JASON SIEGLER, PhD

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PERSONAL PROFILE

I am currently an Associate Professor and Director of Human Performance in the College of Health Solutions (CHS) at Arizona State University, Phoenix, Arizona. My academic career spans across the US, UK and Australia, and I have published and presented in numerous international forums on topics such as buffering supplementation and maximizing human performance, hydration in athletics and team sports, athlete monitoring in team sports, and injury prevention. Currently, my research interests are primarily focused around fatigue reduction in the context of human exercise performance.

EDUCATION

2004 Doctor of Philosophy in Health, Physical Education, & Recreation, Exercise Physiology Concentration; Minor in Physiology & Research, University of New Mexico

Dissertation: *The influence of active and passive recovery on acid-base kinetics following intense, intermittent exercise*

2001 Master of Science in Health and Human Promotion, Exercise Physiology Concentration, University of Montana

Thesis: *Changes evaluated in soccer specific power endurance either with or without a 10-week, in season strength and plyometric training program*

1995 Bachelor of Science in the School of Education, Sports Medicine Concentration, University of Connecticut

PROFESSIONAL APPOINTMENTS

Associate Professor in Human Performance
Arizona State University, 2021 – present

Teaching Responsibilities/duties: Instruction, mentoring, & advising to undergraduate and graduate students within the College of Health Solutions. Curriculum and instruction include undergraduate and graduate Exercise and Sport Physiology, Advanced Exercise Physiology, Measurement & Monitoring, Exercise Testing & Prescription and Muscle Physiology.

Affiliated Faculty Member
Department of the School of Medicine and Advanced Medical Engineering (SOMME)
Arizona State University, 2025 – present

Teaching courses as the instructor of record & course materials/curriculum development for the SOMME, whilst serving as a mentor for students and participating in school committees, research activities and campus & community activities.

Senior Global Futures Scientist
Julie Ann Wrigley Global Futures Laboratory
Arizona State University, 2022 – present
Research recognition and designated affiliation for research contributions that align with the Julie Ann Wrigley Global Futures Laboratory at ASU.

Research Affiliate – Mayo Clinic
Mayo Clinic Arizona, 2023 – present
Clinical research appointment within the Human Integrative and Environmental Physiology Lab directed by Professor Bruce Johnson. This research affiliate appointment is in conjunction with the ASU Health Futures Center and Integrative Human Performance Labs, and designed to facilitate cross-institutional research collaborations between ASU and the Mayo Clinic.

Director of Human Performance
Arizona State University, 2022 – 2025

Administrative & leadership responsibilities include directing strategic initiatives and planning within the CHS and ASU Health that include academic programs and research within the college and across the university that touches on the domains of performance neuroscience and neurorehab, promotion of healthy lifestyles across the lifespan, and improving athletic & tactical performance.

Thrust Lead – Human Performance Science & Technology Center (PERFORM STC)
Fulton Schools of Engineering
Arizona State University, 2022 – 2024

Administrative & leadership responsibilities include developing the intellectual vision of the PERFORM STC and assist the Director in fostering relationships with business, facilitating new and sustained partnerships, and collaborate on proposals encompassing assessment technologies to analyze human mental, physical and emotional well-being and fitness, with the goal of integrating wellness-inducing behaviors to optimize health, well-being and performance.

Global Sport Institute Affiliated Faculty
Global Sport Institute
Arizona State University, 2022 – 2024
Research recognition and designated affiliation for research contributions that align with the goals of the Global Sport Institute. Affiliation provides financial support for initiatives, conferences and seminars, and professional memberships otherwise not supported by the CHS.

Professor in Sport and Exercise Science
Western Sydney University, 2011 – 2020

Teaching Responsibilities/duties: Instruction, mentoring, & advising to undergraduate and graduate students within the degree program. Curriculum and instruction included undergraduate Exercise Nutrition, Exercise Testing and Measurement, Exercise Prescription, Bioenergetics and Strength and Conditioning.

Director of Academic Program in Sport and Exercise Science
Western Sydney University, 2012 – 2015; 2018 – 2019

Administrative Responsibilities/duties: This role consisted of a 40% workload commitment, and included Sport and Exercise Science staff (faculty) supervisory responsibilities inclusive of staff workload allocation, casual (adjunct) budget, assessments and program/course development.

Lecturer B in Sport, Health and Exercise Science
University of Hull, 2006 – 2010

Responsibilities/duties: Instruction, mentoring, & advising to undergraduate and graduate students within the Department. Curriculum and instruction included undergraduate and post graduate Exercise Physiology, Environmental Physiology, Fitness Training Principles & Clinical Exercise Physiology.

