

Rick L. Sharp

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Rank Professor

<u>Degrees Held</u>	<u>Institution</u>	<u>Date</u>
B.A.	California State Univ., Chico Major: Physical Education	1974
M.Ed.	University of Nevada, Las Vegas Major: Physical Education Minor: Educational Administration	1976
Ph.D.	Ball State University Major: Human Bioenergetics Minor: Physiology	1983

Professional Experience

2005-present	Director, Human Performance Laboratories Health & Human Performance Iowa State University
2004-2005	Interim Chair, Dept. of Health & Human Performance Iowa State University
2000-present	Professor of Health & Human Performance Iowa State University Other appointments: Professor of Food Science & Human Nutrition Professor of Biomedical Sciences

- 1998-2000 Associate Professor of Health & Human Performance
Iowa State University
- 1995-97 Director, Sports Science and Medicine (unpaid leave from ISU)
United States Swimming
US Olympic Training Center
Colorado Springs, CO
- 1982-88 Assistant Professor of Physical Education
Iowa State University
- 1978-82 Doctoral Fellow in Human Bioenergetics
Ball State University
Teaching: Anatomy, Physiology, Exercise
Physiology, Biology
- 1974-76 Graduate Assistant in Physical Education
University of Nevada, Las Vegas

Professional Societies

American College of Sports Medicine Fellow
American Academy of Kinesiology and Physical Education Fellow

Consultancies

Campbell Soup Company – Global Nutrition (since 1983)
Speedo International – Aqualab Advisory Board (since 2006)
Grain Processing Corporation (2003-04)

Other Professional Activities

Editor-In-Chief 1988-1995, JOURNAL OF SWIMMING RESEARCH
Associate Editor, JOURNAL OF STRENGTH & CONDITIONING RESEARCH
Journal reviewing:
INTERNATIONAL JOURNAL OF SPORTS MEDICINE
JOURNAL OF APPLIED PHYSIOLOGY
MEDICINE AND SCIENCE IN SPORTS AND EXERCISE
INTERNATIONAL JOURNAL OF SPORTS NUTRITION
NUTRITION

Honors/Awards

Board of Regents Award for Faculty Excellence - 2004
Fellow, American Academy of Kinesiology & Physical Education – inducted 2003

ISU College of Education Superior Research Medallion – 2001
VEISHA Professor, College of Education -- 2001
Member, Phi Kappa Phi - - 1998
ISU Regents Teaching Excellence Award - - 1990
Fellow of the American College of Sports Medicine - - inducted 1988

Patents

Nutritional Products Containing Modified Starches. US Patent # 5,695,803. Co-Inventors: John Robyt (Biochem & Biophys), Murray Kaplan (FSHN). Approved: 12/9/97

Nutritional Products Containing Modified Starches: Continuation-In-Part: Processing characteristics of modified starches. US Patent 6,676,984. Co-Inventors: John Robyt, Murray Kaplan. Approved: 1/13/04.

Peer-Reviewed Publications

Johannsen, D.L., G.W. Welk, R.L. Sharp, P.J. Flakoll. Differences in daily energy expenditure in lean and obese women: The role of postural allocation. Obesity. In press.

Sharp, R.L. Role of whole foods in promoting hydration after exercise in humans. Journal of the American College of Nutrition. In press.

Johannsen, N.J. and R.L. Sharp. Effect of pre-exercise ingestion of modified cornstarch on metabolism during endurance exercise. International Journal of Sports Nutrition and Exercise Metabolism. In press.

Sharp, R.L. Role of sodium in fluid homeostasis with exercise. Journal of the American College of Nutrition. 25(3): 231S-239S, 2006.

Petersen, H.L., C.T. Peterson, M.B. Reddy, K.B. Hanson, J.H. Swain, R.L. Sharp, D.L. Alekel. Body composition, dietary intake, and iron status of female collegiate swimmers and divers. International Journal of Sports Nutrition and Exercise Metabolism. 16:281-295, 2006.

Flakoll, P.D., R.L. Sharp, D. Levenhagen, C. Carr, S.L. Nissen. Effect of beta-hydroxy-beta-methyl butyrate (HMB), arginine, and lysine supplementation on strength, functionality, body composition and protein metabolism in elderly women. Nutrition. 20:445-451, 2004.

Sharp, R.L. Doctoral education: the mixture perspective. Quest. 55:82-85, 2003.

Decombaz, J., A. Bury, C. Hager, S.L. Nissen, and R.L. Sharp. HMB meta-analysis and the clustering of data sources. Journal of Applied Physiology. 95: 2180-2182, 2003.

Nissen, S.L. and R.L. Sharp. Effect of dietary supplements on lean mass and strength gains with resistance exercise: A meta-analysis. Journal of Applied Physiology. 94:651-659, 2003.

Roberts, B.S., K. Kamel, C.E. Hedrick, S.P. McLean, and R.L. Sharp. Effect of the FastSkin™ competitive swim suit on physiological and biomechanical responses during submaximal freestyle swimming. Medicine and Science in Sports and Exercise. 35:519-524, 2003.

Ziegler, P., R.L. Sharp, V. Hughes, W. Evans, and C.S. Khoo. Nutritional status of teenage female competitive figure skaters. Journal of the American Dietetic Association. 101:1-11, 2001.

Knitter, A.E., L. Panton, J.A. Rathmacher, A. Petersen, and R.L. Sharp. Effects of {beta}-hydroxy- β -methylbutyrate on muscle damage after a prolonged run. Journal of Applied Physiology. 89:1340-1344, 2000.

Nissen, S.L., R.L. Sharp, L. Panton, M. Vukovich, S. Trappe, and J.C. Fuller, Jr. B-hydroxy-B-methylbutyrate (HMB) supplementation in humans is safe and may decrease cardiovascular risk factors. The Journal of Nutrition. 130:1937-1945, 2000.

Brown, G.A., M.D. Vukovich, T.A. Reifenrath, N.L. Uhl, K.A. Parsons, R.L. Sharp, D.S. King. Effects of anabolic precursors on serum testosterone concentrations and adaptations to resistance training in young men. International Journal of Sport Nutrition. 10:342-362, 2000.

