

Craig A. Horswill, Ph.D.
Curriculum Vitae

Home: 746 S. Grove Ave
Barrington, IL 60010
Home: (847)304-4926
Cell: 630-337-7271
e-mail: horswill@uic.edu

EDUCATION:

Degrees

1986 Ph.D. Physical Education (Exercise Physiology), University of Illinois, Urbana.
1979 M.S. Physical Education (Exercise Physiology), University of Wisconsin, Madison.
1977 B.S. Secondary Education (Science/Chemistry), University of Wisconsin, Madison.

Certifications

1982-2015 Illinois Teaching Certificate for Secondary Education
2004-2012 Illinois High School Association body fat tester for wrestling

PROFESSIONAL EXPERIENCE:

Employment:

2011-present Clinical Associate Professor, Dept. of Kinesiology and Nutrition, Univ. of Illinois Chicago
2010-present Consultant in Fitness, Health, Nutrition, and Wellness Industry
1994-2010 Gatorade Research & Development, Gatorade Sports Science Institute, PepsiCo, Barrington, IL
Senior Manager, 2008-2010
Senior Research Fellow, 2005-2008
Principal Scientist, 2000-2005
Senior Research Development Scientist, 1998- 2000
Research Scientist, 1996-98
Scientist, 1994-96
1988-1994 Research Scientist, Columbus Children's Hospital and Clinical Assistant Professor, Division of Nutrition, Department of Pediatrics, The Ohio State University College of Medicine; Adjunct Assistant Professor, Exercise Physiology, College of Health, Physical Education and Recreation, The Ohio State University (1991 to 1994)
1987-88 Assistant Professor, Human Performance Lab, School of Physical Education, Ball State University, Muncie, IN
1986-87 Post-Doctorate and Visiting Professor, Human Performance Lab, School of Physical Education, Ball State University, Muncie, IN

Research Accomplishments:

Publications of Original Research (in reverse chronological order)

- McCartney, K, CA Horswill. Metabolic response during simulated marching band. In review, **Journal of Physical Activity and Health**.
- Horswill CA, Scott, H, Voorhees, D. Comparison of three workstations for effect on non-exercise activity thermogenesis (N.E.A.T.) in review with **Work**, August 2016
- Hamstra-Wright, K, NQ Ly, CA Horswill. Vapor loss and substrate oxidation contribute substantially to body mass reduction during 90 min of running in cold temperatures. In preparation for a submission to **Journal of Athletic Training**.
- Dragusin, I, CA Horswill. Does sport-drink use during exercise promote an acute positive energy balance? **International Journal of Sport Nutrition and Exercise Metabolism** prepublication Jan. 2016.

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- Baker, LB, JR Stofan, AA Hamilton, CA Horswill. Exercise-induced Ca, Mg, and Cu losses in regional vs. whole-body washdown sweat. **International Journal of Sport Nutrition and Exercise Metabolism** 21:233-239, 2011.
- Tippet, M, JR Stofan, M Lacambra, C Horswill. Core temperature and sweat responses in professional women's tennis during tournament play in the heat. **Journal of Athletic Training** 46:55-60, 2011.
- Osterberg, K.L., SE Pallardy, RJ Johnson, CA Horswill. Carbohydrate exerts a mild influence on fluid retention following exercise-induced dehydration. **Journal of Applied Physiology** 108(2):245-50, 2010.
- Baker, LB, JR Stofan, AA Hamilton, CA Horswill. Comparison of regional patch collection vs. whole-body washdown for measuring sweat sodium and potassium loss during exercise. **Journal of Applied Physiology** 107:887-95, 2009.
- Horswill, CA, JR Stofan, M. Lacambra, T. Toriscelli, ER Eichner, and R. Murray. Sodium balance during U.S. football training in the heat: Cramp-prone vs. reference players. **International Journal of Sports Medicine**, 30:789-94, 2009.
- Passe, DH, J. Stofan, C. Rowe, C. Horswill, R. Murray. Exercise affects hedonic responses to sodium in a sport beverage. **Appetite** 52:561-7, 2009.
- Osterberg, K, CA Horswill, L. Baker. Pre-game urine specific gravity does not predict fluid intake by NBA players during competition. **Journal of Athletic Training** 44:53-57, 2009.
- Horswill, CA, JR Stofan, SC Lovett, C Hannasch. Effect of carbohydrate intake during exercise at 30° C on core temperature and metabolic responses. **Journal of Athletic Training** 43: 585-591, 2008.
- Stofan, J.R., KL Osterberg, CA Horswill, M Lacambra, ER Eichner, SA Anderson, R Murray. Twenty-four-h fluid turnover during pre-season training in U.S. collegiate football. **International Journal of Sport Nutrition and Exercise Metabolism** 17:340-351, 2007.
- Passe, DH, MK Horn, J. Stofan, C. Horswill, R. Murray. Voluntary dehydration occurs during running despite optimal conditions for fluid intake. **International Journal of Sport Nutrition and Exercise Metabolism** 17:284-295, 2007.
- Horswill, CA, D Curby, WP Baroli, and R. Murray. Effect of carbohydrate intake during wrestling practice on upper body work in adolescents. **Pediatric Exercise Science** 18:470-482, 2006.
- Stover, EA, HJ Petrie, D Passe, CA Horswill, R Murray, R Wildman. Urine specific gravity in exercisers prior to physical training. **Applied Physiology, Nutrition, and Metabolism** 31:320-327, 2006.
- Horswill, CA Stofan, J. M. Horn, D. Eddy, R. Murray. Effect of exercise and fluid consumption on salivary flow and pH. **International Journal of Sports Medicine** 27:500-504, 2006.
- Stover, E.A., Horswill, C.A., J.J. Zachwieja, J.R. Stofan, R. Murray. Consistently high urine specific gravity in adolescent American football players and the impact of an acute drinking strategy. **International Journal of Sports Medicine** 27:330-335, 2006.
- Horswill, M.K. Horn, J.R. Stofan, D.H. Passe, R. Murray. Adequacy of fluid ingestion in adolescents and adults during exercise. **Pediatric Exercise Science** 17:41-50, 2005.
- Stofan, J.R., J.J. Zachwieja, C.A. Horswill, Robert Murray, S.A. Anderson and E.R. Eichner. Sweat and sodium losses in NCAA football players: A precursor to heat cramps? **International Journal of Sport Nutrition and Exercise Metabolism** 15:641-652, 2005.
- Maughan, RJ, SM Shirreffs, SJ Merson, C Horswill. Fluid and electrolyte balance in elite male football (soccer) players training in a cool environment. **J Sports Science** 23:73-79, 2005.
- Shi, X., M.K. Horn, K.L. Osterberg, J.R. Stofan, J.J. Zachwieja, C.A. Horswill, D.H. Passe, R. Murray. Gastrointestinal distress during high-intensity intermittent training: effect of beverage carbohydrate concentration. **International Journal of Sport Nutrition and Exercise Metabolism** 14:673-683, 2004.
- Kien, C.L. CA Horswill, W.B. Zipf, K.S. McCoy, SC Denne. Splanchnic uptake of the carbon skeleton of leucine in healthy children and in children with cystic fibrosis. **Pediatric Research** 45:680-683, 1999.
- Horswill, CA, C.L. Kien, W.B. Zipf, K.S. McCoy. Validity of an isotope dilution technique for measuring CO₂ production in children with cystic fibrosis. **J Pediatric Gastroenterology and Nutrition** 1997.
- Horswill, CA, Kien, C.L., W.B. Zipf. Measuring energy costs of leisure activity in adolescents using a CO₂ breath test. **Medicine and Science in Sports and Exercise** 29:1263-1268, 1997.
- Kien, C.L., W.B. Zipf, C.A. Horswill, S.C. Denne, K.S. McCoy. Effects of feeding on protein turnover in healthy children and in children with cystic fibrosis. **American Journal of Clinical Nutrition** 64:608-614, 1996.
- Kahle, EB, WB Zipf, DR Lamb, CA Horswill, TM O'Dorisio, KM Ward. Insulin dynamics, glucose control, and coronary artery disease risk factors in obese adolescents: effects of mild, routine exercise. **International Journal of Sports Medicine** 17:1-6, 1996.

