thoroughbred Research Funds. **\$12,624.**

1990 - Co-Investigator: (Kohn, Fenger, Hinchcliff, McKeever) *Relationship between O₂ consumption & Hb saturation.* Ohio Standardbred and Thoroughbred Research Funds. **\$7,880.**

1989 - Principal Investigator: (McKeever, Hinchcliff, Reed, Lamb, Muir) *Endocrine changes during exercise in horses.* Ohio Animal Health Trust, **\$4,996.**

1989 - Principal Investigator: (McKeever, Hinchcliff, Reed, Lamb, Muir) *Hormonal changes and exercise in the horse.* Ohio Standardbred and Ohio Thoroughbred Research Funds, **\$2,117.**

1989 - Principal Investigator: (McKeever, et al.) *Hematocrit and plasma volume alterations during submaximal exercise in intact and splenectomized horses,* Ohio Standardbred and Ohio Thoroughbred Research Funds, **\$9,560.**

1989 - Co-Investigator: (Cooley, McKeever, Lamb, Hinchcliff, Muir) *Furosemide and exercise: Hormonal response in the horse.* Ohio Standardbred and Thoroughbred Research Fund. **\$2,913.**

1989 - Co-Investigator: (Hinchcliff, Muir, McKeever) *Furosemide and exercise: Renal and extra-renal effects in exercising horses.* Ohio Standardbred and Thoroughbred Research Funds. **\$11,841.**

1989 - Principal Investigator, (McKeever) *Validation of Equine Heart Rate Meters.* Exercise Physiology Development Fund Grant from Mr. and Mrs. Myron Stepath, **\$1,000.**

1988 - Principal Investigator: (McKeever) *Cardiovascular, fluid, electrolyte, & endocrine responses to the first week of exercise training in horses.* Central Ohio Heart Assn Young Investigator Award **\$25,000.**

1988 - Co-Investigator: (Bramlage, Schneider, Hardy, Weisbrode, McKeever) *Effects of exercise on articular cartilage repair in the horse.* American Quarter Horse Association. **\$16,500.**

1988 - Co-Investigator: (Hinchcliff, Muir, McKeever) *Effect of phenylbutazone on selected physiological and biochemical responses to exertion.* Ohio Standardbred & Thoroughbred Research Fund **\$14,900.**

1985-1987 - Co-Principal Investigator (Sandler and McKeever) *Cardiovascular responses to simulated weightlessness in non-human primates.* NASA RTOP #199-21-12-01. **\$380,000.** Grant funded Dr. McKeever's research as a National Research Council Resident Research Associate.

Equipment and Other Gifts

2014 United States Trotting Association: Development Fund Honorarium, \$2,500.

2013 James Covello: Development Fund Gift, \$2,400.

2013 New Jersey Racing Commission: (Malinowski and McKeever) Donation of Equipment and supplies from the closed NJ State Police Equine Drug Detection Laboratory \$206,606.

2011 Cambridge University Press: Development Fund Honorarium, \$2,300.

2010 Cambridge University Press: Development Fund Honorarium, \$4,600.

2009 Cambridge University Press: Development Fund Honorarium, \$4,600.

2008 Cambridge University Press: Development Fund Honorarium, \$4,600.

2007 Cambridge University Press: Development Fund Honorarium, \$4,100.

1998 Merial Pharmaceutical, Ltd Donation of Gastrogard valued at \$8,000

1997 Merial Pharmaceutical, Ltd Donation of Enalapril valued at \$2,000

1995 Ortho Biotech donated a new hemostasis analyzer valued at \$30,000.

1995 Merck, Inc. laboratory instruments with an estimated value of \$75,000

1995 Ortho-McNeal donated several laboratory instruments with an estimated value of \$65,000

1995 Ohmeda, Inc. (British Oxygen Corp.) several lab instruments estimated value of \$45,000

1995- Horse owners donated 18 mares to the Exercise Physiology program.

Publications:

Books:

1. *The Athletic Horse, Principles and Practice of Equine Sports Medicine*, 3rd Edition, Editors **Hodgson D, McKeever, K.H. and C. McGowan**, Elsevier, St. Louis, In Preparation, target publication date 2024.
2. *The Athletic Horse, Principles and Practice of Equine Sports Medicine*, 2nd Edition, Editors **Hodgson D, McKeever, K.H. and C. McGowan**, Elsevier, St. Louis, 2014.

Book Chapters:

1. **McKeever, K.H.** Equine Exercise Physiology. In: *The Biology of Domestic Animals*, Eds, Colin G. Scanes and Rodney Hill, CRC Press, Boca Raton, FL, Chapter 1, pp 3-17, 2017.
2. **McKeever, K.H.** Exercise and rehabilitation of the older horse. In: *Veterinary Clinics of North America, Equine Practice, Geriatric Medicine*, ed. Catherine McGowan. Elsevier, Philadelphia, Vol 32, pp. 317-330, 2016.
3. **Jose-Cunilleras, E. and McKeever, K.H.** Body fluids and electrolytes: responses to exercise and training. *Equine Sports Medicine and Surgery: Basic and Clinical Sciences of the Equine Athlete Second Edition*. Eds: K. Hinchcliff, A. Kaneps, R. Geor, Elsevier, Philadelphia, Section 2, Chapter 38, pp. 837-854, 2014.
4. **McKeever, K.H. and R.A. Lehnhard** Physiology of acid base balance and fluid shifts with exercise. In: *The Athletic Horse, Principles and Practice of Equine Sports Medicine*, 2nd Edition, Eds. D.R. Hodgson, K.H. McKeever, and C.T. McGowan, Elsevier, St. Louis, Section II, Chapters 6, pp. 69-87, 2014.
5. **McKeever, K.H., P. Davitt, and S. Arent.** Hormonal responses to exercise and training. In: *The Athletic Horse, Principles and Practice of Equine Sports Medicine*, 2nd Edition, Eds. D.R. Hodgson, K.H. McKeever, and C.T. McGowan, Elsevier, St. Louis, Section II, Chapters 7, pp. 88-107, 2014.
6. **McKeever, K.H. and R.A. Lehnhard.** Age and disuse in Athletes: Effects of detraining, spelling, injury, and aging. In: *The Athletic Horse, Principles and Practice of Equine Sports Medicine*, 2nd Edition, Eds. D.R. Hodgson, K.H. McKeever, and C.T. McGowan, Elsevier, St. Louis, Section II, Chapters 12, pp. 243-252, 2014.
7. **McKeever, K.H.** Feed Supplements to Maintain Performance and Health, In: *Applied Equine Nutrition and Training – ENUTRACO 2011*, Ed: Arno Lindner, Wageningen Academic Press, Wageningen, Netherlands, pp. 179-191, 2011.
8. **McKeever, K.H.** Endocrine alterations in the equine athlete: an update. *Veterinary Clinics of North America, Equine Practice, Endocrine Diseases*, ed. Ramiro Toribio. Elsevier, Philadelphia, Vol. 27:197-218, 2011.
9. **McKeever, K.H. & M.E. Gordon** Endocrine alterations in the equine athlete. *Equine Exercise Physiology* Eds: K. Hinchcliff, A. Kaneps, R. Geor, Elsevier, Philadelphia, 5.2, 278-304, 2008.
10. **McKeever, K.H.** Body fluids and electrolytes: responses to exercise and training. *Equine Exercise Physiology* Eds: K. Hinchcliff, A. Kaneps, R. Geor, Elsevier, Philadelphia, Chapter 6.1, 328-346, 2008.

11. **McKeever, K.H.** Aging and how it affects the response to exercise in the horse. In: *Equine Geriatric Medicine and Surgery*, Ed: J. Bertone, Elsevier, Philadelphia, pp. 69-78, 2005.
12. **McKeever, K.H.** Does it Work? Testing the efficacy of feed supplements In: *Advances in Equine Nutrition III* Ed. Joseph D. Pagan. Nottingham University Press, Nottingham UK, pp. 65-68, 2005.
13. **McKeever, K.H.** Can feed cause a positive blood test in racehorses? In: *Advances in Equine Nutrition III* Ed. Joseph D. Pagan. Nottingham University Press, Nottingham UK, pp. 68-76, 2005
14. **McKeever, K.H.** Body fluids and electrolytes: responses to exercise and training. *Equine Sports Medicine and Surgery: Basic and Clinical Sciences of the Equine Athlete* Eds: K. Hinchcliff, A. Kaneps, R. Geor, Elsevier, Philadelphia, Chpt. 38, p. 853-871, 2004.
15. **McKeever, K.H. and M.E. Gordon** Endocrine alterations in the equine athlete. *Equine Sports Medicine and Surgery: Basic and Clinical Sciences of the Equine Athlete* Eds: K. Hinchcliff, A. Kaneps, R. Geor, Elsevier, Philadelphia, Chpt. 35, pp. 793-814, 2004
16. **McKeever, K.H.** Exercise physiology of the older horse. In: *Veterinary Clinics of North America: Equine Practice; Geriatrics*, ed. J.M. MacLeay, Saunders, Philadelphia, Vol. 18:469-490, 2002.
17. **McKeever, K.H.** The endocrine system and the challenge of exercise. In: *Veterinary Clinics of North America: Equine Practice; Equine Endocrinology*, eds Messer, N.T. and P.J. Johnson. Saunders, Philadelphia, Vol. 18:321-354, 2002.
18. **McKeever, K.H.** Effect of exercise on fluid balance and renal function in horses. In: *Veterinary Clinics of North America: Equine Practice; Fluids, Electrolytes and Thermoregulation in Horses*, ed. K.W. Hinchcliff. Vol. 14: 23-44, 1998.
19. **McKeever, K.H.** Electrolyte and water balance in the exercising horse, In: *Nutrition Manual for Veterinarians*. American Association of Equine Practitioners and Purina Mills, Inc., St. Louis, Mo. Chapter 10, pp. 79-86, 1997.
20. **McKeever, K.H.**, Water and electrolytes and the prevention of thermal injuries. *Horse Industry Handbook*, American Youth Horse Council, Lexington, Chpt. 8, pp 861-863, 1994.
21. **McKeever, K.H.** Sympatholytic and Sympathomimetics. In: *Veterinary Clinics of North America: Equine Practice; Drug use in Performance Horses*, eds. K. Hinchcliff & R. Sams. Saunders, Philadelphia, Vol. 9, pp 635-647, 1993.