Brown G.A., M.D. Vukovich, R.L. Sharp, T.A. Reifenrath, K.A. Parsons, D.S. King. Effect of oral DHEA on serum testosterone and adaptations to resistance training in young men. Journal of Applied Physiology. 87:2274-2283, 1999.

King, D.S., R.L. Sharp, M.D. Vukovich, G.A. Brown, T.A. Reifenrath, N.L. Uhl, K.L. Parsons. Effect of oral androstenedione on serum testosterone and adaptations to resistance training in young men: A randomized controlled trial. Journal of the American Medical Association. 281:2020-2028, 1999.

Parcell, A, M.L. Ray, K.A. Moss, T.M. Ruden, R.L. Sharp, King, DS. The effect of encapsulated soluble fiber on carbohydrate metabolism during exercise. International Journal of Sports Nutrition. 9:1-11, 1999.

Ray, M.L., M.W. Bryan, T.M. Ruden, S.M. Baier, R.L. Sharp, and D.S. King. The effect of sodium in a rehydration beverage when consumed as a fluid or meal. Journal of Applied Physiology. 85:1329-1336, 1998.

Vukovich, M.D., R.L. Sharp, L.D. Kesl, D.L. Schaulis, D.S. King. Effects of a low dose amino acid supplement on adaptations to cycling training in untrained individuals. International Journal of Sports Nutrition. 7:298-309, 1997.

Hauber, C., R.L. Sharp, and W.D. Franke. Heart rate response to submaximal and maximal workloads during running and swimming. International Journal of Sports Medicine. 18: 347-353, 1997.

Nissen, S., R. Sharp, M. Ray, J. Rathmacher, D. Rice, J. Fuller, A. Connelly, and N. Abumrad. The effect of the leucine metabolite B-hydroxy-B-methylbutyrate on muscle metabolism during resistance exercise training. Journal of Applied Physiology. 81:2095-2104, 1997.

King, D.S., P.J. Baldus, R.L. Sharp, L.D. Kesl, T.L. Feltmeyer, and M.S. Riddle. Time course for reversal of exercise-induced increase in insulin action and glucose tolerance in middle-aged people. Journal of Applied Physiology. 78:17-22, 1995.

O'Sullivan, S.D., R.L. Sharp, and D.S. King. Carbohydrate ingestion during competitive swimming training. Journal of Swimming Research. 10:35-40, 1994.

King, D.S., T.L. Feltmeyer, P.J. Baldus, R.L. Sharp, and J.G. Nespor. Effect of eccentric exercise on insulin secretion and action in humans. Journal of Applied Physiology. 75(5): 2151-2156, 1993.

Johnson, R.E., R.L. Sharp, and C.E. Hedrick. Relationship of swimming power and dryland power to sprint freestyle performance: a multiple regression approach. Journal of Swimming Research. 9:10-14, 1993.

Sharp, R.L. Prescribing and evaluating interval training sets in swimming: a proposed model. Journal of Swimming Research. 9:36-40, 1993.

Hackney, A.C., C.H. Cyren, M. Brammeier, and R.L. Sharp. Effect of menstrual cycle phase on the glucose-insulin relationship at rest and during exercise. Biology of Sport. 10:73-80, 1993.

Vukovich, M.D., R.L. Sharp, D.S. King, and K. Kershishnik. The effect of protein supplementation on lactate accumulation during submaximal and maximal exercise. International Journal of Sports Nutrition. 2:307-316, 1992.

Bohrer-Claude, A. and R.L. Sharp. The effectiveness of cycle ergometer training in maintaining aerobic fitness during detraining from competitive swimming. Journal of Swimming Research. 7:19-23, 1991.

Sharp, R.L., D.J. Williams, L. Bevan. Effect of controlled frequency breathing during exercise on blood gases and acid-base balance. International Journal of Sports Medicine. 12:62-65, 1991.

Hackney, A.C., R.J. Ness, R.L. Sharp, W.S. Runyan. Effects of intensive training on testosterone responses to submaximal exercise in males. Journal of Physical Education and Sport Science. 2:7-11, 1990.

Hackney, A.C., R.L. Sharp, W.S. Runyan, R.J. Ness. Relationship of resting prolactin and testosterone changes in males during intensive training. British J. Sports Med. 23:194, 1989.

Hackney, A.C., R.L. Sharp, R.J. Ness. Prolactin and leutinizing hormone changes during 8 weeks of aerobic and anaerobic training. Journal of the Iowa Academy of Science. 96:52-53, 1989.

Sharp R.L., D.L. Costill. Influence of body hair removal on physiological responses during breaststroke swimming. Medicine and Science in Sports and Exercise. 21:576-580, 1989.

Nicklas, B.J., A.C. Hackney, R.L. Sharp. Menstrual cycle effects on muscle glycogen storage and endurance performance. Int. J. Sports Med. 10:264-269, 1989.

Sharp, R.L., A.C. Hackney, S.M. Cain, R.J. Ness. Effect of shaving body hair on the physiological cost of freestyle swimming. J. Swim. Res. 4:9-13, 1988.

Sharp, R.L., D.L. Costill, D.S. King, W.J. Fink. Effects of eight weeks of sprint training on human muscle buffer capacity. Int. J. Sports Med. 7:13-17, 1986.

Sharp, R.L. Muscle strength and power as related to competitive swimming. J. Swim. Res. 2:5-10, 1986.

Katz, A., R.L. Sharp, D.S. King, D.L. Costill, W.J. Fink. Effect of high intensity interval training on 2,3- diphosphoglycerate at rest and after maximal exercise. Eur. J. Appl. Occupat. Physiol. 16:564-568, 1984.

Katz, A., R.L. Sharp, L.E. Armstrong, D.S. King. Oxygen tension in antecubital blood of trained and untrained males after maximal leg exercise. Can. J. Appl. Sports Sci. 9:123-128, 1984.

Sharp, R.L., C.A. Vitelli, D.L. Costill, R. Thomas. Comparison between blood lactate and heart rate profiles during a season of competitive swim training. J. Swim. Res. 1:17-20, 1984.