Assistant Professor in Kinesiology
Brooklyn College, 2004 – 2006

Responsibilities/duties: Instruction, mentoring, & advising to degree students with a concentration in Exercise Science. Curriculum and instruction included Physiology of Exercise, Human Physiology & Human Anatomy.

PUBLICATIONS

1. **Siegler, J.C**., Butterick, B., Freire, R., Specht, J., Amorim, F. Exploring the efficacy of sodium bicarbonate supplementation on reducing markers of acute kidney injury (AKI) during physical work in the heat. *Phys Rep* (accepted & in-press 2025)
2. Butterick, B., Kasofskym L., **Siegler, J.**, De Cristofaro, A., De Cristofaro, P., Santello, M. Validation of new anthropometry-based standard for metabolic syndrome and nutritional status screening: A pilot study. *Clin Nutr* (accepted & in-press 2025)
3. Masoud, A., Li, Z., Deyhle, M., **Siegler, J.**, Specht, J., McKenna, Z.J., Mermier, C., Amorim, F. Acute sodium bicarbonate supplementation reduces the increase in markers of acute kidney injury during physical work in the heat. *Eur J Appl Physiol* (accepted & in-press 2025)
4. Stellingwerff, T., Saunders, B., **Siegler, J**. Letter to the Editor" entitled, "Buffering your way to sub-4! - an important consideration for middle-distance performance. *J Appl Physiol* Letter to the Editor (accepted & in-press 2025)
5. Freire, R., Huff, D., Figueroa, E., Butterick, B., **Siegler, J.C.** Knee isokinetic strength benchmarks in athletes across sports categories and performance levels. *Biol Sport,* 42(4): 77-87, 2025
6. Wardenaar, F.C., Clark, N., Stellingwerff, T., **Siegler J.**, Saunders, B., Dolan, E., Wilson, P.B., Hawley, J.A., Fuchs, C.J., Aussieker, T., Philips, S.M., Manore, M., Burke, L.M. Summary of the 2024 Professionals in Nutrition for Exercise and Sport "10 Questions/10 Experts" Session – Hot Topics for the Paris Olympic Games. *Int J Sport Nutr Exerc Metab*, 35: 76-83, 2025.
7. Gray, E., Cavaleri, R., **Siegler, J.C.** Mouth rinsing and ingesting unpleasant salty or bitter solutions, after heavy intensity cycling, does not influence sprint performance or knee extensor force in trained cyclists. *Int J Sports Physiol Perform,* 20(2): 232-237, 2025.
8. Kasofksy, L., Cross, R., Tavoian, D., **Siegler, J.C**. The efficacy of ischemic preconditioning on hand grip strength and strength endurance in para-athletes with spinal cord injury: a pilot study *Int J Sports Physiol Perform.* 19(12): 1508-1511, 2024.
9. Gurton, W.H., King, D.G., Ranchoras, M.K., **Siegler, J.C.,** Gough, L.A. Enhancing Exercise Performance Through Sodium Bicarbonate Supplementation: Introducing the Ingestion Recovery Framework. *Eur J Appl Physiol.* 124: 3175-3190, 2024.
10. Gurton, W.H., Gough, L.A., **Siegler, J.C**., Lynn, A., Ranchordas, M.K. Oral but not topical sodium bicarbonate improves repeated sprint performance during simulated soccer match play exercise in collegiate athletes. *Int J Sport Nutr Exerc Metab*. 34(6): 362-371, 2024.
11. Gantzer, C., Huff, D., Butterick, B., Chalmers, S., Marshall, P., Lovell, R., **Siegler, J.C.** Performing hamstring strengthening exercises before or after training does not influence fatigue indices in competitive youth soccer players. *J Strength Cond Res*. 38(10): 1760-1767, 2024
12. Goldsmith, M., **Siegler, J.C.,** Green, S. Targeted effect of ischemic preconditioning on the gas exchange threshold in healthy males and females. *Eur J Appl Physiol*. 124: 2697-2706, 2024.
13. Robergs, R., O'Malley, B., Torrens, S. **Siegler, J.** The missing hydrogen ion, part-2: where the evidence leads to. *Sports Med Health Sci.* 6(1): 94–100, 2024.
14. Robergs, R., O'Malley, B., Torrens, S., **Siegler, J.** The missing hydrogen ion, part-1: historical precedents vs. fundamental concepts. *Sports Med Health Sci*. 20235(4): 336-343, 2023.