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- Horswill, CA, CL Kien, WB Zipf. Energy expenditure in adolescents during low intensity leisure activities. **Medicine and Science in Sports and Exercise** 27:1311-1314, 1995.
- Kien, C.L. C.A. Horswill, W.B. Zipf, K.S. McCoy. Elevated hepatic glucose production in children with cystic fibrosis. **Pediatric Research** 37:600-605, 1995.
- Horswill CA, CL Kien, WB Zipf, KS McCoy. Feeding-induced changes in energy expenditure in children with Cystic Fibrosis. **Journal of Parenteral and Enteral Nutrition** 18(6):497-502, 1994.
- Horswill, CA, JR Scott, RW Dick and J Hayes. Influence of rapid weight gain after the weigh-in on success in collegiate wrestlers. **Medicine and Science in Sports and Exercise** 26:1290-1294, 1994.
- Scott, JR, CA Horswill, R Dick. Acute weight gain in collegiate wrestlers following the weigh-in. **Medicine and Science in Sports and Exercise** 26:1181-1185, 1994.
- Horswill CA, JE Miller, JR Scott, CM Smith, G Welk, P Van Handel. Anaerobic and aerobic power in the arms and legs of elite senior wrestlers. **International Journal of Sports Medicine**. 13:558-561, 1992.
- Horswill, CA, BA Cromer, A Stein, D Thornton, K Tarnowski. Acute effect of consumption/omission of breakfast on exercise tolerance in adolescents. **Journal of Sports Medicine Physical Fitness** 32:76-83, 1992.
- Zipf, WB, CL Kien, CA Horswill, T O'Doriso, K McCoy, B Pinyerd. Effects of tolbutamide on growth and body composition of nondiabetic children with cystic fibrosis. **Pediatric Research** 30:309-314, 1991.
- Horswill, CA and WB Zipf. Factors related to elevated blood pressure in obese children: influence of gender, weight, age, and serum insulin levels. **International Journal of Obesity** 15:453-459, 1991.
- Hickner, RC, CA Horswill, J Welker, JR Scott, JN Roemmich, DL Costill. Test development for study of physical performance in wrestlers following weight loss. **International Journal of Sports Medicine** 12(6):557-562, 1991.
- Horswill, CA, SH Park, JN Roemmich. Changes in the protein nutritional status of adolescent wrestlers. **Medicine and Science in Sports and Exercise** 22:599-604, 1990.
- Horswill, CA, TG Lohman, MH Slaughter, RA Boileau, JH Wilmore. Estimation of minimal weight of adolescent males using multicomponent models. **Medicine and Science in Sports and Exercise** 22:528-532, 1990.
- Horswill, CA, RC Hickner, JR Scott, DL Costill, D Gould. Weight loss, dietary carbohydrate modifications, and high intensity, physical performance. **Medicine and Science in Sport and Exercise** 22:470-476, 1990.
- Park, SH, JN Roemmich, CA Horswill. A season of wrestling and weight loss by adolescent wrestlers: effect on anaerobic arm power. **Journal of Applied Sport Science Research** 4(1):1-4, 1990.
- Misner, JE, RA Boileau, SA Plowman, B Joyce, S Hurovitz, BG Elmore, MA Gates, JA Gilbert, CA Horswill. Physical performance and physical fitness of a select group of female firefighter applicants. **Journal Applied Sport Science Research** 3:62-67, 1989.
- Horswill, CA, J Scott, P Galea. Comparison of maximum aerobic power, anaerobic power, and body fat in elite and non-elite junior wrestlers. **International Journal of Sports Medicine** 10:165-168, 1989.
- Horswill, CA, RA Boileau, DK Layman, BT Williams, BH Massey. Total-body electrical conductivity (TOBEC): relationship to estimates of muscle mass, fat free weight, and lean body mass. **American Journal of Clinical Nutrition** 49:593-8, 1989.
- Horswill, CA, DL Costill, WJ Fink, MG Flynn, JP Kirwan, JB Mitchell, J Houmard. Influence of sodium bicarbonate on exercise performance: relationship to dosage. **Medicine and Science in Sport and Exercise** 20:566-569, 1988.
- Gao, J, DL Costill, CA Horswill, SH Park. Sodium bicarbonate ingestion improves performance in interval swimming. **European Journal of Applied Physiology** 58:171-174, 1988.
- Horswill, CA, DK Layman, RA Boileau, BT Williams, BH Massey. Excretion of 3-methylhistidine and hydroxyproline following acute heavy resistance exercise. **International Journal of Sports Medicine** 4(9):245-248, 1988.
- Horswill, CA, J Scott, P Galea, SH Park. Physiological profile of elite junior wrestlers. **Research Quarterly for Exercise and Sport** 59(3):257-261, 1988.
- Misner, JE, RA Boileau, SA Plowman, B Joyce, BG Elmore, MA Gates, JA Gilbert, CA Horswill. Leg power characteristics of female firefighter applicants. **Journal Occupational Medicine** 30:433-437, 1988.
- Slaughter, MH, TG Lohman, RA Boileau, CA Horswill, RJ Stillman, M. D. Van Loan and DA Bembem. Skinfold equations for estimation of body fatness in children and youth. **Human Biology** 60:709-723, 1988.
- Slaughter, MH, TG Lohman, RA Boileau, RJ Stillman, M Van Loan, CA Horswill. Changes in the relation of skinfolds to body density with maturation. **Human Biology** 56:681-689, 1984.