Journal Articles:

Published, in Press, and Submitted:

1. **Rankins, E.M., K.D. Salem, H.C. Manso, K. Malinowski, K.H. McKeever**, Effect of clenbuterol on muscle activity during exercise in Standardbred horses. *Journal of Equine Veterinary Science* (In Press), 2022.
2. **Buchalski, F.M., E.M. Rankins, K. Malinowski, K.H. McKeever**, The effects of an external equine nasal strip on thermoregulation during exercise in horses. *Journal of Equine Veterinary Science* (Submitted and in revision), 2022.
3. **Janabi, Ali H.D., Amy S. Biddle, Kenneth H. McKeever**. The gut microbiome: importance and effectors; *Comparative Exercise Physiology* (Submitted for review), 2021.

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Journal Articles In Preparation:

1. **Rankins, E.M., Manso, Filho, H.C., Yigit, T., Malinowski, K., McKeever, K.H.** Equine muscle activity with induced stride alterations
2. **Klein, D.J., T. Anthony, K.H. McKeever.** Sarco-hER-mesis: Impacts of Exercise and Advanced Age on Sarco-endoplasmic Reticulum Stress and the Unfolded Protein Response in Mammalian Skeletal Muscle. *Journal of Applied Physiology, Nutrition, and Metabolism.* (Completed for submission.
3. **Manso, H.C., E. Rankins, M Davey, A. Page, D. Horohov, K. Malinowski, K. McKeever.** Exercise but not furosemide alters the cytokine response to acute exercise. (To be submitted Journal of Physiology).
4. **Davey, M, H.C. Manso, Filho, E.M. Rankins, K. Malinowski, and K.H. McKeever** Effects of furosemide on the cortisol response to exercise. (To be submitted to Comparative Exercise Physiology).
5. **Manso, H.C. Filho, A. Biddle, A. Johnson, E.M. Rankins, K. Malinowski, and K.H. McKeever.** Effects of exercise and furosemide on the microbiome. (Completed to be submitted Journal of Physiology).

6. **Liburt, N.R., K. Malinowski, and K.H. McKeever.** Response of the equine HPA axis to acute, intense exercise before and after training in old vs. young Standardbred mares. *Journal of Gerontology* (Completed for submission), 2021.
7. **McKeever, K.H., Birks, E.K., Durando, M.M.** Effects of a type-5 phosphodiesterase inhibitor on pulmonary artery pressure in race fit horses. *American Journal of Physiology* (Manuscript in preparation (to be submitted Journal of Applied Physiology)).
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9. **McKeever, K.H., Birks, E.K., Durando, M.M.** Duration of effect of a type-5 phosphodiesterase inhibitor in race fit horses. *Equine Veterinary Journal* (Manuscript in preparation).
10. **McKeever, K.H., T. Bouchard., R.A. Lehnhard, P. Lorimer, C. Prange G.A. Maylin.** Hematologic and antibody tests to detect the administration of human recombinant erythropoietin to horses.(to be submitted to *Journal of Equine Veterinary Science*).
11. **McKeever, K.H., R. Lehnhard, K. Hinchcliff.** Acute volume load during exercise: hemodynamic, ANP, and AVP response in intact and splenectomized horses. *American Journal of Physiology* (Manuscript in preparation).
12. **Liburt, N.R., K. Malinowski, K.H. McKeever.** Response of the hypothalamic-pituitary-adrenal axis and glucose homeostasis during recovery from acute exercise, before and after training in old and young Standardbred mares. *Gerontology* (In Preparation).
13. **McKeever, K.H., J. Axtelle, N. Menon, M. Fugarao** Measurement of aqueous humor osmolality using exercise, hypertonic saline, and lasix in an equine model. *Journal of Applied Physiology* (In Preparation).
14. **Marlin, D., H.M. Clayton, T. Ward, and K.H. McKeever.** Application of 4 dimensional imaging to track back shape changes in a galloping horse. *Equine Veterinary Journal*. (In Preparation).
15. **McKeever, K.H. and R.A. Lehnhard.** Hemodynamics associated with the on and off transients to exercise in the horse. (Manuscript in preparation).
16. **McKeever, K.H., R.A. Lehnhard, K.W. Hinchcliff and R.A. Sams.** Cocaine: Time to peak effect on resting cardiovascular function. (Manuscript in preparation).
17. **Geiser, S., R.A. Lehnhard, K.H. McKeever.** Role of the renin-angiotensin aldosterone cascade in the hemodynamic response to exercise in horses. (Manuscript in preparation).
18. **McKeever, K.H. and R. A. Lehnhard** Plasma volume and electrolyte alterations during submaximal exercise in intact and splenectomized horses. (Manuscript in preparation).
19. **Farris, J.W, R.A. Lehnhard, and K.H. McKeever** Peripheral and central factors in fatigue during exercise: a comparative review *Comparative Exercise Physiol.* ((Manuscript in Preparation).
20. **McKeever, K.H., L.C. Keil, H. Sandler.** Hemodynamic response to different levels of water immersion in denervated monkeys. *Aviation Space and Env. Medicine* (Manuscript in preparation).

Proceedings Articles:

1. **Yigit, T., F. Han, E Rankins, J. Yi, K. McKeever, K. Malinowski** Wearable IMU-based Early Limb Lameness Detection for Horses using Multi-Layer Classifiers , IEEE 18th International Conference on Automation Science and Engineering (CASE), Paper 424, 2022.

2. **Yigit, T., F. Han, E Rankins, J. Yi, K. McKeever, K. Malinowski** Wearable IMU-based Early Limb Lameness Detection for Horses using Multi-Layer Classifiers , IEEE 16th International Conference on Automation Science and Engineering (CASE), Paper 185, pp.1-8, 2020.
3. **McKeever, K.H.** Novo medicamento para tratar Hemorragia pulmonar induzida por exercício (informação de nosso estudo de 4 anos do, Proceedings of Associação Brasileira dos Médicos Veterinários de Equídeos, pp. 50-51, Sao Paulo, Brazil, 2019.
4. **McKeever, K.H.** Testando a eficácia dos suplementos alimentares. Suplementos de alimentação para manter o desempenho e a saúde. Funciona?, Proceedings of the XX Annual Conference of Associação Brasileira dos Médicos Veterinários de Equídeos, p. 51-52, Sao Paulo, Brazil, 2019.
5. **McKeever, K.H.** Fluidos e eletrólitos corporais: respostas ao exercício e treinamento, Proceedings of Associação Brasileira dos Médicos Veterinários de Equídeos, p. 51, Sao Paulo, Brazil, 2019.
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7. **McKeever, K.H.** Recent research testing the efficacy of equine feed supplements. Proceedings of the California Animal Nutrition Conference, Fresno, CA, pp. 147-151, 2014
8. **McKeever, K.H. , R.C. Avenatti, and K. Malinowski** Aging alters thermoregulation and cardiovascular function in Standardbred horses. Abstracts of the Dorothy Russell Havemeyer Foundation Equine Geriatric Workshop II, Page 45, Middleburge, VA, 2014.
9. **Liburt, N.R., K.H. McKeever, D. Smarsh, K. Malinowski** The hypothalamic pituitary adrenal axis response to stimulation tests before and after exercise training in old vs. young standardbred mares Proceedings of the Havemeyer Foundation Geriatric Horse Workshop, page 66, Cummings School of Veterinary Medicine Tufts University, Cambridge, MA, October, 2010.
10. **Liburt, N.R., M.N. Fugaro, R. Geor, D.W. Horohov, A. Betancourt, Raymond C. Boston, K.H. McKeever.** Fat and muscle tissue cytokine profiles, body composition and insulin sensitivity of old vs. young Standardbred mares before and after exercise training. Proceedings of the Havemeyer Foundation Geriatric Horse Workshop, page 67, Cummings School of Veterinary Medicine Tufts University, Cambridge, MA, October, 2010.
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16. **Liburt, N.R., K.H. McKeever, E.K. Wunderlich** Response to Cortisol Stimulation Tests in Old vs. Young Standardbred Mares, *Journal of Equine Veterinary Science*, 29:332-333, 2009.Ms. Liburt received the 1st place prize in graduate student competition for this presentation)
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Other Publications:

1. **McKeever, K.H. and E. McKenzie** Forward. *Comparative Exercise Physiology* 15:147-148, 2019.
2. **McKeever, K.H. and D. Marlin** Forward. *Comparative Exercise Physiology* 9:1, 2013.
3. **McKeever, K.H. and D. Marlin** Forward. *Comparative Exercise Physiology* 8:1, 2012.
4. **McKeever, K.H., L.C. Keil, and H. Sandler.** Intrapericardial denervation: responses to water immersion in rhesus monkeys. NASA - Technical Memorandum: 111729, 1995.
5. **McKeever, K.H.** NJ Department of Agriculture Equine Horse Health Newsletter. Age alters cooling ability in horses during exercise. page 4, 2000.
6. **McKeever, K.H.** *Erythropoietin* NJ Department of Agriculture Equine Horse Health Newsletter. p3, 1998.
7. **McKeever, K.** Equine Exercise Physiology at Ohio State University. *Ohio Thoroughbred Magazine* 17: 62-63, 1987.
8. **McKeever, K.** **Using Your Equine Heart Rate Meter.** *Dressage and Combined Training Magazine*. 25:32-34, 1989.
9. **McKeever, K.H.** Response to Letter to the Editor. *Medicine and Science in Sports and Exercise* 19:524-525, 1987.

Patent

McKeever K.H., W. Franke, R. Rosen, S. Rosen, J. Streltsova, N. Liburt, and Welgen. Compositions and methods for optimizing exercise recovery U.S. Provisional Application No. 60/684,336, February 22, 2007, 20070042972 Class: 514027000, also listed as RU-111.

National and International Presentations and Invited Lectures:

1. **Presenter:** *Duration of effects of a type-5 phosphodiesterase inhibitor* 11th International Conference on Equine Exercise Physiology, Uppsala, Sweden, 2022.
2. **Keynote Speaker:** *A New Treatment For EIPH: The Effect of PD Inhibitors On Pulmonary Artery Pressure in Horses*, Rutgers Equine Science Center - Evening of Science, 2019.
3. **Invited Presentation:** Associação Brasileira dos Médicos Veterinários de Equídeos, *Fluidos e eletrólitos corporais: respostas ao exercício e treinamento*, Sao Paulo, Brazil, 2019.