15. Wardenaar, F.C., Whitenack, L., Vento, K.A., Seltzer, R.G.N., **Siegler, J.**, Kavouras, S.A. Validity of combined hydration self-assessment measurements to estimate a low vs. high urine concentration in a small sample of (tactical) athletes. *Eur J Nutr.* 63(1): 185–193, 2023.
16. Gray, E.A., Cavallari, R., **Siegler, J.C.** Mouth rinsing and ingestion of unpleasant salty or bitter solutions does not improve cycling sprint performance in trained cyclists. *Int J Sport Nutr Exerc Metab.* 33(6): 316-322, 2023.
17. Gray, E., Cavallari, R., **Siegler, J.C.** Mouth rinsing and ingesting salty or bitter solutions does not influence corticomotor excitability or neuromuscular function. *Eur J Appl Physiol.* 123:1179-1189, 2023.
18. Rose, C., McGuire, H., Graham, K., **Siegler, J.**, Fazekas de St Groth, B., Caillaud, C., Edwards, K. Partial body cryotherapy exposure drives acute redistribution of circulating lymphocytes: preliminary findings. *Eur J Appl Phyisol.* 123(2), 407-415, 2023.
19. Weigend, F., Clarke, D.C., Obst., O., **Siegler, J.** A hydraulic model outperforms work-balance models for predicting recovery kinetics from intermittent exercise. *Ann Oper Res*. 325, 589-613, 2023.
20. Meyer, T., Jay, O., Altenburg, T., Wilson, F., **Siegler, J.**, Toomas, T. Where have all the reviewers gone? Discussing the importance of the peer review community. *J Sci Med Sport*. 26(4-5), 215-216, 2023.
21. Cross, R., Lovell, R.I.C., Marshall, P.W., Norris, D., **Siegler, J.C.** Scheduling concurrent training 48 versus 72 h after simulated match-play: effects on neuromuscular function and fatigue. *Med Sci Sports Exerc.* 55(2), 301-310, 2023.
22. **Siegler, J.C.**, Carr, A., Jardine, W., Convit, L., Cross, R., Chapman, D., Burke, L.M., Ross, M. The hyperhydration potential of sodium bicarbonate and sodium citrate. *Int J Sport Nutr Exerc Metab.* 32(2): 74-81, 2022.
23. Cross, R., Lovell, R., Marshall, P.W., **Siegler J**. Acute neuromuscular response to team sports-specific running, resistance, and concurrent training: A crossover study. *Med Sci Sports Exerc*. 54(3): 456-465, 2022.
24. Norris, D., Joyce, D., **Siegler, J.**, Cohen, D., Lovell, R. Considerations in interpreting neuromuscular state in elite level Australian Rules football players. *J Sci Med Sport.* 24(7): 702-708, 2021.
25. Redman, K., Steel, K., Kelly, V., **Siegler. J**. Effects of a Rugby League match simulation on decision-making in elite junior Rugby League. *J Strength Cond Res.* 35(7): 1972-1980, 2021.
26. Weigend, F., **Siegler, J.**, Obst, O. A new pathway to approximate energy expenditure and recovery of an athlete. arXiv (GECCO-21 Companion - Proceedings of the 2021 Genetic and Evolutionary Computation Conference Companion), 325-326, 2021.
27. Saunders, B., McNaughton, L.R., **Siegler, J.C.** Editorial: Nutritional buffering strategies to improve exercise capacity and performance. *Frontiers in Nutrition*. 8: 116, 2021.
28. Dillon, P., Norris, D., **Siegler, J.**, Joyce, D., Lovell, R. Determination of locomotor qualities in elite Australian Football: A pragmatic approach. *J Sports Sci.* 39(13): 1445-1451, 2021.
29. Lovell, R., Halley, S., **Siegler, J.**, Wignell, T., Coutts, A.J., Massard, T. Use of numerically-blinded ratings of perceived exertion in soccer: assessing concurrent and construct validity. *Int J Sports Physiol Perform*. 15(10): 1430-1436, 2020.
30. McKay, A.K.A., Peeling, P., Binnie, M., Goods, P.S.R., Sim, M., Cross, R., **Siegler, J**. Topical sodium bicarbonate application does not improve blood buffering capacity or enhance exercise performance. *Int J Sports Physiol Perform*. 15(7): 1005-1011, 2020.
31. Boegman, S., Stellingwerff, T., Shaw, G., Clarke, N., Graham, K., Cross, R., **Siegler, J.C**. Effectiveness of individualizing sodium bicarbonate supplementation in elite rowers. *Front Nutr*. 7(138), 2020.
32. Marshall, P.W., Rasmussen, S.B., Krogh, M., Halley, S., **Siegler, J.C.** Changes in the quadriceps spinal reflex pathway after repeated sprint cycling are not influenced by ischemic preconditioning. *Eur J Appl Physiol*. 120: 1189-1202, 2020.
33. Marshall, P.W., Metcalf, E., Hagstrom, A.D., Cross, R., **Siegler, J.C.**, Enoka, R.M. Changes in fatigue are the same for trained men and women after resistance exercise. *Med Sci Sports Exerc*. 52(1): 196-204, 2020.
34. Halley, S.L., Marshall, P.W., **Siegler, J.C**. The effect of ischaemic preconditioning and changing inspired O_2 fractions on neuromuscular function during intense exercise. *J Appl Physiol*. 127(6): 1688-1697, 2019.
35. Chalmers, S., **Siegler, J.**, Lovell, R., Lynch, G., Gregson, W., Marshall, P., Jay, O. Brief in-play cooling breaks reduce thermal strain during football in hot and humid conditions. *J Sci Med Sport.* 22(8): 912-918, 2019.
36. Halley, SL., Marshall, P., **Siegler, JC**. The effect of IPC on central and peripheral fatiguing mechanisms in humans following maximal single limb isokinetic exercise. *Physiol Rep.* 7(8):e14063, 2019.
37. Cross, R., **Siegler, J.**, Marshall, P., Lovell. R. Scheduling of training and recovery during the in-season weekly micro-cycle: Insights from team sports practitioners. *Eur J Sport Sci.* 19(10): 1287-1296, 2019.