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- Published Chapters, Reviews, Proceedings, Invited Articles and Book (in reverse chronological order)
- Scott, HM, Tyton, TN, Horswill, CA. Occupational Sedentary Behavior and Solutions to Increase Non-Exercise Activity Thermogenesis. Invited paper, **Pensar en Movimiento** in pre-print, Nov. 1, 2016.
- Fransen J and Horswill, CA. Chapter 1: Body water: turnover, balance, regulation, and evaluation. In *Fluid Balance, Hydration, and Athletic Performance*. F Meyer, Z Szygula, B Wilk, editors. Boca Raton: CRC Press, Taylor & Francis Group, 2016.
- Berning, J and Horswill CA. Dietary Supplements – From the Inside Out. Part II. *ACSM Sports Medicine Bulletin*, published on line April 21, 2015.
- Berning, J and Horswill CA. Dietary Supplements – From the Outside In: Part I. *ACSM Sports Medicine Bulletin*, published on line April 7, 2015.
- Berning, J and Horswill CA. Guidance for athletes who manipulate body weight. Active Voice column in *ACSM Sports Medicine Bulletin*, published on line Dec. 17, 2013.
- Horswill, CA and LM Janas. Hydration and health. **American J Lifestyle Medicine** 5:304-315, 2011.
- Sammamrhone Turocy, P, BF DePalma, CA Horswill, KM Laquale, TJ Martin, AC Perry, PhD; MJ Somova, AC Utter. National Athletic Trainers' Association Position Statement: Safe Weight Loss and Maintenance Practices in Sport and Exercise. **Journal of Athletic Training** 46(3):355-369, 2011.
- Horswill, CA. Making weight and cutting weight. In **Sports Medicine and Science in Combat Sports**. R. Kordi, N. Maffulli, R. Wroble, W.A. Wallace (ed.) London: Springer, 2009, pp 21-40.
- Janas, LM and CA Horswill. Body fat. In **Encyclopedia of Aging and Public Health**. In press, 2006.
- Horswill, CA and LM Janas. Body composition. In **Encyclopedia of Aging and Public Health**. In press, 2006.
- Bergeron, MF, DB McKeag, DJ Casa, PM Clarkson, RW Dick, ER Eichner, CA Horswill, AC Luke, F Mueller, TA Munce, WO Roberts, TW Rowland. Youth football: heat stress and injury risk. **Medicine and Science in Sports and Exercise** 1421-1430, 2005.
- Petrie, HL, EA Stover, CA Horswill. Nutritional concerns for the child and adolescent competitor. **Nutrition** supplement 20(7-8):620-631, 2004.
- Horswill, CA. Other ingredients: role in the nutrition of athletes. In **Sports Drinks: Basic Science and Practical Aspects** R. Maughan and R. Murray (editors) Boca Raton: CRC Press, 2000, pp 225-256.
- Boileau, R.A. and C.A. Horswill. Chp. 22. Body Composition in Sports: Measurement and Applications for Weight Loss and Gain. In **Exercise and Sport Science** D. Kirkendahl, W. Garrett (ed.) Williams & Wilkins, 1999, pp 319-338.
- Horswill, CA. Chp. 61. Physiology of wrestling. **Exercise and Sport Science** D. Kirkendahl, W. Garrett (ed.) Williams & Wilkins, 1999, pp 955-964.
- Case, HS, CA Horswill, , GL Landry RA Opplinger, AC Shetler. ACSM Current Comment: Weight loss in wrestlers, Jan 1998.
- Murray, R and CA Horswill. Nutrition requirements for competitive sports. In **Nutrition in Exercise and Sport**, 3rd edition. I. Wolinski (ed.) Boca Raton: CRC Press, Inc., 1998, pp. 521-556.
- Horswill, CA. Nutrition for optimal performance in track and field. **Proceedings of the International Track & Field Coaches Association: XIV Congress** G.G. Dales (ed.) Kalamazoo: ITFCA, 1998, pp 34-41.
- Horswill, CA. Effective fluid replacement. **International Journal of Sports Nutrition** 8:175-195, 1998.
- Horswill, CA, WB Zipf, CL Kien, EB Kahle. Insulin's contribution to growth in children and the potential for exercise to mediate insulin's action. **Pediatric Exercise Science** 9:18-32, 1997.
- Horswill, CA. Letter to Editor: Correcting inaccuracies about sports drinks. **Food Technology** 50(9) September 1996, pp 48-50.
- Horswill, CA. Effects of bicarbonate, citrate, and phosphate loading on performance. **International Journal of Sports Nutrition** 5(supplement):S111-119, 1995.
- Jordan, J, P Jordan, CA Horswill. **Victory at the Training Table**. Canton, OH: PRC Press, 1994.
- Horswill, CA. Physiology and nutrition for wrestling. In H. Knuttgen and D.R. Lamb (eds.) **Perspectives in Exercise Science and Sports Medicine Vol. 7**. Carmel: Cooper Publishing, 1994, pp 131-179.
- Horswill, CA. Weight loss and weight cycling in amateur wrestlers: implications for performance and resting metabolic rate. **International Journal of Sports Nutrition** 3(3):245-260, 1993.
- Horswill, CA. When wrestlers slim to win: what's a safe minimum weight? **The Physician and Sportsmedicine** 20(9):90-104, 1992.
- Horswill, CA. Applied physiology of amateur wrestling. **Sports Medicine** 14(2):114-143, 1992.

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- Horswill, CA. Nutrition: Does rapid weight loss by dehydration adversely affect high-power performance? **Sport Science Exchange** 3(31), Chicago, IL: Gatorade Sports Science Institute, Jan. 1991.
- Boileau, RA, CA Horswill, MH Slaughter. Body composition in the young athlete. In **Body Composition Measurements in Infants and Children**, WJ Klish and N Kretchmer (eds.) Report of the 98th Ross Conference on Pediatric Research; Columbus, OH:Ross Labs, 1989.
- Boileau, RA, TG Lohman, MH Slaughter, CA Horswill, RJ Stillman. Problems associated with determining body composition in maturing youngsters. In **Competitive Sports for Children and Youth; An Overview of Research and Issues**. EW Brown and CF Branta (ed.s), Champaign, IL: Human Kinetics, 1988, pp 3-16.

Abstracts Published and Presented (in reverse chronological order)

- Foot, DM. CA Horswill. Percent Body Fat Determination: Influence of Bone Mineral in Female Athletes
Submit for presentation at Experimental Biology in Chicago, Spring 2017.
- Horswill, CA, H Scott, D Voorhees. Effects of a novel workstation device on increasing metabolic rate.
American Physiological Society Integrative Biology of Exercise VII,
- Ly, N., K. Hamstra-Wright, C. Horswill. Are BIA and urine specific gravity accurate and precise for tracking exercise-induced dehydration? Midwest ACSM chapter meeting, Merryville, IN, Nov. 9, 2013.
- Ly, N., K. Hamstra-Wright, C. Horswill. "Does respiratory water loss and substrate oxidation contribute substantially to body mass reduction during 90 min of training?" SCAN annual meeting, April 27, 2013.
- Smith JW, JJ. Zachwieja., C A Horswill, DD Pascoe, D Passe, B C. Ruby, and LK. Stewart. Evidence of a carbohydrate dose and prolonged exercise performance relationship. **Medicine and Science in Sports and Exercise**. 42 2010.
- Baker LB, Stofan JR, Lukaski HC, Horswill CA. Regional vs. Whole-Body Washdown Trace Mineral Concentration in Sweat. **Medicine and Science in Sports and Exercise**. 42 2010.
- Osterberg, KL, Horswill, CA, Pallardy, SE, Murray, R. Carbohydrate exerts a mild influence but electrolytes are the primary driver of fluid retention following exercise-induced dehydration. **Medicine and Science in Sports and Exercise** 40:S86, 2008.
- Stover, EA, Horswill, CA, Miranda, LF, Stofan, JR, Stachenfeld, NS, Murray, R. Influence of menstrual cycle phase on drinking response in physically active females. **Medicine and Science in Sports and Exercise** 39:S314, 2007.
- Horswill, CA, Stover, EA, Lukaski, HC, Mjaanes, JM, Murray, R. Electrolyte concentrations in the sweat of young soccer players. **Medicine and Science in Sports and Exercise** 39:S278, 2007.
- Stofan, JR, Horswill, CA, Lacambra, M, Torriscelli, T., Murray, R. Acute change in blood sodium during two-a-day training in professional football players. **Medicine and Science in Sports and Exercise** 39: S15, 2007.
- Lacambra M, Stofan JR, Toriscelli T, Horswill CA. Body Weight fluctuations associated with change in hydration status during two-a-day training for professional football. Presented at National Athletic Trainers' Association annual meeting, Los Angeles, CA, June 16, 2006.
- Stover, EA, CA Horswill, R Murray. Comparison of sensory acceptance and fluid replacement between two different sports drinks. **Medicine and Science in Sports and Exercise** 38:S219, 2006.
- Stofan JR, EA Stover, SC Lovett, CA Horswill, R Murray. A carbohydrate-electrolyte drink attenuates decline in blood sodium during prolonged exercise in the heat. **Medicine and Science in Sports and Exercise** 38:S217, 2006.
- Horswill, CA, JR Stofan, MK Horn, R Murray. Effect of beverage sodium content on fluid balance during rehydration from exercise-induced dehydration. **Medicine and Science in Sports and Exercise** 38:S217 2006.
- Passe, DH, J. Stofan, C. Rowe, C. Horswill, R. Murray. Exercise affects hedonic responses to sodium in a sport beverage. **Medicine and Science in Sports and Exercise** 38:S192, 2006
- Horswill CA, Bogard TM, Roslewski VW, Osterberg KL, Murray R Methodological Issues of Measuring Urine Specific Gravity for Hydration Status in Interscholastic Wrestlers. **Journal of Athletic Training** Apr/June 40(2 Supp): S-40, 2005.
- Stofan, J.R., K.L. Osterberg, C.A. Horswill, M. Lacambra, R. Murray, E.R. Eichner, and S.A. Anderson. Fluid turnover during two-a-day practices in college football. **Medicine and Science in Sports and Exercise**, 37:S168, 2005.