Young, A.J., W.J. Evans, E.C. Fisher, R.L. Sharp, D.L. Costill. Skeletal muscle metabolism of sea-level natives following short-term high-altitude residence. Eur. J. Appl. Physiol. 52:463-466, 1984.

Costill, D.L., T. Barnett, R.L. Sharp, W.J. Fink, A. Katz. Leg muscle pH following sprint running. Med. Sci. Sports Exerc. 15:37-41, 1983.

Katz, A., D.L. Costill, T. Barnett, W.J. Fink, R.L. Sharp. Leg muscle pH following sprint running. Biochem. Exerc. 5:579-583, 1983.

Troup, J.P., R.L. Sharp, M.J. Plyley, D.L. Costill. Age related differences in peak power among competitive swimmers. J. Sports Med. Phys. Fitn. 16:292-296, 1983.

Sharp, R.L., L.E. Armstrong, D.S. King, D.L. Costill. Buffer capacity of blood in trained and untrained males. Biochem. Exerc. 5:595-599, 1983.

Costill, D.L., R.L. Sharp, W.J. Fink, A. Katz. Determination of human muscle pH in needle biopsy specimens. J. Appl. Physiol.: Respirat., Environ., Exerc. Physiol. 53:1310-1313, 1982.

Sharp, R.L., J.P. Troup, D.L. Costill. Relationship between power and performance in sprint freestyle swimming. Med. Sci. Sports Exerc. 14:53-56, 1982.

Sherman, W.M., M.J. Plyley, R.L. Sharp, P.J. Van Handel, R. McAllister, D.L. Costill. Muscle glycogen and its apparent association with water. Int. J. Sports Med. 3:22-24, 1982.

Book chapters and published proceedings

Sharp, R.L. Nutritional requirements of competitive swimmers. Invited chapter in: Olympic Encyclopedia of Sports Medicine vol VII: Nutrition in Sport. R.J. Maughan (ed), Blackwell Science, London. pp. 609-620, 2000.

Sharp, R.L. Physiology of swimming. Invited chapter in: Exercise and Sport Science. W. Garrett and D. Kirkendall (eds), Lipincott Williams & Wilkins, Pennsylvania. pp. 895-904, 2000.

Nissen, S., L. Panton, J. Fuller, Jr., D. Rice, R. Sharp. Effect of feeding β -hydroxy- β -methylbutyrate (HMB) on body composition and strength of women. Federation of American Societies of Experimental Biology Journal. 11:A150, 1997.

Kolterman, T., P. Miller-Graber, D. McCollum, T. Martinez, and R. Sharp. Effect of exercise, conditioning and yeast culture supplementation on blood parameters in quarter horses. Proceedings 13th Equine Nutrition and Physiology Symposium. 13:167-172, 1993.

McCollum, D., P. Miller-Graber, T. Kolterman, T. Martinez, R. Sharp. The metabolic response to exercise and conditioning: a comparison between Arabians and Quarterhorses. Proceedings 13th Equine Nutrition and Physiology Symposium. 13:205-210, 1993.

Sharp, R.L. Physiology: proper conditioning. In: The Science of Coaching Swimming. Ed. by J. Leonard. Human Kinetics Publishers, Champaign, IL. pp. 71-99, 1991.

Sharp, R.L. New concepts in training intensity. In: Scientific Approach to the Sport of Competitive Swimming. Ed. by J.P. Troup and R. Reese. Scientific Sports Inc., Gainesville, Florida. pp. 98-102, 1983.

Costill, D.L., R.L. Sharp, W.M. Sherman. A survey of the nutritional habits among collegiate athletes. In: Misconceptions in Sports Nutrition. Report I. National Dairy Council, 1980.

Maglischo, C.W., E.W. Maglischo, R.L. Sharp, D.J. Zier, A. Katz. Tethered and non-tethered crawl swimming. In: Sports Biomechanics. Ed. by J. Terauds, K. Barthels, E. Kreighbaum, R. Mann, J. Crakes. Academic Publishers, California. pp. 163-176, 1984.

Contracts and Grants (Funded)

2005-07 Center for Designing Foods to Improve Nutrition. *Nutritional Augmentation of Resistance Training to Blunt Aging-Related Losses of Lean Body Mass, Strength, and Functionality in Middle Aged (50-65y) Humans*. \$39,487. Co-Principal Investigator.

2003-07 NIH – SBIR grant in collaboration with Metabolic Technologies, Inc. *Nutritional Intervention for Older Adult Body Mass Loss*. Principal Investigator in place of Paul Flakoll. Phase II: \$750,000.

2005-07 Center for Designing Foods to Improve Nutrition. *Nutritional Impact on Muscle Recovery after Muscle Fatigue*. Principal Investigator in place of Paul Flakoll. \$32,045.

2004-07 Campbell Soup Company. *Hydration and subsequent exercise tolerance*. \$130,761. Principal Investigator.