4. **Invited Presentation:** Associação Brasileira dos Médicos Veterinários de Equídeos, *Novo medicamento para tratar Hemorragia pulmonar induzida por exercício (informação de nosso estudo de 4 anos do EIPHISOL)*, Sao Paulo, Brazil, 2019.
5. **Invited Presentation:** Associação Brasileira dos Médicos Veterinários de Equídeos, *Idade e desuso em atletas: efeitos de destreinamento, ortografia, lesão e envelhecimento. Envelhecimento e como isso afeta a resposta ao exercício no cavalo*, Sao Paulo, Brazil, 2019.
6. **Invited Presentation:** Associação Brasileira dos Médicos Veterinários de Equídeos, *Testando a eficácia dos suplementos alimentares. Suplementos de alimentação para manter o desempenho e a saúde. Funciona?*, Sao Paulo, Brazil, 2019
7. **Invited Seminar:** Papel do Laboratório de Fisiologia do Exercício Equino e do Equine Science Center no desenvolvimento do cavalos atletas, Universidade Federal Rural de Pernambuco, Departamento de Zootecnia, Núcleo de Pesquisa Equina, Recife, Brazil, 2019.
8. **Invited Presentation:** Racing Victoria, the primary sponsor of ICEEPX. McKeever's talk *Thermoregulation in Horses During Exercise*, Racing Victoria Conference for Trainers and Veterinarians, Moonee Valley Racetrack, Melbourne, Australia, 2018.
9. **Presenter:** *Effects of a type-5 phosphodiesterase inhibitor on pulmonary artery pressure in race fit horses*, 10th International Conference on Equine Exercise Physiology, Lorne, Australia, 2018.
10. **Presenter:** *Evaluation of cobalt as a performance enhancing drug in fit Standardbred race horses*, 10th International Conference on Equine Exercise Physiology, Lorne, Australia, 2018.
11. **Invited Lecture:** *Nutraceuticals: the Science Behind Them*. 2nd Simposio Internacional de Nutricion Animal de Biofarma, Rosario, Argentina, 2018.
12. **Invited Lecture:** *From the Laboratory to the Track: Training Horses*. 2nd Simposio Internacional de Nutricion Animal de Biofarma, Rosario, Argentina, 2018.
13. **Invited Expert Panelist:** First Equine International Forum in Dubai at the invitation of the American University of UAE and Sheikh Al Maktoum. Panel 1): Behavior & Psychology, 2017.
14. **Invited Expert Panelist:** First Equine International Forum in Dubai at the invitation of the American University of UAE and Sheikh Al Maktoum. Panel 2): The Future Directions for Research & Education.
15. **Invited Expert Panelist:** First Equine International Forum in Dubai at the invitation of the American University of UAE and Sheikh Al Maktoum. Panel 3): Equine Welfare: Nutrition, Breeding, Doping, and Injuries., 2017.
16. **Invited Lecture:** *Nutraceuticals: a goldmine, but for whom?* ICEEP Midterm International Meeting, Utrecht, Netherlands, 2016 Lecture for veterinarians, 2016.
17. **Invited Lecture:** *Nutraceuticals: a goldmine, but for whom?* ICEEP Midterm International Meeting, Utrecht, Netherlands, 2016 Lecture for physiotherapists.
18. **Invited Lecture:** *The Effect of PD Inhibitors on Pulmonary Artery Pressure: Lessons Learned at the Racetrack* Thirteenth Annual Innovations and Trends in Cardiovascular Care Symposium 2016 - Excellence in Research and Evidence Based Cardiovascular Care: The future is now. Rutgers Robert Wood Johnson Medical School and Robert Wood Johnson University Hospital, 2016.
19. **Invited Lecture:** *Aging, cardiovascular function, and performance in horses*. Faculty of Veterinary Medicine and Animal Science, Swedish University of Agricultural Sciences, Uppsala, Sweden, 2014.
20. **Presenter:** *Hemodynamic and endocrine changes associated with splenic reserve mobilization*. Proceedings 9th International Conference on Equine Exercise Physiology, Chester, England, 2014.
21. **Invited Lecture:** *Recent research testing the efficacy of equine feed supplements*. California Animal Nutrition Conference, Fresno, CA, 2014.

22. **Invited Lecture:** *History of the use of the horse in human medicine: an overview of the ways equine research has benefitted both the athletic horse and humans.* Philadelphia Society for the Promoting of Agriculture, November, 2011.
23. **Invited Lecture:** *Feed Supplements to Maintain Performance and Health,* Equine Nutrition and Training Conference, Institute Curie, Paris France, October, 2011.
24. **Invited Lecture:** *Practical News on Performance Diagnosis and Training of Horses Published in Scientific Literature Between 2009-2011.,* Equine Nutrition and Training Conference, Institute Curie, Paris France, 2011.
25. **Presenter** "Age related decreases in thermoregulation and cardiovascular function in horses" 8th International Conference on Equine Exercise Physiology, Capetown, South Africa, 2010.
26. **Presenter** "Exercise-induced increases in inflammatory cytokines in muscle and blood of horses" 8th International Conference on Equine Exercise Physiology, Capetown, South Africa, 2010.
27. **Presenter** "Cardiovascular Physiology Past and Present" 8th International Conference on Equine Exercise Physiology, Capetown, South Africa, 2010.
28. **Invited Panelist:** *Performance Enhancing Drugs,* Horses 2009 Educational Conference, Rutgers University, 2009.
29. **Invited Panelist:** *Challenges Facing Harness Racing and Integrity of the Sport,* Horse in Harness Expo, Delaware Valley College, 2009.
30. **Invited Lecture:** *The Horse in Biomedical Research,* School of Agriculture, Food Science, and Veterinary Medicine, University College Dublin, Ireland, 2009.
10. **Invited Lecture:** *Nutraceuticals and Performance Horses"* University of Limerick Equine Science Program and the International Equine Institute, Limerick, Ireland, 2009
31. **Invited Lecture:** *An Update on the Effects of Cranberry Extracts on Inflammatory Cytokines Following Intense Exercise in Horses,* Research and Development Associates for Military Food and Packaging Systems, Colorado Springs, Colorado, 2007.
32. **Invited Panelist** *Evolution of the Racehorse: The Barbaro Story,* Darwin Lecture Series at the Franklin Institute Science Museum, Philadelphia, 2006.
33. **Invited Lecture:** *The Horse as an Animal Model for Conducting Studies of the Effects of Nutraceuticals on Performance,* Research and Development Associates for Military Food and Packaging Systems, Lexington, Kentucky, 2005.
34. **Presenter** "Effects of orange peel and tea extract on markers of performance and cytokine markers of inflammation following acute exercise" 19th Equine Science Society Symposium, Tucson, AZ, 2005.
35. **Invited Panelist** *The Hunt for the Red October: Finding the Undetectables-Presentation of EPO research,* Joint Meeting of Harness Tracks of America, Thoroughbred Racing Association, and Racetracks of Canada, Hollywood, FL, 2003.
36. **Invited Panelist:** *Designer Drugs,* Horses 2003 Educational Conference, Rutgers University, 2003.
37. **Invited Panelist:** *Integrity of Equestrian Sport,* Horses 2003-Horse Industry Summit, Rutgers University, 2003.
38. **Panel Moderator:** *Equine Injuries, Lameness & Treatment Options* (panel) Horses 2003 Educational Conference, Rutgers University, 2003.
39. **Invited Paper:** *Does it Work? Testing the efficacy of feed supplements,* Kentucky Equine Research (KER) Equine Nutrition Conference "Nutrition of the Performance Horse-An International Perspective," Lexington KY, 2002.
40. **Invited Paper:** *Can feed cause a positive blood test in racehorses? Some recent information on the effect of dietary supplements on plasma tCO₂ concentration in horses,* Kentucky Equine Research Nutrition Conference "Nutrition of the Performance Horse-An International Perspective.", 2002.

41. **Presenter:** *Plasma aldosterone concentration and renal sodium excretion are altered during the first days of training in horses*, 6th International Conference on Equine Exercise Physiology, Lexington, KY, 2002.
42. **Presenter:** *Workshop on Exercise-Induced Pulmonary Hemorrhage*, 6th International Conference on Equine Exercise Physiology, Lexington, KY, 2002.
43. **Presenter:** *Workshop on Detection of the Administration of Alkalinizing Agents*, 6th International Conference on Equine Exercise Physiology, Lexington, KY, 2002.
44. **Presenter:** *Effect of management practices and training on plasma tCO₂ concentration in horses*” American Society of Animal Science/Canadian Society of Animal Science Mtg, Quebec, 2002.
45. **Presenter:** *Aging-induced alterations in plasma volume in horses*, American College of Sports Medicine National Meeting, Baltimore, MD, May, 2001.
46. **Presenter:** *Role of the renin-angiotensin aldosterone cascade in the pulmonary artery pressure response to exercise in horses*, Am. Physiol. Society - Comparative Physiology of Exercise Symp., Portland, ME, 2000.
47. **Organizer and Presenter:** *Wet lab demonstration of cardiopulmonary measurements in exercising horses*, 20th Association of Equine Sports Medicine International Meeting, New Brunswick, NJ, 2000.
48. **Organizer and Presenter:** *Wet lab demonstration of Evans Blue Dye and Radioimmunoassay extraction techniques*, 5th Conf. of Researchers in Equine Exercise Physiology, New Brunswick, 2000.
49. **Presenter:** *Thermoregulation in old and young horses during exercise*, American College of Sports Medicine National Meeting, Indianapolis, IN, 2000.
50. **Invited Panelist:** *Putting Science into Practice at the Track*, 26th Annual Symposium on Racing, University of Arizona Race Track Industry Program, Tucson, AZ, 1999.
51. **Presenter:** *Extracardiac sensing mechanisms associated with induced fluid shifts*. 4th International Head-out Water Immersion Symposium, Institute for Adaptive and Spaceflight Physiology, Karl-Franzens-Univ., Graz, Austria, 9/1999.
52. **Presenter:** *Training-induced alterations in renal function in horses*, American College of Sports Medicine National Meeting, Seattle, WA, May, 1999.
53. **Presenter:** *Recombinant human erythropoietin administration alters red cell volume and aerobic capacity in Standardbred horses*, 3rd Conference of Researchers in Equine Exercise Physiology Meeting, Pullman, 1998.
54. **Presenter:** *Endocrine response to exercise in young and old female horses*, 5th International Conference on Equine Exercise Physiology, Utsunomiya, Japan, September, 1998.
55. **Presenter:** *Endothelin response to exercise in horses*, 2nd Conference of Researchers in Equine Exercise Physiology Meeting, East Lansing Michigan, November, 1997.
56. **Presenter:** *Chronic somatotropin (eST) administration does not affect aerobic capacity or indices of exercise performance in geriatric mares*, American Society of Animal Science Meeting, Nashville, 1997
57. **Presenter:** *“Exercise capacity in young and geriatric female horses”* 15th Equine Nutrition and Physiological Society Symposium, Fort Worth, Texas, 1997.
58. **Presenter:** *Exercise capacity in young and geriatric female horses*, 1st Conference of Researchers in Equine Exercise Physiology Meeting, Columbus, Ohio, November, 1996.
59. **Presenter:** *Workshop on measurement of maximal aerobic capacity in horses*, 1st Conference of Researchers in Equine Exercise Physiology Meeting, Columbus, Ohio, November, 1996.
60. **Invited Keynote Address:** *Erythropoietin: a new form of blood doping in horses*, 11th International Conference of Racing Analysts and Veterinarians, Gold Coast, Australia, 1996.