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- Stover, EA, CA Horswill, M Lacambra. Sweat rates and sweat electrolyte concentrations in heat acclimatized youth soccer players. **Medicine and Science in Sports and Exercise**, 37:S464, 2005.
- Stofan, J.R., J.J. Zachwieja, C.A. Horswill, R. Murray, E.R. Eichner, and S.A. Anderson. Core temperature response during two-a-day practices in NCAA Division-1 College Football. **Medicine and Science in Sports and Exercise**, 36:S48, 2004.
- Petrie, H., K.L. Osterberg, C.A. Horswill, R. Murray. Reliability of bio-electrical impedance spectroscopy (BIS) in athletes after exercise-induced dehydration. **Medicine and Science in Sports and Exercise**, 36:S239, 2004.
- Osterberg, K.L., C.A. Horswill, T. Sperber, F. Tedeschi, R. Murray. Fluid balance, hydration status, and sweat electrolyte concentrations in NBA basketball players during pre-season practice. **Medicine and Science in Sports and Exercise**, 36:S180, 2004.
- Stover, E.A., C.A. Horswill, R. Murray. Drinking strategy for improving indicators of hydration status in high school football players. **Medicine and Science in Sports and Exercise**, 36:S49, 2004.
- Stofan, J.R. J.J. Zachwieja, C.A. Horswill, M. Lacambra, R. Murray, E.R. Eichner, S. Anderson. Sweat and sodium losses in NCAA Division I football players with a history of whole-body muscle cramping. **Medicine and Science in Sports and Exercise** 35:S48, 2003.
- Passe, D., J. Cannizzo, J. Stofan, J. Zachwieja, J. Kessler, X. Shi, C. Horswill, R. Murray. Perceived sweat loss is related to mood state in golfers. **Medicine and Science in Sports and Exercise**. 35:S139, 2003.
- Osterberg, K.L., J.L. Schriefer, J. Kessler, C.A. Horswill, D.H. Passe, R. Murray. Is there a graded effect of ingesting varying doses of fructose on GI distress? **Medicine and Science in Sports and Exercise**. 35:S212, 2003.
- Horswill, M.K. Horn, J.R. Stofan, D.H. Passe, R. Murray. Adequacy of Fluid Ingestion in Adolescents and Adults during Exercise. **Pediatric Exercise Science** North American Society for Pediatric Research, East Lansing, MI, Aug. 2, 2002.
- Horswill, C.A. M.K. Horn, K. Osterberg, J.R. Stofan, J.J. Zachwieja, X. Shi, D.H. Passe, R. Murray. Gastrointestinal distress during high-intensity intermittent training: effect of fluids containing carbohydrate (CHO). Presented at **National Strength and Conditioning Assoc**, Las Vegas, NE, July 11, 2002.
- Shirreffs, SM C.Horswill, R.J. Maughan. Hydration status, making weight and performance. **Medicine and Science in Sports and Exercise**. 34:S36 2002.
- Passe, D.H., H. Petrie, E. Costigan, C. Horswill, M. Horn, R. Murray. Predicting rate of fluid loss during exercise using a multiple regression formula. **Medicine and Science in Sports and Exercise**. 34:S113, 2002.
- Zachwieja, J.J., D. Nicksich, J.R. Stofan, M. Horn, C.A. Horswill, R. Murray Metabolic and sensory responses to energy bar ingestion. **Medicine and Science in Sports and Exercise**. 34:S203, 2002.
- Horswill, CA, JR Stofan, MK Horn, R Murray effect of an electrolyte supplement on blood pressure and fluid retention. **Medicine and Science in Sports and Exercise**. 34:S138, 2002.
- Stofan, JR, JJ Zachwieja, CA Horswill, R Murray. Sweat and sodium losses during practice in professional football players: field studies. **Medicine and Science in Sports and Exercise**. 34:S113, 2002.
- Stofan, JR, JJ Zachwieja, CA Horswill, MK Horn, K. Osterberg, R Murray. Assessment of sweat electrolyte losses in humans during exercise: whole body versus regional measurement. **FASEB Journal** 16(5):A1141, 2002.
- Timmons, BW, CA Horswill, O Bar-Or. Changes in cellular immunity following cycling exercise with and without carbohydrate ingestion in 9 and 10 year old boys. **Canadian Society for Exercise Physiology meetings**, 2001.
- Stofan, J.R., D Nicksich, C Horswill, R Murray. Sweat and sodium losses in pre-season, non-heat acclimated professional football players. **Medicine and Science in Sports and Exercise**. 33:S256, 2001.
- Long, L. M. Horn, J. Stofan, C.A. Horswill, R. Murray. Induction of localized leg cramps using a run/swim protocol: a pilot study. **Medicine and Science in Sports and Exercise**. 33:S325, 2001.
- Horswill, CA, J. Stofan, D. Nicksich, D. Passe, M. Horn. Variability in sweat electrolyte concentrations. **Medicine and Science in Sports and Exercise**. 33:S137, 2001.
- Stofan, J. M. Horn, D. Eddy, C.A. Horswill, R. Murray. Effect of exercise and fluid consumption on salivary flow and pH. **Medicine and Science in Sports and Exercise**. 31:S323, 1999.
- Horswill, CA, D. Curby, R. Murray. Effect of carbohydrate intake during wrestling practice on upper body work. **Medicine and Science in Sports and Exercise**. 31:S123, 1999.
- Horswill, CA, DG Curby, W P Bartoli, B Murray. Rate of CO₂ production (RaCO₂) and estimates of energy expenditure (EE) during wrestling practice. **Medicine and Science in Sports Exercise** 29:S47, 1997.