- 2002-03 Grain Processing Corporation and Center for Advanced Technology Development. *Metabolic Responses to Ingestion of Acid/Alcohol Modified Starches*. \$72,569. Principal Investigator.
- 2001-02 United States Department of Agriculture (Center for Designing Foods to Improve Human Nutrition). *Postprandial digestion, glycemic response, utilization, and in-vivo fatty acid synthesis from acid-alcohol modified high amylose corn starch*. \$30,296. Co-Principal Investigator. Collaborator: Murray Kaplan (Food Science & Human Nutrition).
- 2000-02 Arab Republic of Egypt. *Visiting scholar research support*. \$28,464. Principal Investigator.
- 2000-01 United States Department of Agriculture (Center for Designing Foods to Improve Human Nutrition). *Optimizing the food guide pyramid to enhance fat oxidation*. \$38,928. Co-Principal Investigator. Collaborator: Doug Lewis (Food Science & Human Nutrition).
- 2000-01 Cerestar USA, Inc. *Metabolic responses to ingestion of acid/alcohol modified and thin-boiled starch during prolonged exercise*. \$69,625. Principal Investigator.
- 1998-99 Cerestar USA, Inc. *Glycemic responses to ingestion of acid/alcohol modified starches*. \$34,113. Co-Principal Investigator. Collaborator: John Robyt (Biochem & Biophys).
- 1998-99 United States Department of Agriculture (Center for Designing Foods to Improve Human Nutrition). *Structural properties of starch in relation to nutritional attributes*. \$27,720. Principal Investigator. Collaborator: Murray L. Kaplan (FSHN).
- 1997-99 Experimental and Applied Sciences, Inc. *Efficacy of Andro-6 in promoting changes in body composition and strength during resistance training*. \$61,032. Co-Principal Investigator. Collaborator: Doug King (HHP).
- 1997-98 Metabolic Technologies, Inc. *Effects of hydroxy-methylbutyrate on strength, body composition, and bone density during weight training in elderly men and women*. \$24,000. Co-Principal Investigator. Collaborators: Lynn Panton.
- 1994-96 Campbell Institute of Research and Technology. *Rehydration after thermal- and exercise-induced dehydration*. \$99,000. Role: Co-Principal Investigator. Collaborators: Doug King (HHP).

- 1994-96 Sigma Kappa Foundation, Inc. *Physiological and biochemical adaptations to resistance training in elderly men and women*. \$5,000. Role: Co-Investigator. Collaborators: Lynn Panton (HHP), Doug King (HHP), Warren Franke (HHP).
- 1993-94 Metabolic Technologies, Inc. *Effects of hydroxy-methylbutyrate on nitrogen retention in weight training adults*. \$65,000. Role: Principal Investigator.
- 1992-95 US Department of Agriculture. *Human glycemic, metabolic, and digestive responses to modified starches*. \$ 104,802 (YR1=\$32,603, YR2=\$39,773, YR3=\$32,426). P.I. Collaborators: Murray Kaplan (FSHN), John Robyt (Biochem & Biophys), Robert Serfass (FSHN), Doug King (HHP).
- 1991-92 University Research Grants. *Depletion and repletion of intramuscular glycogen in response to exercise and diet in the horse*. \$12,404. Role: Co-Investigator. Collaborators: Peggy Miller-Graber (AnSci).
- 1989-91 Scientific Nutrition Development, Inc. *Effects of Maxxon and amino acid complex on metabolic adaptations to training*. \$14,569. P.I.
- 1989-90 Campbells Institute for Research and Technology. *Effect of pre-exercise meals on maintenance of blood glucose during exercise*. \$2000. P.I.
- 1987-88 US Olympic Committee Sports Science Research Grants. *Validity of training prescriptions based on blood lactate profiles*. \$3,600. P.I.
- 1987-89 Campbells Institute for Research and Technology. *Effect of dietary fiber ingestion on carbohydrate utilization during endurance exercise*. \$15,475. P.I.
- 1986-87 US Swimming. *Physiological characteristics of junior elite competitors*. \$1,700. P.I.
- 1986-87 Iowa Beef Industry Council. *Role of dietary protein in prevention of sports anemia*. \$5,000. Co-P.I. Collaborators: William Runyan (Food & Nutr).
- 1984-85 Iowa State University Agriculture Experiment Station. *Modulation of metabolic acids during exercise*. \$2,000/yr. Co-investigator. Collaborators: William Runyan (Food & Nutr).
- 1983-84 Iowa State University Research Grants. *Techniques and mechanisms of human muscle buffer capacity*. \$2,000. P.I.

1982-84 Campbells Institute for Research and Technology. *Effectiveness of canned carbohydrate in muscle glycogen loading and effects on endurance performance.* \$25,716. P.I.

Research Presentations (Since 1990 only).

Kamel, K.S., P. Ekkekakis, and R.L. Sharp. Salivary cortisol and affective changes during a swimming training program. Presented at the American College of Sports Medicine Annual Meeting. Denver, CO June 2006.

Johannsen, N.M., E. Lind, and R.L. Sharp. Effect of beverage temperature and composition on fluid retention after mild dehydration. Presented at the American College of Sports Medicine Annual Meeting. Denver, CO. June 2006.

Macaluso, F., N.M. Johannsen, M.C. Carlson, D.S. Senchina, M. Miller, T.A. Sharp, and R.L. Sharp. Effect of electrolyte containing beverages on measures of hydration during rest. Presented at the American College of Sports Medicine Annual Meeting. Denver, CO. June 2006.

Lind, E., N.M. Johannsen, Wang, B., D.S. King, and R.L. Sharp. Temporal affective response changes reflect internal temperature changes during prolonged cycle exercise. Presented at 2005 Experimental Biology Meetings (FASEB). San Diego, CA 4/2005.

Johannsen, N.M., E. Lind, B. Wang, D.S. King, and R.L. Sharp. Effect of preexercise electrolyte beverage intake on body water estimations by bioimpedance analysis. Presented at 2005 Experimental Biology Meetings (FASEB). San Diego, CA 4/2005.

Johannsen, N.M., E. Lind, B. Wang, D.S. King, and R.L. Sharp. Effects of several preexercise beverages on fluid balance and exercise tolerance. Annual Meeting, American College of Sports Medicine. Nashville, TN 6/2005.

Sharp, R.L. Blood glucose responses of humans to ingestion of modified starches with varied amylose:amylopectin composition. American Chemical Society Annual Meeting. Washington, D.C. 12/2000.

Reifenrath, T.A., R.L. Sharp, G.A. Brown, N.L. Uhl, and D.S. King. Oral anabolic-androgenic supplements during resistance training: Effects on body composition and muscle strength. Annual Meeting, American College of Sports Medicine. Seattle, WA, 1999. Abstract published in Med. Sci. Sports Exerc. 31: , 1999.

King, D.S., R.L. Sharp, G.A. Brown, T.A. Reifenrath, and N.L. Uhl. Oral anabolic-androgenic supplements during resistance training: Effects on serum testosterone and estrogen concentrations. Annual Meeting, American College of Sports Medicine. Seattle, WA, 1999. Abstract published in Med. Sci. Sports Exerc. 31: , 1999.