61. **Invited Keynote Integrative Paper:** *Neuroendocrine control of blood volume, blood pressure, and cardiovascular function in horses*. 4th International Conference on Equine Exercise Physiology, Brisbane, Australia, 1994.
62. **Presenter:** *Arterial and intracardiac pressure during progressive resistance exercise in ponies*, American College of Sports Medicine Meeting, Indianapolis, Indiana, 1994.
63. **Presenter:** *Effect of erythropoietin on plasma and red cell volume, VO_{2MAX} , and hemodynamics in exercising horses*. American College of Sports Medicine Meeting, Seattle, WA, 1993.
64. **Presenter:** *Fluid and electrolyte shifts during incremental exercise in horses*, 13th Equine Nutrition and Physiology Society Symposium, Gainesville, Florida, 1991.
65. **Presenter:** "Acute volume load during exercise in horses: atrial natriuretic peptide, vasopressin, and hemodynamics." American College of Sports National Medicine Meeting, Orlando, FL, 1991.
66. **Presenter:** *Renal function and atrial natriuretic peptide in horses during submaximal exercise*, 1990 American College of Sports Medicine National Meeting, Salt Lake City, Utah.
67. **Presenter:** *Atrial natriuretic peptide during exercise in horses*, 3rd International Conference on Equine Exercise Physiology. Uppsala, Sweden, 1990.
68. **Expert Panelist:** *Workshop on Performance Testing Methods*, 3rd International Conference on Equine Exercise Physiology, Uppsala, Sweden, 1990.
69. **Presenter:** *Coagulation and fibrinolysis in horses during exercise*, American College of Sports Medicine National Meeting, Baltimore, Maryland, 1989.
70. **Presenter:** *Plasma volume expansion and renal control mechanisms following chronic submaximal exercise training*, 9th Equine Nutrition and Physiology Society Symposium, E. Lansing, MI, 1985.
71. **Presenter:** *Exercise training-induced hypervolemia in greyhound dogs: role of water intake, urine output, GFR, osmolar, and free water clearance*, 1984 Western Section American Society of Animal Science Meeting.

Other Lectures and Presentations:

1. *The Effect of Novel PDE Inhibitors On Pulmonary Artery Pressure in Horses*, Rutgers Department of Kinesiology and Health and Kinesiology and Applied Physiology graduate program seminar, 2019.
2. *Training-Induced Hypervolemia in Humans, Dogs, and Horses: a Comparative and Integrative Approach to Understanding Fluid and Electrolyte*, Graduate Program in Nutritional Sciences, Rutgers University, 2015.
3. *Cranberries, Boots, and Helmets: an Overview of Nutraceuticals for Horses*, Rutgers University Equine Science Center Science Update, 2010.
4. *Three lectures on the comparative aspects of cardiovascular physiology*. Merck, Rahway, NJ, 2010.
5. *An update on nutraceuticals and their effects on fighting inflammation-recent work in horses*, Center for Equine Health and the Kenneth L. Maddy Equine Analytical Chemistry Laboratory, University of California, Davis, 2009.
6. *Functional foods for fighting inflammation-recent work in horses*, Comparative and Evolutionary Physiology Group, Department of Ecology and Evolutionary Biology, University of California, Irvine, 2009.
7. *History of the horse in biomedical research*, Department of Kinesiology and Physical Education, University of Maine, 2009.
8. *Functional foods to fight Inflammation*, Department of Kinesiology and Physical Education, University of Maine, 2009.

9. *Functional Foods for Fighting Inflammation: An Overview of Recent Research on the Use of Nutraceuticals for Equine Medicine & Health*, University of Kentucky, Gluck Equine Center, Department of Veterinary Science, Equine Diagnostic and Research Seminar, 2009.
10. *Recent Studies on the Effects of Aging and Training on the Acute Physiological Response to Exercise in Horses*, Department of Animal Science, Rutgers University, 2008.
11. *Effects of Aging and Training on the Acute Physiological Response to Exercise in Horses*, University of California, Davis, College of Veterinary Medicine, 2008.
12. *History of the Horse as a Model for Human Medical Research*, a fund raising seminar benefitting the Happy Trails Riding Academy a center for therapeutic riding for the handicapped, Visalia California, 2008.
13. *The Horse as an Animal Model for Medical Research*, Rutgers University, Equine Science Center, Inaugural Friends of the Equine Science Center Dinner Lecture, 2008.
14. *Myths and Fallacies of Various Drugs and Nutraceuticals*, University of Limerick, International Equine Institute, Limerick Ireland, 2007.
15. *New Controversies in Equine Drugs and Supplements*, San Luis Rey Equine Hospital and San Diego County Equine Practitioners, 2007.
16. *Myths and Fallacies of Various Drugs and Nutraceuticals*, Rutgers University Equine Science Center Science Update, 2006.
17. *Effects of Cranberry on Markers of Inflammation Following Acute Exercise in Horses, an Update and Plans for Future Research*, United States Army Natick Soldier System Center, Natick, MA, 2006.
18. *EPO Elicits and Ergogenic Effect in Equine*, Tufts Cummings School of Veterinary Medicine, North Grafton, MA, 2006.
19. *Erythropoietin Elicits an Ergogenic Effect in Equine*, Department of Animal Science, Cook College, Rutgers University. 2006.
20. *Nutraceuticals and their effects on performance and inflammation*, Department of Veterinary Physiology, College of Veterinary Medicine, Oklahoma State University, 2006.
21. *Drugs and nutraceuticals Affecting Performance and Inflammation*, Rutgers University Equine Science Center Science Update, 2005.
22. *Physiology of Performance, Past, Present, and Future Research*, Department of Animal Sciences, University of Kentucky, 2005.
23. *Nutraceuticals and their effects on Performance and Inflammation*, Department of Animal Sciences, Texas A and M University, 2005.
24. *The Use of Equine Exercise Stress in Evaluating Nutraceuticals*, Sigma Xi Chapter at the US Army Natick Soldier System Center, Natick, MA, 2004.
25. *Joint Seminar on the Strategy for Selecting Nutraceuticals for Improving Physical & Cognitive Performance*, US Army Natick Soldier System Center, Natick, MA , 2003.
26. *Combined effects of clenbuterol and training on the physiology of the horse*, Kansas State University College of Veterinary Medicine Department of Anatomy and Physiology seminar, 2001.
27. Rutgers Horseman's Management Course, 2001.
28. *Effect of age on thermoregulation in horses*, Cargill Feeds, Inc, 2000.
29. *Drugs and Performance*, Penn-Jersey Extension Partnership Barn Managers Seminar, 1999.
30. *Effects of Enalapril on Performance*, Meril Pharmaceuticals, Ltd. , 1999.
31. *Fluid and Electrolytes for the Exercising Horse*, Purina Horse Mgt. Seminar Series-Centenary College, 1996
32. *Equine Exercise Physiology Research, Teaching, and Outreach at Rutgers*, Cumberland County 4-H, 1996.

33. *Aging and aerobic capacity in horses*, NJ Equine Advisory Board, 1996
34. *Aerobic Capacity Testing using the Equine Treadmill*, NJ Agricultural Experiment Station and the NJ Horse Council, 1996.
35. *Exercise Physiology and Conditioning and Demonstration of Practical Methods for Assessing Fitness*, NJ Agricultural Experimentation Station and NJ Horse Council, 1995.
36. *Neuroendocrine control of blood volume, blood pressure, and cardiovascular function in horses*, Department of Animal Science, Cook College, Rutgers University, 1994.
37. *Neuroendocrine control, erythropoietin and cardiovascular function*, University of Pennsylvania-New Bolton Center, 1994.
38. *Neuroendocrine Control of Cardiovascular Function*, Merck Research Labs, West Point, PA 1994.
39. *Neuroendocrine alterations with acute volume load during exercise* Circulation Technology Division, OSU College of Medicine Senior Seminar, 1994.
40. *Effects of training and rhuEPO on blood volume*, Cal Poly Pomona Equine Exercise Physiology Class and the Southern California Assn. of Racetrack Veterinarians, 1993.
41. *Misuse of Erythropoietin in Racehorses*, OSU Equine Practitioner's Short Course, 1993.
42. *Performance Evaluation*, Ohio State University Practitioner's Short Course, 1990.
43. *Equine Exercise Physiology* OSU Equine Exercise Lab for Otterbein University Equine Science Class, 1989.
44. *Equine Exercise Physiology*, OSU Pre-Veterinary Club, 1989.
45. *Using Heart Rate Monitoring for evaluation Performance*, US Combined Training Assn Area VIII Annual Mtg, 1989.
46. *History of Equine Exercise Physiology*. OSU Equine Practitioner's Short Course, 1989.
47. *Performance Evaluation*", Seminar for Bob Evans Farms 4-H Field Day, 1988.
48. *Heart Rate & Lactate in the Evaluation of Performance*", OSU Horseman's Short Course, 1988.