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- Bartoli, W, CA Horswill, S Volpe, R. Murray. Effects of acute ingestion of a chromium supplement on carbohydrate metabolism. **Medicine and Science in Sports Exercise** 29:S251, 1997.
- Kien CL, CA Horswill, WB Zipf, KS McCoy, S.C. Denne. Effects of splanchnic uptake (SU) of leucine (LEU) on the measurement of whole body protein breakdown (B) in healthy children (HC) and in children with cystic fibrosis (CF). **Pediatric Research** 36(Abstract issue), 1995.
- Kien CL, WB Zipf, CA Horswill, SC Denne, KS McCoy. Effects of feeding on leucine kinetics and protein turnover in healthy children and children with cystic fibrosis (CF). **Amino Acids** 9:45, 1995.
- Horswill, CA, CL Kien, WB Zipf. Isotope dilution of ¹³C-bicarbonate (RaCO₂) during periods of varying exercise intensity. **Medicine and Science in Sports Exercise** 27:S145, 1995.
- Horswill, CA, CL Kien, WB Zipf. Measurement of the energy cost of leisure activity (ECLA) using isotope dilution of ¹³C-bicarbonate (RaCO₂). **International Congress of Obesity**, Toronto, Canada, Aug. 21, 1994.
- Kien, CL, CA Horswill, WB Zipf, KS McCoy. Elevated hepatic glucose output (HGO) in children with cystic fibrosis (CF): an early sign of defective insulin secretion/action? **Pediatric Research** 35:204A, 1994.
- Zipf, WB, CL Kien, CA Horswill, TM O'Dorisio, KS McCoy. Effects of chronic tolbutamide therapy on growth in nondiabetic children with cystic fibrosis (CF). **Pediatric Research** 35:138A, 1994.
- Zipf, WB, CL Kien, CA Horswill, KS McCoy. Effects of feeding on daily protein turnover balance (DPTB) in cystic fibrosis (CF), **FASEB Journal** 7:A178 (#1028), 1993.
- Horswill, CA, CL Kien, WB Zipf, KS McCoy. Validity of an isotope dilution technique (RaCO₂) for measuring CO₂ production (VCO₂) in children with cystic fibrosis (CF), **FASEB Journal** 7:A83, 1993.
- Kien CL, CA Horswill, WB Zipf, KS McCoy. Isotopic dilution of CO₂: an index of feeding induced changes in energy expenditure (EE) in children with Cystic Fibrosis (CF). **Pediatric Research** 31:109A, 1992.
- Pinyerd, BJ, WB Zipf, CA Horswill, J Hayes. Variability of height determinations of children. **Pediatric Research** 31:92A (#479), 1992.
- Habash, DL, CL Kien, CA Horswill, AR Coggan. Estimation of the rate of carbon dioxide production using [¹³C]-bicarbonate. **J Parenteral Enteral Nutrition** 16(1 suppl):34S, 1992.
- Dick R, CA Horswill, JR Scott. Acute weight gain in wrestlers at the NCAA championships. **Medicine and Science in Sports Exercise** 24(5):S52, 1992.
- Horswill CA, R Dick, JR Scott. Relationship of weight gain to success in tournament competition of collegiate wrestlers. **Medicine and Science in Sports Exercise** 24(5):S52, 1992.
- Horswill, CA, Zipf, WB, CL Kien, TM O'Dorisio, KS McCoy. Glipizide increases insulin secretion but not growth of children with cystic fibrosis. **FASEB Journal** 5(5):A933, 1991.
- Horswill, CA and JR Scott. Prediction of physiological capacities of males ages 9 to 19 yr **Pediatric Exercise Science** 3:178, 1991.
- Scott, JR, Horswill, CA and P Galea. Anaerobic power of elite junior wrestlers: relationship to fat-free weight. **Pediatric Exercise Science** 3:179, 1991.
- Hickner, RC, CA Horswill, J Welker, JR Scott, DL Costill. Test development for study of weight loss in wrestlers. **Medicine and Science in Sports Exercise** 22:S128, 1990.
- Horswill, CA, WB Zipf, CL Kien, KS McCoy. Growth and body composition of nondiabetic children with cystic fibrosis (CF) receiving oral hypoglycemic therapy. **FASEB Journal** 4:A665, 1990.
- Zipf, WB, CA Horswill, CL Kien. Augmented insulin action/secretion with tolbutamide enhances growth and lean body mass of nondiabetic children with cystic fibrosis. **Pediatric Res.**, 27:89A, 1990.
- Habash, DL, CL Kien, CA Horswill. Isotopic dilution of CO₂: index of CO₂ production (VCO₂) during brief periods of physical activity. **FASEB Journal** 4:A654, 1990.
- Horswill, CA and WB Zipf. Factors related to blood pressure in obese children: maturation level, gender, weight, and insulin levels. **International Journal of Obesity** 13:557 1989.
- Horswill, CA, RC Hickner, JR Scott, DL Costill, D Gould. Weight loss, dietary carbohydrates and physical performance. **Medicine and Science in Sports and Exercise** 21:S32, 1989.
- Roemmich, JN, SH Park, CA Horswill. Effects of weight loss on selected hormones in the adolescent wrestler. **Medicine and Science in Sports and Exercise** 21:S37, 1989.
- Horswill, CA, SH Park, JN Roemmich. Seasonal changes in the protein nutritional status of high school wrestlers. **FASEB Journal** 3:A662, 1989.
- Park, SH, JN Roemmich, CA Horswill, DL Costill. Seasonal changes in anaerobic power of adolescent wrestlers. Seoul Olympic Scientific Congress, Korea; Sept 9, 1988.

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- Horswill, CA, LM Janas, SH Park. Protein nutritional status of high school wrestlers during the off-season. **FASEB Journal** 2:A632, 1988.
- Horswill, CA, J Gao, DL Costill, SH Park. Ingestion of NaHCO₃ improves performance in interval swimming. **Medicine and Science in Sports and Exerc.** 20:13, 1988.
- Horswill, CA, J Scott, P Galea, SH Park. Physiological profile of elite junior amateur wrestlers. Pan American Sports Medicine Congress, Indiana University, Bloomington, IN, Aug. 6, 1987.
- Horswill, CA, BH Massey, DK Layman, RA Boileau, BT Williams. Exercise-induced delayed muscle soreness in humans and excretion of 3-methylhistidine and hydroxyproline. **Medicine and Science in Sports and Exercise** 18:204, 1986.
- Horswill, CA, RA Boileau, and DK Layman. The correlation of TOBEC with fat free weight, body potassium, 3-methylhistidine and hydroxyproline excretion. **Federation Proceedings** 45:352, 1986.
- Boileau, RA, MG Bembien, CA Horswill, RJ Stillman. Relationship of total body electrical conductivity analysis to selected reference body composition method. **Federation Proceedings** 45:837, 1986.
- Horswill, CA, TG Lohman, RA Boileau, MH Slaughter. Comparison of five methods of estimating percent fat in four maturation levels. **Medicine and Science in Sports and Exercise** 17:271, 1985.
- Horswill, CA, TG Lohman, MH Slaughter, RA Boileau. Body fatness estimates in children and the influence of water and bone mineral content. **Medicine Science in Sports and Exercise** 16:134, 1984.
- Slaughter, MH, TG Lohman, RA Boileau, CA Horswill. Relationship of skinfolds to body fatness in children and youth. North American Association for the Study of Obesity meetings, 1984.
- Horswill, CA, TG Lohman, RA Boileau, MH Slaughter, The prediction of minimal weight from anthropometry in adolescent males. **Medicine and Science in Sports and Exercise** 15:172, 1983.
- Slaughter, MH, TG Lohman, RA Boileau, SB Going, CA Horswill. Prediction of body fatness from anthropometry in children and youth. Presented at American Alliance for Health, Physical Education, Recreation and Dance national convention, April, 1984.

Patents Awarded

- US Patent and Trademark Office, No. 7874995, Jan. 2011. "Reducing or avoiding muscle cramps," inventors: Robert Murray, John R. Stofan IV, Jeffrey J. Zachwieja, Craig A. Horswill et al.
- US Patent and Trademark Office, No. 07993690, Aug. 2011. "Carbohydrate And Electrolyte Replacement Composition," inventors: Murray, Robert, Horswill, Craig A., Ferraro, Robert F., Passe, Dennis H., Stofan IV, John R., Du, Chan T.

Grants Funded and/or Submitted (in reverse chronological order)

- PI: Validation of the BIS assessment of minimal weight in wrestlers when compared to a multi-component gold standard. National Federation of High Schools, \$71,000, on hold July 2016.
- PI: Effect of hydration on strength-resistance training in athletes, Hydrus-Surrious Company, \$14,000 in preparation.
- PI: Effect of the AirSurfer on non-exercise activity thermogenesis and cognitive function, Active Ideas, LLC, \$11,000; awarded Sept 2015.
- PI: Effect of beverage composition on rehydration following exercise-induced dehydration in team sport athletes, Abbott Nutrition, \$73,000; awarded 2013.
- PI: Rehydration following exercise-induced dehydration in endurance athletes, Abbott Nutrition, \$15,000; awarded 2012.
- PI: CETL grant for education, UIC, \$10,000; awarded 2012.
- [1994 to 2010 I was in an industry position overseeing funding of research by the Gatorade Sports Science Institute We funded basic and applied research in exercise physiology at major US and international universities; range of annual budgets: \$250,000 to \$750,000 for ~8 to 15 extramural projects a year.]
- PI: Effect of exercise training on carbohydrate and lipid metabolism in obese adolescents, NIH, withdrawn upon move to industry.
- Co-investigator: Effect of oral hypoglycemic agents on protein and carbohydrate metabolism on CF patients, NIH, \$1,000,000+; not funded, 1991.
- Co-investigator: Effect of oral hypoglycemic agents on growth and development of CF patients, CF Foundation, \$900,000; awarded 1989.
- PI: Physical activity in obese children and adolescents and proinsulin production, Central Ohio Diabetes Association, \$5,000; awarded in 1989.