Brown, G.A., T.A. Reifenrath, N.L. Uhl, R.L. Sharp, and D.S. King. Oral anabolic-androgenic supplements during resistance training: Effects on glucose tolerance, insulin action, and blood lipids. Annual Meeting, American College of Sports Medicine. Seattle, WA, 1999. Abstract published in Med. Sci. Sports Exerc. 31: , 1999.

Parsons, K.A., R.L. Sharp, G.A. Brown, T.A. Reifenrath, N.L. Uhl, and D.S. King. Acute effects of oral anabolic-androgenic supplements on blood androgen and estrogen levels in man. Annual Meeting, American College of Sports Medicine. Seattle, WA, 1999. Abstract published in Med. Sci. Sports Exerc. 31: , 1999.

Knitter, A., L. Panton, A. Peterson, J.A. Rathmacher, and R.L. Sharp. The effects of β -hydroxy- β -methylbutyrate on muscle damage following a 20 kilometer run. Presented at 1998 Experimental Biology Meetings (FASEB).

Ruden, T.M., A.C. Parcell, M.L. Ray, K.A. Moss, J.L. Semler, R.L. Sharp, G.W. Rolfs, and D.S. King. Annual Meeting, American College of Sports Medicine. Cincinnati, OH. 1996. Abstract published in Med. Sci. Sports Exerc. 28:S81, 1996.

Parcell, A.C., M. Ray, K.A. Moss, R.L. Sharp, and D.S. King. Addition of soluble dietary fiber to pre-exercise carbohydrate feedings: Effects on substrate availability and endurance performance. Annual Meeting, American College of Sports Medicine. Cincinnati, OH. 1996. Abstract published in Med. Sci. Sports Exerc. 28:S90, 1996.

Ray, M.L., R.L. Sharp, S.D. O'Sullivan, K.A. Moss, T.M. Ruden, and D.S. King. Rehydration after exercise and thermal-induced dehydration: Effect of sodium concentration. Annual Meeting, American College of Sports Medicine. Cincinnati, OH. 1996. Abstract published in Med. Sci. Sports Exerc. 28:S201, 1996.

O'Sullivan, S.D., R.L. Sharp, D.S. King, L.B. Panton, W.S. White, and T. Hedrick. Influence of carbohydrate ingestion on interval training performance in intercollegiate male swimmers. Annual Meeting, American College of Sports Medicine. Indianapolis, IN, 1995. Abstract published in Med. Sci. Sports Exerc. 27:S13, 1995.

Louk, J.L., K.A. Moss, R.L. Sharp, R.L. Engen, and D.S. King. Effect of induced alkalosis on 1500 m run time. Annual Meeting, American College of Sports Medicine. Indianapolis, IN, 1995. Abstract published in Med. Sci. Sports Exerc. 27:S204, 1995.

Rice, D.E., R.L. Sharp, J.A. Rathmacher, M. Ray, N.N. Abumrad, S.L. Nissen. Role of β -hydroxy- β -methylbutyrate (HMB) during an acute exercise-induced proteolysis. Annual Meeting, American College of Sports Medicine. Indianapolis, IN, 1995. Abstract published in Med. Sci. Sports Exerc. 27:S220, 1995.

Kesl, L.D., R.L. Engen, R.L. Sharp, M.M. Marsh, T.E. Wilson. Effect of oral HCO₃ on muscle glycolysis and performance in racing greyhounds. Annual Meeting, American College of Sports Medicine. Seattle, Washington, June 2-5, 1993. Abstract published in Med. Sci. Sports Exerc. 25(4), 1993.

Shriver, T.C., D.L. Shaulis, S.R. Thompson, R.L. Sharp, and D.S. King. Effect of exercise intensity on glucose tolerance and insulin sensitivity. Annual Meeting, American College of Sports Medicine. Seattle, Washington, June 2-5, 1993. Abstract published in Med. Sci. Sports Exerc. 25(4), 1993.

King, D.S., P.J. Baldus, T.L. Feltmeyer, R.L. Sharp. Time course for loss of improved glucose tolerance in middle-aged people. Annual Meeting, American College of Sports Medicine. Seattle, Washington, June 2-5, 1993. Abstract published in Med. Sci. Sports Exerc. 25(4), 1993.

Sharp, R.L., C.J. Lockard, D.S. King, J.F. Robyt. Effect of pre-exercise modified starch feedings on carbohydrate metabolism during endurance exercise. Annual Meeting, American College of Sports Medicine. Seattle, Washington, June 2-5, 1993. Abstract published in Med. Sci. Sports Exerc. 25(4), 1993.

Kesl, L.D., R.L. Sharp, J. Baumhover, and R.L. Engen. Effect of training on muscle glycolysis in racing greyhounds. Annual Meeting, American College of Sports Medicine. Dallas, Texas, May 29-June 1, 1992. Abstract published in Med. Sci. Sports Exerc. 24: S89, 1992.

King, D.S., T.L. Feltmeyer, P.J. Baldus, R.L. Sharp, AND J.G. Nespor. Effect of eccentric exercise on insulin secretion and action in humans. Annual Meeting, American College of Sports Medicine. Dallas, Texas, May 29-June 1, 1992. Abstract published in Med. Sci. Sports Exerc. 24: S168, 1992.

Moore, B.J., D.S. King, L. Kesl, T.L. Feltmeyer, P.J. Baldus, R.L. Sharp, and J.G. Nespor. Effect of rapid dehydration and rehydration on work capacity and muscle metabolism during intense exercise in wrestlers. Annual Meeting, American College of Sports Medicine. Dallas, Texas, May 29-June 1, 1992. Abstract published in Med. Sci. Sports Exerc. 24: S95, 1992.

Vukovich, M.D., R.L. Sharp, D.S. King, and K. Kershisnik. Effect of protein supplementation on lactate accumulation during submaximal and maximal exercise. Annual Meeting, American College of Sports Medicine. Orlando, FL, May 29-June 1, 1991. Abstract published in Med. Sci. Sports Exerc. 23:S34, 1992.