Undergraduate and Graduate Teaching

Current Assignments:

Fall:	Topics In Equine Science	11:067:401	3 credits (Alt. years)
	Equine Exercise Physiology	11:067:402	3 credits (Alt. years)
	Research in Animal Science	11:067:493	1-3 credits
	Honors Tutorial	11:554:497	1- 3 credits
	GH Cook Honors Research	11:015:497	3 credits
	Advanced Applied Human Physiology	16:572 :512:01	3 credits (Team taught)
Spring:	Integrative Physiology	11:067:300	4 credits
	Research in Animal Science	11:067:494	1-3 credits
	Honors Tutorial	11:015:497	1- 3 credits
	GH Cook Honors Research	11:015:498	3 credits

Course Descriptions:

Rutgers, 11:067:142, Fall, 2003-2010. (3 credits) Introduction to Animal Science. *Coordinated course and lectured as part of this team taught course while Dr. Jesse was on sabbatical leave in 2003; lectures in 2004-2009.*

Rutgers, 11:067:175, Spring, 1998, (1 credit) Animal Handling, Fitting, and Exhibition - Horse section, *Coordinated course while Dr. Ralston was on sabbatical leave.*

Rutgers, 11:067:207, Spring, 1998, (2 credits) Horse Practicum, Coordinated course while Dr. Ralston was on sabbatical leave.

Rutgers, 11:067:300, Spring, 2018-present, (4 credits) Integrative Physiology Lecture and Recitation (Student rating 4.69/5.0).

Rutgers, 11:067:401, Fall, 1996-present. (3 credits) Topics in Equine Science. *This class teaches the students the basics of scientific method using lectures and discussions to compare and contrast articles from the current Equine Sports Science literature. By the end of the semester students can critique studies like journal referees pointing out the good and bad of various papers including the professor's. Offered every other year. (Student rating 5.0/5.0).*

Rutgers, 11:067:402 Spring, 1996-present. (3 credits) Equine Exercise Physiology. *Developed and taught an upper division course in the physiology of the equine athlete. The class uses a modular format to present the integrative and comparative aspects of the physiology of the equine athlete. (Student rating 5.0/5.0).*

Rutgers, 11:067:403 Fall and Spring, 2007-2018. (3 credits) Techniques in Equine Exercise Physiology. *Developed and taught this upper division laboratory course. Developed this course to teach the concept of hypothesis driven research, sound study design and the basis for the techniques used in Equine Exercise Physiology. (Student rating 5.0/5.0).*

Rutgers, 16:067:508 and UMDNJ PHYS 5508 Spring, Ongoing (3 credits) 10-15 Students. Graduate Course in Equine Exercise Physiology. *Developed and taught this upper graduate course in the physiology of the equine athlete. The Department of Exercise and Sport Sciences used this class as an elective.*

Rutgers, 11:067:493, Fall Semester, (Variable credits) Research in Animal Science. *8 to 20 students serves as an experiential techniques class for Animal Science majors as well as non-majors. Students learn about horse behavior and how to safely handle horses as well as the techniques involve in conducting exercise physiology research. The goal is to have each student learn the many techniques used in setting up and conducting a high speed treadmill test. Student learn about the scientific method, they learn sterile technique and how to place catheters, they learn each of the jobs necessary to conduct a test, and they learn to collect blood, urine, and other samples and to perform various assay. Many students sign up for multiple semesters.*

Rutgers, 11:067:494, Spring Semester, (Variable credits) Research in Animal Science. 8 to 20 students. *This class is the second semester of an experiential techniques class for Animal Science majors as well as non-majors as described above. Class enrollment ranges from 8 to 15 students.*

Rutgers, 11:015:497 and 11:015:498, Fall/Spring (3-12 credits) G.H. Cook Honors Program: Advisor and/or reader for independent study project/course work of students conducting senior honors projects.

Rutgers, 11:199:303 and 11:199:403, Cooperative Education. Sponsor for students earning credit in full and part-time field experiences. Supervised employment in an area of interest to the student.

Rutgers, 11:554:497 Fall, Spring, Ongoing. Honors Tutorial. Mentoring of Cook Undergraduate General Honors Program students independent research projects.

Rutgers, 11:015:497 Fall, Spring, Ongoing. Biology Honors. Mentoring of Biological Science Undergraduate Honors Program students independent research projects.

Rutgers, 16:076:502, Spring, 1998, 1999, 2000. Mammalian Physiology. Lectures on renal function.

Rutgers, 16:067:693/694, 1997-1999, Fall 2006. Seminar in Animal Science. Coordinator of the graduate seminar for the Department of Animal Science.

Rutgers, 16:067:701, Fall, Spring, Ongoing. Research in Animal Science. Mentoring of graduate student research..

University of Delaware, Fall, 2002, 2003, Equine Science, Lectures on Equine Exercise Physiology.

Delaware Valley College, Winter, 1998, Anatomy and Physiology, Lectures on cardiopulmonary function. Part of Mid-Atlantic Consortium of the Kellogg Initiative.

University of Pennsylvania, VCSN648, Winter 1996-2008. 20-30 Students. Equine Exercise Physiology class. Provided lectures to Jr/Sr veterinary students at the New Bolton Center.

Ohio State University VCS 696, Spring, 1991, 1992, 1993, 1994, Equine Exercise Physiology Elective. Co-developed and co-taught this class to 20 Soph/Jr Vet. students and Graduate students.

OSU HPER 714, Spring, 1993, 1994, Advanced Exercise Physiology, Responses and Adaptation to Exercise. Team taught with Drs. Lamb, Alway, and Kirby. 10 graduate students.

OSU HPER 801, Winter, 1994, Exercise Physiology, Metabolism, Temperature, Water & Electrolyte Balance. Taught with Dr. W.M. Sherman. 12 graduate students.

OSU HPER 886, Winter, 1994, Exercise Physiology Colloquium, Lecture on "Intercardiac pressure during resistance exercise" 25-30 graduate level students.

OSU VPP 411, Winter, 1993, 1994, Veterinary Physiology; Lectures on renal function and endocrine (aldosterone, vasopressin, atrial natriuretic peptide, and plasma renin activity) control. 30-45 students.

OSU VM 602, Winter, 1991, 1992, 1993, 1994, Urinary Physiology Team: Lectures on renal physiology ~125 veterinary students.

OSU VM 600, Fall, 1992, 1993, Cardiovascular System. Taught laboratories designed to demonstrate cardiovascular control. 10 contact hrs, 125 students.

OSU HPER 886, Fall, 1991, Exercise Physiology Colloquium, Lecture on "Acute volume load during exercise in horses" 25-30 graduate level students.

OSU VCS 710.05 and OSU VCS 710.06, F, Wtr, Spr, Su 1988-1991, Clinical instruction and experience at Equine Exercise Physiology Lab.

OSU HPER 886, Fall, 1990 Exercise Physiology Colloquium: Lecture on "Renal Function During Exercise in Horses", 25-30 graduate level students.

OSU VCS 731, Spring, 1989 and 1990, Equine Medicine Elective- Lecture on Performance Evaluation in 1989. In 1990 developed and coordinated class "Topics in Equine Sports Medicine".

OSU HPER 886, Spring, 1989, Exercise Physiology Colloquium, Lecture and lab demonstration at Equine Exercise Physiology Laboratory. 25-30 graduate level students.

OSU HPER 886, Winter, 1988, Exercise Physiology Colloquium, Lecture on "Exercise-induced hypervolemia in horses" 25-30 graduate level students.

OSU Internal Medicine 850.02, Fall, 1987 Cardiology Resident's Conference, College of Medicine. Cardiovascular, renal, and endocrine responses to water immersion. 25 students.

OSU Autotutorial: Review of Cardiovascular Physiology. McKeever, K., J. Bonagura, and W. Muir.

University of Arizona, AS 470, Spring 1982, 1983, 1984, Horse Farm Management Lab, Lectures and Laboratory Sessions on Horse Farm Management Practices. 25 students.

Graduate Student Advising:

- 2015 **Full Member**. Graduate Program in Nutritional Sciences, Rutgers, The State University of New Jersey, New Brunswick, NJ.
- 2014 **Full Member**. Graduate Program in Microbial Biology, Rutgers, The State University of New Jersey, New Brunswick, NJ.
- 2012 **Full Member**. Graduate Program in Kinesiology and Applied Physiology, Rutgers, The State University of New Jersey, New Brunswick, NJ.
- 2006 **Full Member**. Graduate Program in Physiology and Integrative Biosciences, Rutgers, The State University of New Jersey, New Brunswick, NJ.
- 1995 **Full Member**. Graduate Program in Endocrinology and Animal Biosciences, Rutgers, The State University of New Jersey, New Brunswick, NJ.

Ph.D. Students

Rutgers University:	Jonathan Hummel	Co-Major Advisor (2021-present)	
Rutgers University:	Ellen Rankins	Co-Major Advisor (2018-present)	
Rutgers University:	Dylan Klein	Co-Major Advisor (2014-2018)	<i>Assistant Professor, Rowan University.</i>
Rutgers University:	Ali Janabi, DVM	Major Advisor (2014-2016)	<i>Assistant Professor, College of Veterinary Medicine, Al-Qadisiya University, Al-Diwaniya, Iraq.</i>
Rutgers University:	Ryan Avanetti	Co-Major Advisor (2009-2014)	<i>Project Director at Kindred Biosciences, LLC</i>
Rutgers University:	Nettie Liburt	Major Advisor (2007-2010)	<i>Director of Equine Research and Development at Blue Seal Feeds.</i>
Rutgers University:	Mary Beth Gordon	Major Advisor (2002-2005)	<i>Director of Equine Nutrition Research and Development at Land O' Lakes Purina</i>
Rutgers University:	Helio Manso, DVM	Major Advisor (2002-2005)	<i>Professor, Universidade Federal Rural de Pernambuco</i>
Rutgers University:	Charles Kearns	Major Advisor (1996-2001)	<i>Scientific Director at Medscape</i>
Ohio State University:	Ken Hinchcliff,	Co-Major Advisor (1987-1990)	<i>President and CEO (Warden) Trinity College at the University of Melbourne; Formerly Dean of the College of Veterinary Medicine University of Melbourne</i>