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- PI: Validation of high-intensity performance assessment. Internal grant from Ball State University, \$5,000; awarded but declined due to employment move to Ohio State U.
- PI: Dietary composition during weight loss on performance of wrestlers, USOC, Colorado Springs, ~\$12,000; awarded 1987.
- PI: Protein Nutritional status of high school wrestlers, Ross Labs, Columbus, OH, ~\$10,000; awarded 1987.

Teaching Experience:

- Clinical Associate Professor, Dept. of Kinesiology & Nutrition, Univ. Illinois Chicago
Courses Taught Semesters between Fall 2011 through Fall 2015; teaching load: three courses per semester
"Statistics for Kinesiology and Nutrition" (KN 200)
"Introduction to undergraduate research" (KN300)
"Exercise Physiology" (KN352)
"Advance Exercise Physiology" (KN452)
"Muscle Physiology" (KN441)
"Advanced Exercise Assessment and Programming" (KN545)
Course development; converting KN300 "Literature Review" to "Introduction to Undergraduate Research,"
Dept. Kinesiology and Nutrition, UIC, 2012.
- Adjunct Clinical Associate Professor, Dept. of Kinesiology & Nutrition, Univ. Illinois Chicago:
"Muscle Physiology," Spring semester 2011.
"Advanced Exercise Physiology," Summer semester 2011.
- Adjunct lecturer, Dept. of Health Sciences, Trinity International University, Deerfield, IL: "Nutrition" Spring semester 2011.
- Assistant Professor, School of Physical Education Dept, Ball State University; undergraduate: "Human Physiology" and "Exercise Physiology," 1987-8; graduate: "Physiology of Human Performance," 1988.
- Visiting Professor, School of Physical Education Ball State University; undergraduate course: "Exercise Physiology," 1986-87.
- Thesis Committee Member for Graduate Student Research
2013-2016 at UIC
Edwin Miranda, MD candidate, thesis: effect of exercise on RAGE and sRAGE in lean individuals.
Nhu Ly, MS candidate, project: fluid uptake assessed using deuterium appearance in blood.
Brandon Groth, MS graduate 2015, project: establishing multicomponent body comp assessment.
Kiersten McCartney, MS candidate, project: energy expenditure during simulation of marching band.
- 1991-1994 at OSU
Diane Habash, Ph.D. candidate, Ohio State University; as an Adjunct Asst. Professor, P.E. Dept.
Jim Roemmich, dissertation for Ph.D., Kent State University; as an Adjunct Asst. Prof., P.E. Dept.
- 1987-88 at Ball State University:
Sung Han Park, dissertation for Ph.D., Exercise Physiology.
James Roemmich, Master's thesis for M.S., Exercise Physiology.
Phil Bogle, Master thesis for M.S., Exercise Physiology.
Bob Hickner, Master's thesis for M. S., Exercise Physiology.
Jean Welker, research project for M. S., Exercise Physiology.
- 1987-88 at Ball State University:1986-87:
Leo D'Acquisto, Master's thesis for M.S., Exercise Physiology.
Jiaping Gao, Master's thesis for M.S., Exercise Physiology.
- Teaching Assistant, University of Illinois, Dept. Physical Education graduate studies; laboratory course:
"Cardiorespiratory Aspects of Exercise," 1985.
- Lecturer, University of Illinois Physical Education undergraduate course: "Bioscientific Aspects of Human Performance," 1984; graduate course: "Neuromuscular Aspects of Exercise" 1985.

Athletic Coaching Experience:

- Asst. Varsity wrestling coach, Barrington High School, Barrington, IL, 2010-2011.
- Head coach, Central High wrestling team, Champaign, IL 1979-83; 4-year record: 52-15; 4th place in 1983 Class AA State Tournament.
- Head coach, Wisconsin high school all-star team, cultural exchange to Oregon, Summer 1978; record 7-0.
- Grad assistant coach, UW-Madison, 1976-79.

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Presentations:

International

- Beijing Team Physicians' Course, Beijing, China
"Heat stress and thermoregulation during training for sports," April 5, 2007
GSSI Seminar, "Heat stress and hydration issues in athletes," Seoul, Korea May 12, 2005.
International Symposium of Sports Nutrition, Exercise Physiology and Nutrition for Competitive Sport.
Rosario, Argentina:
"30 years of Research on the Ingredients in Sports Drinks," June 17, 2001.
"Use of vitamins and minerals for athletic performance," June 19, 2001.
BASES, Leeds University, United Kingdom, Sept. 9, 1999, "Fluid provision and exercise: research focus."
International Congress on Medicine and Nutrition for Physical Activity, Bogota, Colombia:
Gastric emptying and intestinal absorption of fluid during exercise, Oct. 2, 1997.
Carbohydrate intake for physical performance, and its effects on fatigue and recovery, Oct. 3, 1997.
2nd International Sport Nutrition Conf., Williamsburg, VA, "Effective fluid replacement," Sept 28, 1997.
5th International Symposium for Actualization of Applied Sport Sci., Rosario, Argentina May 11, 1996:
"Protein requirements for different types of athletes"
"Carbohydrates and solutions for rehydration: focus on performance and muscle glycogen"
XIV International Track & Field Coaches Assoc. Congress, "Optimal nutrition for track and field athletes,"
Atlanta, GA, July 22, 1996.
Scientific Aspects of Endurance Sport, "Benefits of fluid replacement with carbohydrates during exercise,"
Caracas, Venezuela, May 12, 1995.
Gatorade Sport Science Institute Conferences. "Protein needs of power and endurance athletes:"
Santiago, Chili, Dec. 6, 1994.
Buenos Aires, Argentina, Dec. 8, 1994.

National

- American College of Sports Medicine annual meetings:
Colloquium Deaths in Wrestling – Challenges of Changing Sport Culture Through Science and Policy, co-
presenter with R. Dick and R. Oppliger, May 29, 2014.
Free communication papers (see Abstracts, **Medicine and Science in Sports and Exercise**), 1983-86,
1988, 1989, 1992, 1995, 1997, 1999, 2001-2008, 2010.)
Current Issue Sessions
Horswill CA, Lukaski, HC, Montain, S, Shirreffs, S, Stover, EA. Mineral loss during exercise and heat
exposure: Is there a need to alter dietary requirements?" **Medicine and Science in Sports and
Exercise** Volume 39, 2007.
Bergeron, MF, Kenney, WL, Horswill, CA, Roberts, WO. Physiological challenges of repeated bouts in
the heat – considerations for scheduling in youth sports. "Rehydration and nutritional limitations of
recovery" **Medicine and Science in Sports and Exercise** Volume 38, 2006.
Mini Symposia
RJ Maughan, JR Stofan, Shirreffs, SM, CA Horswill. Fluids and electrolyte balance in athletes.
"Implications for hydration strategies. **Medicine and Science in Sports and Exercise** 37:S272,
2005.
Shirreffs, SM, CA Horswill, RJ Maughan. Hydration status, making weight and performance. **Medicine
and Science in Sports and Exercise** 35:S36, 2002.
Symposium
Volpe, SL, Horswill, CA, Manore, MM, KE Yarasheski, B. Braun. Dietary practices and weight
control issues for athletes. **Medicine and Science in Sports and Exercise** 31:S293, 1999.
Moderator, free communications session
"Fluids and Hydration, Indianapolis, IN, May 2004.
"Body composition assessment", San Diego, CA, May 1982.
American Council on Exercise (ACE), "The Basics of Proper Hydration and its Importance in
Thermoregulation, Exercise, Endurance, and Strength."
Symposium West, San Diego, May 16, 2013
Symposium East, Orlando, FL, planned for October 17, 2013
Federation of American Societies for Experimental Biology meetings: 6 papers