Sharp, R.L., M. Vukovich, D. King, L. Kesl, and D. Shaulis. Effects of a commercial amino acid supplement on adaptations to cycle ergometer training. Annual Meeting, American College of Sports Medicine. Orlando, FL, May 29-June 1, 1991. Abstract published in Med. Sci. Sports

Exerc.. 23:S15, 1991.

Sharp, R.L., R.J. Ness, A.C. Hackney, W.S. Runyan. Effect of a protein supplement on adaptations to combined aerobic and anaerobic training. Presented at American College of Sports Medicine Annual Convention. May, Dallas, TX. Abstract published in Med. Sci. Sports Exerc. 21:S3, 1988.

Anderson, D.E. and R.L. Sharp. Effects of muscle glycogen depletion on protein catabolism during exercise. This paper was presented at the 1990 American College of Sports Medicine Annual Meeting held in Salt Lake City, UT. Abstract published in Med. Sci. Sports Exerc. 22:S59, 1990.

Sharp, R.L. and A. Kessel. Effects of one-legged endurance training on blood lactate responses to graded exercise. This paper was presented at the 1990 American College of Sports Medicine Annual Meeting held in Salt Lake City, UT. Abstract published in Med. Sci. Sports Exerc. 22:S72, 1990.

Sharp, R.L. Protein supplements and high intensity exercise performance. Midwestern Chapter of American College of Sports Medicine Annual Meeting. Muncie, IN, October, 1990.

Invited lectures

- 11/06 *Role of whole foods in promoting hydration in humans.* Presented at 2006 International Life Sciences Institute Symposium on Hydration. Washington, DC.
- 7/06 University of Palermo (Sicily) School of Medicine. *Effect of exercise on fluid balance.* Presented to faculty and graduate students in Department of Human Anatomy. Palermo, Sicily.
- 7/05 Campbell Soup Company. *Role of sodium in maintaining fluid balance during exercise.* Presented at local meeting of nutritionists and food technologists. Camden, NJ.
- 10/04 Campbell Soup Company. *Food products contributing to hydration.* Presented to company employees. Camden, NJ.
- 9/02 American Academy of Kinesiology and Physical Education Annual Meeting. *Preparing future faculty: the mixture perspective.* Tucson, AZ.
- 9/01 American Swimming Coaches Association World Clinic. *Physiology school.* New Orleans, LA.
- 8/00 .Biochemistry of Polysaccharides Symposium. 220th Annual Meeting of the American Chemical Society. *Blood glucose responses of humans to ingestion of modified starches with varied amylose:amylopectin composition.* Washington, D.C.

- 9/98 American Swimming Coaches Association World Clinic. *Physiological Guidelines for Training*. Atlanta, GA.
- 4/98 Current Issues in Nutrition Annual Symposium. *Nutritional supplements in sport and exercise*. Satellite teleconference broadcast originating from Ames, IA.
- 3/98 Texas Swimming Coaches Association Annual Meeting. *Monitoring adaptations to training*. Dallas, TX.
- 1/98 Carbohydrate Chemistry and Enzymology Symposium. *Blood glucose responses to ingestion of modified starches with varied amylose:amylopectin composition*. Ames, IA.
- 6/97 Central States Swimming Coaches Seminar. *Simple tools for monitoring training progress and assessing training loads*. Chicago, IL.
- 9/96 American Swimming Coaches Association World Clinic. *Scientific directions in human performance research*. New Orleans, LA.
- 4/96 National Age Group Coaches Seminar. *Physiology of training specific to the child athlete*. Colorado Springs, CO.
- 7/95 University of Nevada, Las Vegas. *Training guidelines and prescription methods*. Las Vegas, NV.
- 10/94 American Academy of Physical Medicine and Rehabilitation Annual Convention. *Fatigue in Endurance Sports*. Anaheim, CA.
- 8/93 US Swimming National Coaches College. *Physiology of training*. Colorado Springs, CO.
- 3/93 US Swimming Regional Coaches College. *Prescribing training for competitive swimmers*. Minneapolis, MN.
- 10/92 Competitive Edge Sports Science Symposium. *Lactate tolerance training: adaptations and methods*. Chicago, IL.
- 4/91 Australian Swimming Coaches Association, Annual Meeting. *Lactate tolerance training: the other kind of endurance*. Melbourne, Australia.

- 3/91 Japanese Swimming Coaches Association, Annual Meeting. *Dietary protein requirements of heavy training*. Osaka and Tokyo, Japan.
- 3/91 Australian Institute of Sports - Victoria. *Role of branched-chain amino acids in metabolic adaptations to combined sprint and endurance training*. Melbourne, Australia.
- 10/90 Midwestern Chapter, American College of Sports Medicine. *Protein supplements and high intensity exercise performance*. Muncie, IN.
- 9/90 American Swimming Coaches Association World Clinic. *Physiology of training swimmers*. Washington, DC.
- 2/90 Spanish Olympic Committee. *Field testing of elite athletes*. Pamplona, Spain.
- 4/89 US Olympic Committee Coaches Education Conference. *Training sprint athletes: adaptations*. Colorado Springs, CO.
- 12/88 US Olympic Committee Coaches Education Conference. *Factors affecting performance in sprint sports*. Colorado Springs, CO.
- 8/88 Campbells Institute of Research and Technology. *Effects of dietary fiber on fuel use during exercise*. Camden, NJ.
- 2/88 Mauritius Ministry of Youth and Sport. Conducted two weeks of intensive training for sports medicine professionals on application of sports medicine principles to training of athletes and exercising adults. Mauritius, Indian Ocean. Co-sponsored by US Information Agency.
- 2/88 US Figure Skating Sports Medicine Committee. *Fueling up for competition*. Presented to competitors at 1988 US National Figure Skating Championships. Denver, CO.
- 11/87 Iowa Alliance for Health, Physical Education, Recreation and Dance. *What research says about strength training*. Marshalltown, IA.
- 8/87 US Rowing Association Annual Coaches College. *Physiological aspects of preparing for competition*. Ithaca, NY.
- 5/87 Wisconsin Swimming Coaches Association. *Using scientific principles in designing training*. Madison, WI.
- 2/87 Campbells Soup Company. *Fluid requirements during exercise*. Camden, NJ.
- 11/86 Iowa Alliance for Health, Physical Education, Recreation, and Dance. *Physiological testing of 1984 US Olympic Swimming Teams*. Des Moines, IA.
- 8/86 US Rowing Association Annual Coaches College. *Physiological aspects of training*.