Rutgers University:	Gregory Pappas	Committee Member (2020-Present)
Rutgers University:	Brittany Bozzini	Committee Member (2019-2020)
Rutgers University:	David Sanders	Committee Member (2016-2020)
Bharathiar University:	Prince Vivek	External Reader (2018-2019)
Rutgers University:	Joseph Pellegrino	Committee Member (2018-2019)
Rutgers University:	Bridget McFadden	Committee Member (2016-2019)
Rutgers University:	Alan Walker	Committee Member (2016-2019)
Rutgers University:	Marc Turzon	Committee Member (2014-2015)
Rutgers University:	Patrick Davitt	Committee Member (2010-2013)
Rutgers University:	Emily Lamprecht	Committee Member (2006-2007)
Rutgers University:	Paula Marie Ward	Committee Member (1995-1997)
Rutgers University:	Angela Black, DVM	Committee Member (1996)
Swedish University of Agricultural Sciences	Sara Ringmark	Dissertation Defense "Opponent" (2014)
University of Maine	Amy Hoffman	Committee Member (2010-2018)
University College Dublin	Rita Garcia da Fonseca	External Committee Member (2011)
University of Guelph	Shannon Pratt	Defense External Committee Member (2005)
University of Sydney	Mathew Gerard	Dissertation External Reviewer, (2001)
University of Helsinki	Ulla-Maija Kokkonen	Dissertation External Reviewer, (2001)
University of South Florida	Todd Samelman	Chair, Dissertation Committee (2000)
Ohio State University:	Brian Roche	Committee Member (1999-2000)
Ohio State University:	James Schlub	Committee Member (1992)
Ohio State University:	James Farris	Committee Member (1989-1994)
Ohio State University:	Maurie Leutkemeier	Committee Member (1987)
<u>Masters Degree Students</u>		
Rutgers University:	Maddison Davey	Major Advisor (2019-2021)
	James Baldassari	Major Advisor (2005-2010)
	Sara Malone	Major Advisor (2005-2008)
	Jennifer Stretslova	Major Advisor (2003-2005)
	Cynthia Betros	Major Advisor (2001-2005)
	Nettie Liburt	Major Advisor (2003-2005)
	Sunny Geiser	Major Advisor (1997-2003)
	Jacqueline Agans	Major Advisor (1996-1998)
	Rosanna Scali	Major Advisor (1996-1998)
	Elizabeth Kuhns	Major Advisor (1996)
	Christopher Ordway	Committee Member (2019-2020)
	Anthony Poyssick	Committee Member (2016-2018)
	Meaghan Rabideau	Committee Member (2015-2019)
	Alan Walker	Committee Member (2012-2014)
	Lyn Venham	Committee Member (1996-1998)
University of Maine	Travis Bouchard	Committee Member (2011-2012)
University of Limerick	Julia Luehr	External Examiner (2010)
Ohio State University:	Beth McNally	Major Advisor (1992-1994)

Clara Fenger,	Major Advisor (1991-1993)
Jodi Cooley	Co-Major Advisor with D.R. Lamb
Rick Wemple	Committee Member (1993-1994)
Laura Mitten	Committee Member
Susan Holcombe	Committee Member
Marge Bernbaum	Committee Member
John Mauterer	Committee Member
Scott Hannum	Research Supervisor

Post-Doctoral (OSU)

Alisa Herbst, PhD	2022- Present
Robert Heck, M.D. Robert Whitehead, M.D. Wayne Auge, M.D.	1992-1995 - Co-Advised these three residents with Dr. John Lombardo, Director of Sports Medicine at OSU, where we collaborated in the development a model for progressive resistance exercise training using ponies.
Frank Andrews, DVM	1987-1988 - Six month position to assist in the OSU Equine Exercise Physiology Lab

Visiting Professor

Helio Manso, DVM	2019-2020	<i>Professor, Universidade Federal Rural de Pernambuco</i>
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Undergraduate Student Advising:**Rutgers University**

1. I serve as advisor for approximately 20 Sophomore to Senior undergraduate Animal Science students.
2. 1997-2011 Served as one of three Freshman advisors (20-30 students/year).
3. From 1996-1999 I served as an adjunct member of the Cook Scholars Program Committee reviewing applications, chairing presentation session, and reviewing final versions of the GH Cook thesis papers..
4. I have served as GH Cook Scholars Program research advisor or reader for the following students:

Paula Augustin	2022 - Cook Scholars Program Advisor
Ragavi Raman	2022 - Cook Scholars Program Reader
Sarah Florentine	2021 - Cook Scholars Program Reader
Rhys Hagen	2021 - Cook Scholars Program Advisor
Francesca Buchalski	2021 - Cook Scholars Program Advisor
Kamila Cieslik	2020 - Cook Scholars Program Reader
Kayla Salem	2019 - Cook Scholars Program Advisor
Yassin Salah	2019 - Cook Scholars Program Advisor
Camille Duchamp	2019 - Cook Scholars Program Advisor
Samantha Wallace	2018 - Cook Scholars Program Advisor
Rita Baroto	2016 - Cook Scholars Program Advisor
Yee (Mike) Che	2016 - Cook Scholars Program Reader
Cheryl Harvey	2015 - Cook Scholars Program Advisor
Brittany Bozinni	2014 - SAS Senior Honors Thesis Reader
Amanda Xue	2014 - Cook Scholars Program Advisor
Jesse Liou	2013 - Cook Scholars Program Reader
Caitlin Belding	2009 - Cook Scholars Program Advisor
Jessica Aulisio	2009 - Cook Scholars Program Advisor
Jennifer Zambito	2008 - Cook Scholars Program Advisor
Allison Walker	2008 - Cook Scholars Program Advisor
Victoria Shekk	2007 - Cook Scholars Program Reader

Jessica Roos	2007 - Cook Scholars Program Advisor
Tom Caltabilota	2006 - Cook Scholars Program Advisor
Justin Milizio	2006 - Cook Scholars Program Advisor
Tiffany Trotter	2005 - Cook Scholars Program Advisor
Melissa Gates	2005 - Cook Scholars Program Reader
Courtney Dean	2004 - Cook Scholars Program Advisor
Cindy Echevarria	2003 - Cook Scholars Program Advisor
Melissa Lee	2003 - Cook Scholars Program Advisor
Jessica Alberici	2003 - Cook Scholars Program Advisor
Zenithson Ng	2003 - Cook Scholars Program Advisor
Denise Ciolino	2002 - Cook Scholars Program Advisor
Robert Norton	2002 - Cook Scholars Program Advisor
Elsa Schock	2002 - Cook Scholars Program Reader
Valerie Balaskonis	2001 - Cook Scholars Program Advisor
Amanda Szucsik	2001 - Cook Scholars Program Advisor
Maggie Struck	2001 - Cook Scholars Program Advisor
Taryn Eaton	1999 - Cook Scholars Program Advisor
Jamie Elia	1999 - Cook Scholars Program Reader
Lisa Antas	1996 - Cook Scholars Program Advisor
Jackie McClain	1996 - Cook Scholars Program Reader
Rebecca Fays	1996 - Cook Scholars Program Reader

Ohio State University--Students who were mentored and assisted in my lab at OSU:

Doug Finley	Student Lab Assistant (Exercise Physiology Student)
Crystal Ponser	Work Study Supervisor (Currently a practicing veterinarian)
Michael Howenstein	Work Study Supervisor (Currently a practicing veterinarian)
Melorie Kip	Work Study Supervisor
Arabella Nuygen	Work Study Supervisor
Toby Burke	Work Study Supervisor
Kevin Kirby	Student Lab Assistant (Aerospace Engineering Student)
Eric Rennie	Student Lab Assistant (Exercise Physiology Student)
Richard Yurich	Advised & sponsored for admission to Exer. Physiol. Prgm
Shelly Zimmerman	Work Study Supervisor (Vocational Agriculture Instructor)
Veronica Wong	Work Study Supervisor (Currently a practicing DVM)
Laura Schmidt	Work Study Supervisor (Currently a practicing DVM)

High School Students

I believe one should strive to provide educational opportunities to recruit minority and women students into the biomedical sciences. The following students have participated in Summer research programs in my laboratory:

Rutgers:

Shanta Jones	1999	American Chemical Society Seed Program - Mentor
Vivek Sharma	1998	American Chemical Society Seed Program - Mentor
Yanerez Diaz	1997	American Chemical Society Seed Program - Mentor
Tiffany Horton	1996	NJAES-Cook College Discovery Academic Enrichment Program Mentor
Natalie Ogonowski	1996	NJAES-Cook College Discovery Academic Enrichment Program Mentor
Edina Montanaro	1996	NJAES-Cook College Discovery Academic Enrichment Program Mentor
Arpana Pillay	1996	American Chemical Society Seed Program - Mentor

Ohio State University:

Alpha Griffin	1993	NIH-Summer Minority Research Apprenticeship Program.
Suprina Nindra	1992	NIH-Summer Minority Research Apprenticeship Program. Won best presentation

award for students working in the College of Veterinary Med.

Danielle Ginn	1991	NIH-Summer Minority Research Apprenticeship Program
Lannelle Williams	1990	NIH-Summer Minority Research Apprenticeship Program

Student Organizations

Faculty Advisor for the Rutgers Water Polo Club (20 students).

Faculty Advisor for the OSU Men's Water Polo Club (25 students).

Faculty Advisor for the OSU Women's Water Polo Club (15 students).

Service

Reviewing and Editorial Service:

Editorial Advisory Boards

2021-Present	Review Editor - Animals
2018 -Present	ICEEP Editorial Committee - Comparative Exercise Physiology
2017-Present	Editorial Board of the Al-Qadisiya Journal for Veterinary Medical Sciences
2012-Present	Editor-in-Chief - Comparative Exercise Physiology.
2011-Present	Review Editor - Frontiers in Exercise Physiology
2004-Present	Editor-in-Chief - International Journal of Kaatsu Training Research
1997-Present	Editorial Board-Journal of Equine Veterinary Science.
2006-2011	North American Editor - Comparative Exercise Physiology (formerly, Equine and Comparative Exercise Physiology)
2007-2011	The Open Veterinary Science Journal
2009-2011	Editorial Board-Journal of Animal Science
2003-2010	Editorial Advisory Board - The Veterinary Journal.
2006-2009	Editorial Board - Domestic Animal Endocrinology.
2006-2009	Executive Board-The Veterinary Journal (formerly The British Veterinary Journal).
2002-2005	Editorial Board-Equine and Comparative Exercise Physiology - The International Journal of Animal Exercise Physiology, Biomechanics, and Nutrition..
2001-2002	Editorial Board-Equine Science International
1999-2001	Board of Scientific Reviewers - American Journal of Veterinary Research
1993	Exercise Physiology Section Editor - Proceedings 13th Equine Nutrition and Physiological Society Symposium.