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- Free communications or posters* (see Abstracts, **Federation Proceedings** or **FASEB Journal**), 1986, 1988-91, 1993, 2001.
- National Athletic Trainers Association (NATA) Annual Meeting
Press event on NATA Position Statement: Safe Weight Loss and Maintenance Practices in Sport and Exercise. SWATA, July 15, 2011.
Free communication slide presentations of original research, Indianapolis, IN, 2005; Atlanta, 2006.
“Dealing with Fatigue and Cramps in Your Athletes: Nutritional Culprits and Corrections.” Los Angeles, June 22, 2001
“From the Training Table to the Victory Stand: Effective Nutrition Strategies,” Nashville, July 1, 2000.
“Nutrition Know-How,” Baltimore, MD, June 19, 1998.
“You Can Lead a Horse to Water But Will He Drink?” Salt Lake City, UT, June 18, 1997.
- North American Society for Pediatric Exercise Medicine
Poster (see Abstracts, **Pediatric Exercise Science**), 2002 (East Lansing) and 1990 (Cincinnati).
Keynote speaker, “Weight loss in adolescent wrestlers,” annual meeting, Park City, Utah, Aug. 25, 1996.
- National Strength and Conditioning
Invited speaker, “Recovery strategies following intense exercise training.” Symposium, Ross Park, Columbus, OH, on Aug. 2011.
Invited speaker, “Measuring the Muscle Mass and Guiding the Gains,” pre-con NSCA annual meeting, Orlando, FL, July 8, 2015
- Gatorade Sports Science Institute Conferences
“Lose the fat, not the performance.” Nutrition Supplements, Chicago, IL, July 14-15, 2005
“Heat stress and fluid loss in football.” Annual Gatorade science meeting, Park City, UT, July 2001.
“Effects of bicarbonate, citrate, and phosphate loading on performance.” Ergogenic Aids, Chicago, IL, Nov. 11, 1994.
“Physiology and nutrition for wrestling”, Perspectives in Exercise Science and Sports Medicine meeting, San Diego, CA, June 1993.
- National Wrestling Coaches Association, Annual Convention:
“Nutrition for high-performance wrestling. What coaches want to know.” Indianapolis, May 20, 2004.
“Nutrition and weight loss update for wrestlers: The cutting edge.” Orlando, FL, Aug. 14, 1997.
“Weight loss in wrestling: Do wrestlers know some thing that scientists don’t?” Atlanta, Aug 1995.
“Determining body fat and minimal weight for competition,” West Palm Beach, FL, Aug. 1989.
- Sports and Cardiovascular, and Wellness Nutritionists (SCAN)
Keynote speaker, “Gambling with dehydration: Do odds vary by game?” Scottsdale, April 1996.
Roundtable discussion leader: dehydration in athletes; annual meeting, Scottsdale, AZ, April 1996.
- USA Wrestling, Coaches College. “Nutrition for wrestlers: Strategies to fight fatigue,” Atlanta, Aug. 1995.
American Youth Soccer Org., “Nutrition & Fitness for Soccer Players,” Kalamazoo, MI, July 13, 1996.
Road Race Directors Meeting, USA Track and Field, “Caffeine & alcohol: Do they speed you up or end your race?” Oak Brook, IL Jan. 25, 1997.
- North American Association for the Study of Obesity:
Poster paper (see Abstracts, **International Journal of Obesity**), 1989.

Regional/Local

- U Oklahoma sports medicine symposium, “Sweaty Sooners, Gatorade Sports Science Institute, and Heat Cramps, Jan 15, 2016.
- FONA International, Geneva, IL “Scientific Basis of Ingredients for Healthy Beverages,” Nov. 15, 2011.
Department of Pharmacology, Rush Medical Center, Chicago, IL “Emerging Sports Nutrition,” Oct 27, 2010.
Presentations on hydration, heat stress, and sports nutrition to PBATS, PFATS, NBATA at miscellaneous sites, 1996-2010.
- District Meetings, National Athletic Trainers Association (NATA) meetings
Pronouncement session on NATA Position Statement: Safe Weight Loss and Maintenance Practices in Sport and Exercise. SWATA, July 15, 2011.
Gatorade Workshops at NATA meetings
“Heat Stress and Hydration Issues in Athletes.” SEATA, Atlanta, May 3, 2005.
“Functional Fluids on the Sidelines: What Works.” EATA, Philadelphia, Jan. 9, 2000
“Myths and Facts in Sports Nutrition at EATA, Philadelphia, PA; Rocky Mt. ATA, Casper, WY; MAATA, Sioux Falls, SD; Pacific ATA, Reno, NV; Far West ATA, Spokane, WA, in 1999.

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“The Inside Stuff: Update on the Role of Nutrition and Fluid Research in Performance.”

GLATA, St. Charles, IL; MAATA Omaha, NE; SEATA, Atlanta; SWATA, Arlington, TX in 1998;

“Keeping Your Athletes Hydrated: You Can Lead a Horse to Water But...” PBATS, Tampa, FL; Rocky Mountain ATA, Albuquerque, NM; MAATA, Overland Park, KS in 1997

“Optimizing Nutritional Status for Athletic Performance for PBATS, Tampa, FL; GLATA, Middleton, WI; MAATA Omaha, NE; Tucson, AZ; Charlotte, NC in 1996.

“Fueling Athletes: Research Update and Practical Recommendations” for PBATS, Phoenix, AZ, GLATA, South Bend, IN in 1995.

Central Ohio Diabetes Association. "Exercise and sports for diabetics," Columbus, OH, March 8, 1993.

College of Medicine (OSU) Continuing Medical Education, Conference on Nutrition for Clinical Practice: "DiETING in Young People: ABC's -- Athletes, Body Building and Crash Diets." Dec. 1989.

National Coaches Education Program, USA Wrestling: "Physiology of wrestling," "Sports and liability," and "The 7 basic skills of wrestling," in Michigan, Kansas, New York, and Florida, 1986-1990.

Miscellaneous Presentations

University seminar guest lecturer as a scientist with Gatorade, 1994-2010: University of Utah, Appalachian State, Wheaton College, Trinity International University, North Illinois University, University of Illinois Urbana-Champaign, University of Illinois Chicago, University of Oklahoma, University of Arizona, Arizona State, University of Wisconsin, University of South Carolina, Hope College, Georgia State University, University of Iowa, Creighton, York College, Ball State, USDA Grand Forks Lab, University of New Orleans, Loughborough University (UK), McMaster University (CAN), University of Costa Rica, Yeungnam University (Korea).

High schools and other lay audiences: Barrington (IL) High School, Niles North (IL) High: “Nutrition for Performance in Wrestling;” Prospect (IL) High School coaching staff: “Sports Nutrition Strategies;” Barrington High sports medicine seminar: “Heat Stress in Athletes;” Barrington Men’s Breakfast, 50+ Emmanuel Lutheran Church, Men’s Breakfast and Aging Council of First Community Church (Columbus, OH), Fairfield Glade (TN) First Methodist Church and Fairfield Glad Home Owners Association: “Nutrition and Fitness for the 90’s;” NFL Rookie Seminars 2003, 2005, and 2009; NBA Rookie Life Skills Workshop, 2004: “Heat Illness and Hydration,” PGA professionals, 1999 and 2001: “Sports Nutrition for Golf;” The Presidents Forum, 2011- “Nurture vs. Nature vs. Nationalized Health Care;” ACE West, ACE East: “Hydration and Exercise: Implications for Health, Endurance, and Strength;” Madison Sports Hall of Fame Club, “Fact and Fiction of Fitness and Nutrition.”