Indianapolis, IN.

- 6/86 US Swimming Coaches College. *Physiology of swimming*. Colorado Springs, CO.
- 5/86 Illinois Sports Medicine Symposium. *Practical applications of sports medicine*. Chicago, IL.
- 2/86 Aspen Sports Medicine Symposium. *Overtraining and current modes of exercise prescription*. Aspen, CO.
- 10/85 American Academy of Physical Medicine and Rehabilitation. Annual Convention. *Physiology of strength training*. Kansas City, MO.
- 10/85 US Swimming Coaches College. *Physiology of swimming*. Colorado Springs, CO.
- 10/85 US Olympic Committee International Elite Coaches Seminar. Muscle strength and strength training for adolescents. Colorado Springs, CO.
- 6/85 US Swimming Coaches College. *Physiology of swimming*. Colorado Springs, CO.
- 5/85 Mexican National Swimming Coaches Association. *Physiological adaptations to swimming training*. Mexico City.
- 9/84 US Swimming Annual Convention. *Physiological characteristics of 1984 US Olympic Swimmers*. Indianapolis, IN.
- 9/84 American Swimming Coaches Association World Clinic. *Use of blood lactate measurements in training*. Chicago, IL.
- 7/84 Campbells Soup Company. *Fluid/electrolyte balance during prolonged exercise*. Camden, NJ.
- 6/84 US Swimming Coaches College. *Physiology of swimming*. Colorado Springs, CO.
- 12/83 National Academy of Science, Food and Nutrition Board. *Human muscle metabolism during anaerobic exercise: role of substrate availability*. Washington, DC.
- 9/83 US Swimming Coaches College. *Physiology of swimming*. Colorado Springs, CO.
- 7/83 Campbells Soup Company. *Carbohydrate loading and endurance performance*. Camden, NJ.
- 6/83 US Swimming Coaches College. *Physiology of swimming*. Colorado Springs, CO.
- 9/82 US Swimming Coaches College. *Physiology of swimming*. Colorado Springs, CO.

- 5/82 US Swimming Coaches College. *Physiology of swimming*. Colorado Springs, CO.
- 9/81 Ohio Swimming Association. *Muscle strength and sprint performance*. Dayton, OH.
- 3/81 National Strength and Conditioning Association. *Physiology of muscle strength*. Columbus, OH.
- 11/80 National Dairy Council. *Laboratory assessment of nutritional status of athletes*. Muncie, IN.

University and Departmental Service

University

Hilton Chair Committee (2005-06). Planning and hosting Judith Stern's visits to ISU during 05-06 year.

College Combination Planning Committee (2004-05).

Search Committee for Department Chair of Food Science and Human Nutrition (2003-04)

Chair, ISU Human Subjects in Research Committee and Institutional Review Board (2001-04)

Nutrition Sciences Council (member since 1986), Chaired Modern Views in Nutrition Seminar Committee in 1993, hosted Jack Wilmore (Univ of Texas), John Holloszy (Washington Univ School of Medicine), Jackie Berning (Nutritionist for Denver Broncos) for seminars.

Physiology Council (member since 1984), Secretary-Treasurer 1992-94.

Dean of College of Education Search Committee (1997-98).

Search Committee for Head Womens Swimming Coach (1997).

University Biohazards and Public Health (1988-92)

University Human Subjects in Research Committee (1998-2001)

University Recreation Committee (1988-89)

University PACE Awards Committee (1998-2001)

College

Chair, College of Education Promotion & Tenure Committee

Promotion & Tenure Committee (2001-present)

Faculty Council (1997-2000)

Graduate Education Committee (1992-94)

Research Committee (1993-94)

Scholarship Committee (1993-94)

Technology Transfer Committee (1993-94)

Department

Director, Human Performance Laboratories (2005-present)

Interim Department Chair (2004-05)

Director of Graduate Education (1999-2004)

Chair, Academic Review Committee (1999-2000)

Curriculum Committee (1997-99, Asst. Chair) (1990-92, member)

DEO Search Committee (1997-98)

Academic Standards Committee (1990-91, Chair) (1993-94, member)

Graduate Program Executive Committee (1997-98) (1993-94) (1986-88)

Evaluation Policies and Procedures (1993-94) (1990-92)

Research Committee (1990-91, Chair)

Promotion and Tenure Procedures Committee (1987-88, Chair)

Service to Professional Organizations

American College of Sports Medicine

Inducted as Fellow in 1988.

Served as Media Contact since 1990.

Chaired Free Communication Sessions at Annual Convention 1990, 1991, 1993, 1996.

Abstract Reviewer 1989-1994 Muscle Physiology section and Sports Performance sections.

American Swimming Coaches Association

Frequent speaker at annual convention.

Established training guidelines used in coaches education manual and certification program. These guidelines have also been adopted for use in two commercial computer programs for coaches: Hytek Workout Manager and Tropical Penguin Cool Coach Training Software.

Co-founded the Journal of Swimming Research as a peer-reviewed journal for the organization to bring laboratory and field-based research into the hands of the coaches. Served on founding editorial board from 1984-89. Served as Publisher and Editor-In-Chief from 1989-1996.