Grant Proposal Referee

2022	Proposal Referee, Mitacs Accelerate - Canada
2022	Proposal Referee, National Science Center of Poland
2005-Present	Proposal Referee, Georgian National Science Foundation (GNSF)
2011-2013	Proposal Referee, Romanian National Council for Scientific Research
2009	Proposal Referee, American Heart Association
2003	Proposal Referee, Horserace Betting and Levy Board, Veterinary Advisory Committee, London, UK
2003	Proposal Referee, Austrian Science Fund (FWF)
2002	Proposal Referee, University of Guelph/OMAFRA/EP Taylor/OHRIA Equine Research Program
1988	Proposal Reviewer - State of Minnesota Racing Commission.

Ad Hoc Scientific Journal Referee

Physiological Reports, Journal of Functional Foods, Medicina, PLOS ONE, Journal of Animal Science - Europe; Animals; Journal of Animal Science and Biotechnology; Frontiers in Physiology, Biosensors; Diabetes Research and Clinical Practice; Journal of Diabetes Science and Technology; Pharmacology and Experimental Therapeutics; Animal: An International Journal of Animal Bioscience; Biopolymers; Muscle and Nerve; Equine Veterinary Education; Canadian Journal of Applied Physiology; Medicine and Science in Sport and Exercise; Veterinarni Medicina (Vet Med - Czech) International Journal for Veterinary and Biomedical Sciences; Domestic Animal Endocrinology; Editorial Board-Equine and Comparative Exercise Physiology; British Journal of Sports Medicine; The Veterinary Journal (formerly The British Veterinary Journal); Journal of Applied Physiology; American Journal of Physiology; Journal of the American Veterinary

Medical Association; Equine Veterinary Journal, International Journal of Sports Medicine; Journal of Veterinary Internal Medicine; Journal of Equine Veterinary Science; Respiration Physiology; Sports, Horse Industry Handbook; Cornell Veterinary Journal, Refereed Proceedings 3rd International. Conference on Equine Exercise Physiology ; Exercise Physiology Section-Proceedings 12th Equine Nutrition and Physiological Society Symposium; Abstract Referee - American College of Sports Medicine, 1994 and 1995 Programs; Abstract Referee - Equine Nutrition & Physiological Society Symposium, 1991, 1993, 1995, 1997, 1999, 2001, 2003, 2005.

Other Service and Professional Assignments:

External Service to the Equine Industry and the Academic Community

2022	Session Chair - Biochemistry, Haematology, Endocrinology, Thermoregulation Session; Applied Physiology - Genetics Session; Applied Physiology - Drugs and Performance Session; Nutrition Session; 11 th International Conference on Equine Exercise Physiology, Uppsala, Sweden.
2022	Interview for the Albany Times on performance enhancing drugs.
2019-Present	Equine Science Society Membership Committee
2019-2021	Past-President - Equine Science Society
2019	Session Chair - 26 th Equine Science Society Symposium, Asheville, NC.
2018	Session Chair - Biochemistry, Haematology, Endocrinology, Thermoregulation Sessions I & II 10 th International Conference on Equine Exercise Physiology, Lorne, Australia.
2017-2019	President - Equine Science Society
2017-2019	Member - Cardiovascular Section Development Committee of the American Physiological Society
2018	Interview for Sports Illustrated regarding the Kentucky Derby
2015-2017	Member - Animal Care and Experimentation Committee of the American Physiological Society
2015-2017	Vice President and Program Chair- Equine Science Society
2014	Session Chair - Physiotherapy, Rehabilitation & Performance Section, 9th International Conference on Equine Exercise Physiology, Chester, England.
2014	Expert Scientific Witness - provided key testimony on behalf of the New York Standardbred Owners Association at the New York Gaming Commission Hearing on "Proposed Adoption of Controlled Therapeutics Medication" rules published in the December 4, 2013 State Register at pages 17-35.
2014	Interview for Equus Magazine on exercise for the older horse.
2013-2015	Secretary Treasurer- Equine Science Society
2013	Interview for DVM Magazine regarding EPO and blood doping.
2012	Series of interviews for the New York Times regarding drug use in race horses.
2010	Extended interview for MSNBC Online regarding the physiology of race horses, a story coordinated with the release of the movie Secretariat.
2010	USDA External Review Panel - 2010 review of the research, teaching, and outreach program of the Department of Animal Sciences at the University of Maine.
2009-2010	Co-Editor and Co-Session Chair Cardiovascular Section, 8th International Conference on Equine Exercise Physiology, Capetown, South Africa.
2009-2013	Board of Directors Equine Science Society.
2009	Graduate Competition Judge Exercise Physiology - 21st Equine Science Society Symposium
2008-2011	External Examiner - Equine Science Program, University of Limerick.
2007-2013	Nominating Committee - Equine Science Society.
2007	Expert Witness - New York Racing State Racing and Wagering Board.
2006-2008	Expert Witness/Consultant - Delaware Standardbred Owners Association.
2006-present	Expert Witness/Consultant - Various private plaintiff and defense counsel.
2003-2005	Representative - Racing Medication and Testing Consortium.
2002-2004	Representative- New Jersey Department of Agriculture Equine Advisory Board.
2001-2011	Expert Panelist - NY State Racing and Wagering Board Medication Advisory Committee.
2000-2004	Expert Witness -Maryland Attorney General and the Maryland Racing Commission.
1998-2013	Expert Witness/Consultant -New Jersey Attorney General/NJ Racing Commission.

- 2006 Television interview for “Pet Stop” on News 12 New Jersey.
- 2006 Extended interview for an American Physiological Society press release on the physiology of the Kentucky Derby. Item published in online and paper outlets.
- 2005 Session Chair - Exercise Physiology, 19th Equine Science Society Symposium.
- 2005 Graduate Competition Judge (Production & Extension)-19th Equine Science Society Symposium.
- 2005 Chair - Exercise Physiology Program Committee, 19th Equine Science Society Symposium.
- 2003 Extended interview regarding test for EPO misuse for Equus Magazine.
- 2003 Extended interview regarding test for EPO misuse for The Blood-Horse Magazine.
- 2003 Session Chair - Exercise Physiology, 18th Equine Nutrition & Physiology Society Symposium.
- 2002 Session Chair - 6th International Conference on Equine Exercise Physiology, Lexington, Kentucky.
- 2001 Interview for article on clenbuterol for Equus Magazine.
- 2001 Interview for article on clenbuterol for the Horsemen’s Journal.
- 2000 Conference Host and Organizer - 20th Association of Equine Sports Medicine meeting, New Brunswick, NJ.
- 2000 Conference Host and Organizer - 5th Conference of Equine Exercise Physiology Researchers, New Brunswick, NJ.
- 1998 Session Chair, Cardiovascular Physiology, 5th International Conference on Equine Exercise Physiology, Japan.
- 1996-2000 Organizing Committee - 1st - 4th Conferences of Equine Exercise Physiology Researchers, Columbus, OH, E. Lansing, MI, Pullman, WA, and Rutgers.
- 1996-2000 Horse Judge, NJ Department of Agriculture Festival of Horses, Standardbred show.
- 1996-2003 Cook College Campus Agricultural Animal Faculty Advisory Committee.
- 1993-2000 NIH/ADAMAHA Peer Review Consultant
- 1993-1997 Awards and Graduate Student Competition Committee, Equine Nutrition and Physiological Society.
- 1990-1995 Editorial Committee - Horse Industry Handbook
- 1993 Invited Panelist - Rolex Kentucky Horse Park 3-Day Event Symposium on Exercise Physiology Research Directions for the 1996 Olympics in Atlanta.
- 1993 Chair - Exercise Physiology Program Committee 13th Equine Nutrition and Physiology Society Symposium.
- 1990 Invited Panelist - Symposium on Exercise Testing Methods - 3rd ICEEP, Uppsala, Sweden (One of 5 panelist from around the world invited to sit on this committee)
- 1988 Lecturer - American Heart Association Central Ohio Affiliate Speakers Bureau.
- 1988 Question Writer-American College of Veterinary Internal Medicine Qualifier Exam.
- 1988 Interview for article in Practical Horseman Magazine.

Service to the University

- 2017-Present Chair - Athletics Affairs Committee - New Brunswick Faculty Council, Rutgers, the State University of New Jersey
- 2017-Present Member - NBFC ad-hoc committee on Organizational Structure, Roles, and Responsibilities.
- 2011-Present Member Rutgers University Institutional Animal Care and Use Committee.
- 2009-Present University College Community Volunteer Veteran-Mentoring Program.
- 2001-Present Department Representative - New Brunswick Faculty Council, Rutgers University.
- 2000-Present Senator - University Senate, Rutgers, the State University of New Jersey.
- 2000-Present Member - University Senate Budget and Planning Committee.
- 2019-2022 Executive Committee - New Brunswick Faculty Council, Rutgers University.
- 2018-2019 Member - University Promotion Grievance Committee
- 2011-2018 Faculty Mentoring Committee for Dr. Brandon Alderman, Assistant Professor Department of

	Exercise and Sport Studies.
2011-2018	Faculty Mentoring Committee for Dr. Sarah Chelland Campbell, Assistant Professor Department of Exercise and Sport Studies.
2008-2016	Promotion and Reappointment Committee (Arent, Alderman, Henderson, Campbell) Department of Exercise and Sport Studies.
2006-2017	Chairman - Student Affairs Committee - New Brunswick Faculty Council, Rutgers, the State University of New Jersey
2007-2016	Executive Committee - New Brunswick Faculty Council, Rutgers University.
2011-2013	Faculty Mentoring Committee for Dr. Gregory Henderson, Assistant Professor, Department of Exercise and Sport Studies.
2011-2012	Executive Committee - Rutgers University Senate
2011-2012	Past-Chairman-New Brunswick Faculty Council, Rutgers University
2010-2011	Chairman - New Brunswick Faculty Council, Rutgers University
2009-2010	Vice Chairman - New Brunswick Faculty Council, Rutgers University.
2001-2005	Member - Graduate and Professional Studies Committee - New Brunswick Faculty Council, Rutgers, the State University of New Jersey.

Service to the College

2013-2016	Structure and Governance Committee, School of Environmental and Biological Sciences.
2009-2010	Search committee for three faculty positions - Exercise Science and Sport Studies.
2000-2001	Rutgers-NJAES Strategic Planning Sub-Committee.
2002-2003	Cook College Admissions and Scholastic Standing Committee.
1996-98, 2003	Cook Scholars Program, session chair.
1996-1998	George H. Cook Honors Program Adjunct Committee Member.
1993	Faculty Search Committee - Appointed by the OSU Vice President for Student Affairs to fill position of Director of Recreation and Intramural Sports.
1989	Faculty Search Committee - School of Health, Physical Education, Recreation, OSU.
1988-1994	Ohio State University Alice L. Finley Memorial Research Center Committee.
1988-1990	Coordinator of the Comparative Physiology and Pharmacology Seminar.