PROFESSIONAL SERVICE

Committees and Boards (*revise chronological order*)

EAS Academy Science Advisory Board, member, Abbott Nutrition, 2012-present.

Institutional Review Board 3, member, Office of Protection of Human Subjects, UIC, 2013 to present.

Review ~40 applications per year – initial reviews, amendments, continuing reviews.

Fellow, Honors College, UIC, advising and mentoring undergrads, 2013 to present.

Advisor, Medical & Science Advisory Board, Korey Stringer Institute, UConn-NFL-Gatorade, 2009-10.

Alumni Advisory Board in the Dept. of Kinesiology and Community Health, College of Applied Health Sciences, Univ. Illinois Urbana-Champaign, 2007-2010.

National Athletic Trainers Assoc., writing committee 2003-2010 for position paper “National Athletic Trainers’

Association Position Statement: Safe Weight Loss and Maintenance Practices in Sport and Exercise.” **Journal of Athletic Training** 46(3):355-369, 2011.

American College of Sports Medicine Interest Group on Combat Sports, co-chair, 2007-2010.

American College of Sports Medicine Program Planning Committee; member, 2007-2009.

American College of Sports Medicine Strategic Health Initiative on Youth Sports and Health, 2005-2009.

American College of Sports Medicine, subcommittee for revised position paper "Weight loss in wrestlers,"

Medicine and Science in Sports and Exercise 28:ix-xii, 1996.

Science and Medicine Committee, USA Wrestling Association, 1987-1993.

School of Physical Education Awards Committee, Ball State University, 1987-88.

Committee on Committees, Ball State University Physical Education Dept. 1987-88.

TK Cureton Scholarship Award Committee, Physical Educ. Dept., University of Illinois, 1986.

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Professional Memberships:

American Society of Nutrition, 2009-present.
American College of Sports Medicine (ACSM), 1983-present.
North American Society of Pediatric Exercise Medicine, 1989-2009.
National Strength and Conditioning Association, 1986-2006.
Midwest Chapter of American College of Sports Medicine, 1981-present.

Reviewer, Journals and Original Research:

Editorial Board member
International Journal of Wrestling Science, 2012 to present
Pensar en Movimiento, 2015 to present
Ad hoc reviewer of manuscripts for:
Ambulatory Child Health
American Journal of Clinical Nutrition
American Journal of Lifestyle Medicine
American Journal of Medical Sciences
Annals of Nutrition and Metabolism
Appetite
Applied Physiology, Nutrition, and Metabolism
Biological Psychology
British Journal of Nutrition
Comparative Exercise Physiology
European Journal of Applied Physiology
European Journal of Clinical Nutrition
European Journal of Sports Sciences
International Journal of Sport Nutrition and Exercise Metabolism
International Journal of Sports Medicine
International Journal of Sports Physiology and Performance
International Journal of Wrestling Science
International SportMed Journal
Journal of Adolescence
Journal of Applied Physiology
Journal of Athletic Training
Journal of Sports Science and Medicine
Journal of Strength and Conditioning Research
Life Sciences
Medicine and Science in Sports and Exercise
Metabolism
Pediatric Exercise Science
PeerJ
Pensar en Movimiento (Spanish journal)
PLoS One
Sensor
Sports Medicine

OTHER: LEADERSHIP, ATHLETIC, & COMMUNITY-SERVICE EXPERIENCE:

FCA Wrestling Coaches Clinic – Chicago area, co-host, Barrington High School, Nov. 3, 2012
ACSM Christian Fellowship Luncheon, assistant organizer and guest speaker, Baltimore, MD, June 4, 2010
Junior Achievement of Chicago, volunteer teacher, “Success Skills” instructor, Barrington High, Spring 2008.
Long Grove Lake Zurich Toastmasters Club 169, member, 2006 to present
Offices held: Sergeant at Arms, 2006; VP Membership, 2007; VP Education, 2008; President, 2009.
Certificates earned: Advanced Communicator Bronze, 2008; Advanced Communicator Silver, 2010; Advanced Communicator Gold, 2011; Competent Leader, 2010; Competent Leader Bronze, 2010.
Youth Leadership Program coordinator, Barrington High School wrestling team, June 2010.
Barrington High School Mat Club, President of booster/funding-raising group, 2003-05.

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Illinois High School Association, certified body fat tester for high school wrestling, 2003-2013.
Northwest Council, Troop 10 Boy Scouts of America Assistant Scout Master, 2001-2007
 Chair of Wreath Sales Funding Raising 2000 to 2003
 Member and chair of Life-to-Eagle Rank Committee, 2003 to 2007
 Elected to Order of the Arrow, Fall 2006
Barrington Area United Way, Appropriations Committee, 2002, 2004- 2006, and 2009.
Barrington Community Band, member, 4th of July parade and concert, 1999, 2002, 2004.
Committee member, Capital Stewardship Campaign, St. Michaels' Episcopal Church, Barrington, 1998.
Committee on Senior Activities & Aging, First Community Church, Columbus, OH, 1992-94.
Booster club member, Ohio State Univ. Wrestling Team, 1991-94; MC for annual banquet, 1993.
Toastmasters International, Competent Toastmaster, Chief Munsie Sunrisers, Muncie, IN, 1986-88.
Referee official, wrestling, Illinois High School Association; 1984-86.
Production Assistant, ABC-TV Olympic coverage of wrestling, 1984 games in Los Angeles, CA.
Member, USA wrestling team to USSR and Russian (Tbilisi) National Tournament, 1978.
Olympic Trials, 4th place at 136.5 lb., USA freestyle wrestling team, 1976.
Letterwinner (4x), wrestling, University of Wisconsin-Madison, 1973-76; 5th in Big 10 and co-captain, 1976.
USA Junior World wrestling
 National champion, USA Juniors tournament, Missoula, MT July 1974.
 Member, cultural exchange team to Mongolia and USSR, July, 1974.
Place winner (3x), U.S. National (USWF) senior freestyle wrestling championships 1975 (6th), '76 (3rd), '79 (6th).
Athlete Representative, University of Wisconsin-Madison Faculty Athletic Board, 1975-76.

AWARDS & HONORS

Friends of Barrington Wrestling, 2010
Gatorade All-stars award, 2007
Gatorade Managers' Award, 2001, 2003, and 2005
Laura Huelster Award, U. of Illinois Kinesiology Dept., 1986
T.K. Cureton Award, U. of Illinois Kinesiology Dept., 1985
Recognized teachers award, undergraduate program, U. Illinois Incomplete Listing, 1980
George Martin Wrestling Scholarship Award, U. Wisconsin Wrestling 1975 & 1976
Fellowship of Christian Athlete university athlete award, U. Wisconsin Huddle, 1976.
Alan Schaefer Award, U. Wisconsin Athletic Dept., 1975.

CLINICAL, RESEARCH & TECHNICAL SKILLS

Expertise: body composition assessment (underwater weighing, air displacement plethysmography, deuterium dilution, bioelectrical impedance analysis, skinfold measurement, DEXA); energy expenditure and whole body substrate oxidation (indirect calorimetry for resting metabolic rate, submaximal exercise, and maximal exercise assessment); acute fluid and electrolyte balance studies; core body temperature assessment; anaerobic power assessment; flame photometry, osmometry; Blackboard, Excel, Word, PowerPoint, Pearson "MyStatLab" online instruction.
Experience: substrate oxidation using stable isotopes (glucose, leucine, glycine, bicarbonate); isokinetic muscle function (Biodex); cavity ring-down spectroscopy for deuterium quantification; i-STAT for blood sodium concentration; spectroscopy; HPLC; SPSS (PC version); Moodle.