Thesis Advising: Major Professor (699)

- a. Ph.D.
 - 2003 Neil Johanssen. "Role of sodium containing beverages and foods in maintaining fluid balance in exercise". Current Ph.D. student in HHP Ph.D. program.
 - 1997 Melinda Marsh-Ray. "The effect of fluid composition on rehydration following heat and exercise-induced dehydration". Dual major in Nutrition (administered through Department of Food Science and Human Nutrition) and Physiology (administered by Department of Biomedical Sciences).
- b. M.S.
 - 2004 Michaela Carlson. "Pre-exercise ingestion of electrolyte beverages: influence on fluid balance during subsequent exercise in adolescents". Research Assistant, University of Nebraska School of Medicine.
 - 2003 Christopher Ruf. "Accuracy of 1RM predictions in trained and novice lifters". Assistant Strength & Conditioning Coach for ISU football.
 - 2003 Jeffrey Borengasser. "Postprandial glycemic response and utilization of acid-alcohol modified high-amylose corn starch". Head Coach Men's and Women's Tennis.

- 2003 Andrew Keech. "Effect of prior eccentric exercise on muscle lactate accumulation during high intensity exercise". Sports Science & Medicine, International Rugby Union. Brisbane, AUS.
- 2002 Emily Martini. "Effects of acid-modified corn starch ingestion during exercise on carbohydrate utilization". Research Associate, Nike.
- 2001 Larry Schroeder. "Metabolic effects of ingesting modified amylo maize starch during exercise". Secondary school teacher, Biology and Mathematics. West Des Moines, IA.
- 1999 Jennifer Geisking. "The effects of pre-exercise liquid amylopectin ingestion on the glycemic response during endurance exercise". Research Associate, Washington Hospital Cardiac Rehabilitation. Washington, MI.
- 1999 Kerry Parsons. "Acute effects of oral anabolic-androgenic supplements on blood androgen and estrogen levels in man." Ph.D. candidate at University of Florida, Dept. of Chemistry.
- 1998 Aimee Knitter. "The effect of HMB on muscle damage and recovery following a 20 km run." Wellness Director for Student Services, Southern Illinois University.
- 1995 Susan O'Sullivan. "Influence of carbohydrate ingestion on interval training performance in intercollegiate male swimmers." Fitness Instructor in Chicago, IL.
- 1994 Tad Dunsworth. "Effects of three days of cross-country training on nitrogen excretion in adolescent males."
- 1994 Mark Kauk. "Anaerobic and aerobic field tests and physical parameters as predictors of an 800 meter run performance." Physical Education Teacher and Track Coach in Souix City, IA.
- 1994 Cindy Hauber. "Heart rate response to submaximal and maximal workloads during running and swimming ". Research scientist at USDA Animal Disease Lab, Ames, IA.
- 1994 Amy Babcock. "Effects of 2 hour pre-exercise carbohydrate feedings on cycling performance." Physical Therapist at Mary Greeley Medical Center, Ames, IA.
- 1993 Dana Schaulis. "The effects of exercise intensity on post-exercise fat metabolism."

- 1992 Carrie Lockard. "The effect of pre-exercise modified starch feedings on carbohydrate metabolism during endurance exercise." Clinical Dietician specializing in eating disorders at Iowa Lutheran Hospital in Des Moines, IA.
- 1992 Ron Johnson. "Relationship of specific and non-specific tests of power output with sprint freestyle performance." Chiropractor in private practice, Montana.
- 1991 Amy Schreiber. "The reliability of various heart rate indices as indicators of a fixed blood lactate concentration during exercise." Instructor at College of St. Thomas, St. Paul, MN.
- 1990 Thomas Peterson. "An exponential equation to describe the power outputs in 1-second intervals during the Wingate Anaerobic Test in trained and untrained males." Physical Therapy Technician in Carroll, IA.
- 1990 Matthew Vukovich. "The effect of a protein supplement on lactate accumulation during submaximal and maximal exercise." Assistant Professor, Department of Kinesiology, South Dakota State University.
- 1989 Curtis Hart. "The effect of altered acid-base status on the fatigability of human skeletal muscle." Department Chair University of Texas, Arlington.
- 1989 Amy Kessel. "The effects of one-legged endurance training on blood lactate accumulation during graded exercise." Fitness Director in Marshalltown, IA.
- 1989 Dawn Anderson. "The effect of muscle glycogen depletion on protein catabolism during prolonged exercise." Associate Professor of Exercise Science at Winona State University.
- 1988 Henrik Cyren. "The effect of pre-exercise intake of fiber on glucose tolerance and muscle glycogen utilization during endurance exercise." Physical Therapist and D.Sc. candidate at Karolinska Institute in Stockholm, Sweden.
- 1988 Richard Ness. "Effect of protein intake on physiological adaptations to training." Physical Therapist in Fargo, ND.
- 1988 Alan White. "Effects of ingestion of cold water as a pre-cooling maneuver on the physiology of the exercising body." Laboratory Technician in Civil Engineering, Iowa State University.

- 1987 Debra Williams. "Effects of reduced ventilatory frequency during exercise on blood gases and acid-base balance." D.O. in Podiatry in private practice in New York.
- 1986 Mary Beth Horodyski. "Effects of electrical muscle stimulation on subjects with patellofemoral pain syndrome." Associate Professor of Exercise Science at University of Florida.
- 1986 Loraine Nolte. "Effects of elevated protein intake on hematological status of young women during cross-country training." Research Associate at Karolinska Institute in Stockholm, Sweden.
- 1986 Caroline Ungs. "Acute effects of low and high endurance exercise on blood lipids."
- 1986 Debra Oxenrider-Power. "Validity of the use of blood lactate profiles in prescribing exercise intensity." Instructor in Health and Human Performance, Iowa State University.
- 1985 Paul Stanford. "The effects of altered acid-base status on anaerobic performance: a comparison of two anaerobic tests." Investment Banker in Minneapolis, MN.
- 1985 Leslie Bevan. "The effects of eight weeks of intense sprint training on the concentration of carnosine in human skeletal muscle." Research Administration at Oregon Health Sciences University in Portland, OR.
- 1984 Rodney Caughron. "Effects of training status on the accumulation of alanine during several submaximal and maximal levels of bicycle ergometry in man." Associate Professor at Northern Illinois University.
- 1983 Barbara Geske. "Pre-exercise ingestion of glucose and fructose: effect on exercise performance when exercise is begun at pre-determined time of peak blood concentration of the sugar." Instructor in weight loss clinic in East Lansing, MI.