Service to the Department

2021	Member Animal Science Department Research Strategic Planning Committee
2014-Present	Chair Admissions Committee - Kinesiology and Applied Physiology Graduate Program, Rutgers University.
2014-2021	Member Curriculum and Standards Committee - Kinesiology and Applied Physiology Graduate Program, Rutgers University.
2016	Faculty Search Committee - Non-Tenure Track Teaching position.
2013	Reappointment Reading Committee (Roepke)
2008-2009	Faculty Search Committee - Three positions for the Endocrine cluster hire
2005-2008	Department Chair's Advisory Committee
2005-2006	Chair Standards Committee - Animal Science Graduate Program, Rutgers University.
2002-2006	Member - Standards Committee - Animal Science Graduate Program, Rutgers Univ..
1998-2003	Animal Science Graduate Program Admissions Committee.
2001	Faculty Search Committee - Genetics/Genomics Position.
2001	Faculty Search Committee - Endocrinology/Transgenics position.
1989	Faculty Retreat Graduate and Residency Program Review Committee.

Consulting and Outside Service:

Expert Witness - Queensland (Australia) Racing Integrity Commission *Provided analysis and a report for the prosecution of multiple trainers.*

Expert Witness - Comedy Hill Racing Stable vs. Robert McIntosh Racing Stable, et al., American Arbitration Association Case No.: 50 181 R 00081 07 *Provided key reports and consultation that contributed to achieving*

a settlement in this case.

Expert Witness - Two Defense cases vs. the Texas Racing Commission - *Provided key testimony that led to two victories in these "Milkshaking"/alkalinizing agent cases against the Texas Racing Commission.*

Expert Witness - Maryland Attorney General/Racing Commission - *Provided key testimony that led to a victory in this test case for the alkalinizing agent detection program for Maryland both at the trial level, at the appellate level, and the MD Supreme Court.*

Expert Witness - New Jersey Attorney General/Racing Commission - *Provided key testimony that led to a victory in this test case for the alkalinizing agent detection program bot at the trial court level and at the NJ Supreme Court. Approximately 50 other cases held behind this case.*

Expert Witness - New York State Racing and Wagering Board - *Provided key testimony that led to victories in five alkalinizing agent ("Milkshaking") cases.*

Expert Witness - Delaware Standardbred Owners Association - *Provided key information and analysis to help find the reason for a major series of milkshaking inadvertent positives.*

Expert Witness - Trader vs. the Delaware Racing Commission - *Provided information and analysis that suggested that the positive test for milkshaking was due to inadvertent application of legal treatments affecting bicarbonate status. The testimony was key to the reversal of penalties in this case.*

Expert Witness - Warrington vs. the Delaware Racing Commission - *Provided information and analysis.*

Expert Witness - Comedy Hill Stables vs. multiple defendants - *Provided key information and analysis that suggested that the positive test for rhuEPO was due to administration prior to acquisition of the horses by the current owners.*

Expert Consultant - Office of the Camden County Prosecutor. *Provided key information for regarding a guanabenz case.*

Expert Consultant - Ontario Racing Commission - *Provided key information for the formulation of new drug testing protocols and procedures.*

Expert Consultant - Indiana Horse Racing Commission - *Provided key information for the formulation of new drug testing protocols and procedures.*

Expert Consultant - Kentucky Horse Racing Authority - *Provided key information for the formulation of new drug testing protocols and procedures.*

Expert Witness - the American Horse Shows Association - *Provided key information for two drug cases.*

Research Consultant - Various projects including: Miles/Bayer Inc. (1995-1995); Merck (1989-1993).

Research Consultant - Consulted with Ken Kober from Columbus Instruments, Inc. to develop the prototype model of the Oxyman-XL large animal calorimeter, the first commercially produced system for the measurement of oxygen uptake and carbon dioxide production in exercising horses.

Technical Support: Provided technical support and information to Drs. Joe Pagan and Steve Jackson, Kentucky Equine Research, Inc. for development of an exercise testing lab at their facility in Lexington.

Technical Support: Provided technical support and research information to Dr. Luka Krusic, Equine Clinician and Exercise Physiologist, Munich, Germany.

Technical Support: Provided technical support and information to Dr. John Foreman for the development of the Equine Exercise Physiology Lab. at the University of Illinois, College of Veterinary Medicine.

Technical Support: Provided technical support and information to Dr. Larry Soma for the development of the Equine Exercise Physiology Lab at the University of Pennsylvania., College of Veterinary Medicine.

Technical Support: Provided technical support and information to Dr. Frank Andrews for development of an Equine Exercise Physiology Lab at the University of Tennessee, College of Veterinary Medicine.

Reviewed/edited manuscript for Dr. Anton Usaj, Faculty for Sport, University of Ljubljani, Slovenia.

Technical Support: Provided technical information and support to David Lambert, DVM, of Prestonwood Farm, Inc. for the development of an equine exercise testing laboratory.

Technical Support: for Viking Meadows Farms, Carmel Indiana, 1989.

Technical Support: Provided technical support to Dr. David Keogh of Yellow Springs Instruments, Inc. for the development of their portable lactate analyzer.

Consultant: Tested a heart rate monitor and wrote user's manual for Polar Electro, Inc.. Ohio State University

received 2 heart rate meters.

OSU Athletic Testing - analysis of blood samples from the OSU Swimming Team for lactate concentrations.

Professional/Academic Association Memberships:

- 1985 American College of Sports Medicine (Fellow, 1990).
- 1984 American Society of Animal Science.
- 1992 American Physiological Society.
- 1992 Federation of American Societies of Experimental Biology.
- 1995 Advisory Board-International Association of Equine Professionals
- 1987 Association for Equine Sports Medicine.
- 1984 Equine Science Society (formerly - Equine Nutrition and Physiology Society).
- 1984 Sigma Xi.

Non-Academic, Employment, Awards, Activities:

Employment:

- 1985 Substitute Teacher. Tulare County Department of Education, Porterville, Visalia, Tulare, and Lindsay School Districts.
- 1985 Staff Research Assistant. University of Arizona, Department of Animal Sciences, Tucson.
- 1983-1984 Graduate Research Associate. University of Arizona,, Tucson, AZ
- 1981-1984 Manager. University of Arizona Equine Breeding Farm and Research Center, Department of Animal Sciences, University of Arizona Agricultural Experiment Station, Tucson, AZ. (Efforts achieved a 90% live foal rate).
- 1981 Assistant Manager. Post Time Thoroughbred Ranch, Road 184, Tulare, CA.
- 1980-1981 Graduate Research Assistant. Department of Animal Sciences, Fresno State University, CA
- 1975-1979 Lifeguard, Summer Youth Program Aquatics Supervisor, and Pool Maintenance Worker. California State Polytechnic University, Pomona, CA.
- 1973-1975 Aquatics Director and Swim Coach, Yorba Linda Country Club, Yorba Linda, CA.
- 1971-1973 Driving Range, Cart Room Worker, and Dishwasher, Yorba Linda Country Club, CA.

Awards:

- 2013 All American Award - Masters National Championship - United States of America Water Polo
- 2003 Who's Who in Education
- 2002 Who's Who in Medicine and Healthcare
- 1996 Who's Who in Science and Engineering
- 1981 University of Arizona Graduate Tuition Scholarship
- 1979 Moorman Feed Manufacturing Company of California Scholarship
- 1980 United States Agency for International Development-Board for Food & Agricultural Development Graduate Fellowship
- 1980 Fresno Ag-1 Foundation Graduate Student Scholarship
- 1974 Four varsity letters-goaltender, Cal Poly Pomona's California Collegiate Athletic Association four time conference champion water polo team: 1974, 1975, 1976, 1977.
- 1974 Honors at Entrance, Cal Poly Pomona.
- 1974 Air Force JrROTC - American Legion Scholastic Merit Award
- 1973 All Orange League (California) Water Polo Team, Goaltender
- 1973 Eagle Scout with Silver Palm - 1973

Activities:

- Member - United States of America Water Polo
- Member - American Water Polo Association.
- Water Polo Goalie Coach - Princeton Tigers Aquatics Club 2017-present
- Water Polo Coach - Rutgers Water Polo Club 2003-2018.
- Goalie - OSU Water Polo Club (1987-1995; 1988-Big 10 Champion) North Coast Water Polo Club and

Columbus Crush Water Polo Club (1987-1995, Midwest League Champions 1993); Rutgers Water Polo Club (1995-2019), Lobos -55 Masters Water Polo Club (2007-2014), New Jersey Masters Water Polo Club (2011-Present), Kaos Water Polo Club (2014), Blue Thunder Masters Water Polo Club (2015-present; 4th place 2017 60+ FINA World Masters Championships in Budapest, Gold Medal 60+ 2018 Pan-American Masters Water Polo Championships; Bronze Medal 65+ - 2021 USAWP Masters Nationals).

- Member - Knights of Columbus - Rt Rev. Msgr. John F. Baldwin 4th Degree Assembly 658
- Knights of Columbus Council 11529:
 - Deputy Grand Knight
 - Chancellor
 - Chair - Leave No Neighbor Behind Committee
 - Co-Chair - Food for Families Committee
 - Co-Chair - Tootsie Roll Fundraiser for individuals with special needs.
- Member - Ancient Order of Hibernians - Michael Davitt Ocean Division 11
- Member - New England Historical and Genealogical Society
- Treasurer - Descendants of the Founders of New Jersey.
- Secretary - Society of the War of 1812 in New Jersey.
- Member - Princeton-Cranbury Chapter of the Sons of the American Revolution
- Governor - First Colony of the Mayflower Society in New Jersey
- Member - Massachusetts Society of the Cincinnati
- Member Executive Council; Chairman of the Historical Committee -Society of Colonial Wars in New Jersey
- Vice President - Sons of the Revolution in New Jersey
- Member - Sons of the Union Veterans of the Civil War and the Lincoln Camp 100.
- Registrar and Genealogist - Order of Founders and Patriots of America in New Jersey
- Lt. Governor and Historian of the Princeton Colony of the Jamestown Society.