38. Norris, D., Joyce, D., **Siegler, J.**, Clock, J., Lovell, R. Recovery of force-time characteristics after Australian Rules Football matches: Examining the utility of the isometric midthigh pull. *Int J Sports Physiol Perform.* 14(6): 765-770, 2019.
39. Halley, S., Marshall, P., **Siegler, J**. The effect of ischaemic preconditioning on central and peripheral fatiguing mechanisms in humans following sustained maximal isometric exercise. *Exp Physiol*. 103(7): 976-984, 2018.
40. **Siegler, J.C.**, Vargas, N., Green, S. Sodium bicarbonate supplementation minimally affects the accumulated oxygen deficit during high intensity-cycling to volitional exhaustion. *Transl Sports Med.* 1: 95-100, 2018.
41. **Siegler, J.C.**, Marshall, P.W., Finn, H., Cross, R., Mudie, K. 10-weeks resistance training under metabolic alkalosis does not affect neuromuscular mechanisms associated with rapid force generating capacity. *PLoS One.* 13(5): e0196677, 2018.
42. Lovell, R., Knox, M., Weston, M., **Siegler, J.C.**, Brennan, S., Marshall, P.W.M. Hamstring injury prevention in soccer: Before or after training? *Scand J Med Sci Sports.* 28(2): 658-666, 2018.
43. Chrismas, B., Taylor, L., Smith, A., Pemberton, P., **Siegler, J.C.**, Midgley, A. Reproducibility of measurement techniques used for creatine kinase, interleukin-6 and high-sensitivity c-reactive protein determination over a 48 h period in males and females. *Meas Phys Educ Exerc Sci*. 22:3 191-199, 2018.
44. Rose, C., Edwards, K.M., **Siegler, J.**, Graham, K., Caillaud, C. Effects of whole-body cryotherapy on recovery from exercise-induced muscle damage: A systematic review. *Int J Sports Med.* 38: 1049-1060, 2017.
45. Chrismas, B., Taylor, L., **Siegler, J.C.**, Midgley, A. A reduction in maximal incremental exercise test duration 48 h post downhill run is associated with muscle damage derived from exercise induced pain. *Front Physiol.* 8:135: 10.3389/fphys.2017.00135, 2017.
46. Melville, G., **Siegler J.C.**, Marshall, P.M. The effects of d-aspartic acid supplementation in resistance-trained men over a three month training period. *PLoS One.* 12(8): e0182630, 2017.
47. Midgley, A., Earle, K., McNaughton L.R., **Siegler, J.C.**, Clough, P., Earle, F. Exercise tolerance during VO2max testing is a multifactorial psychobiological phenomenon. *Res Sports Med* 25(4): 480-494, 2017.
48. **Siegler, J.C.**, Marshall, P.W.M., Bishop, D., Shaw, G., Green, S. Mechanistic insights into the efficacy of sodium bicarbonate supplementation for athletic performance. *Sports Med – Open*. 2: 41, 2016.
49. **Siegler, J.C.**, Mudie, K., Marshall, P. The influence of sodium bicarbonate on maximal force and rates of force development in the triceps' surae and brachii during fatiguing exercise. *Exp Physiol*. 101(11): 1383-1391, 2016.
50. Brooks, C., **Siegler, J.C.**, Marshall, P.W.M. Relative abdominal adiposity is an important contributor to chronic low back pain: a cross-sectional study. *BMC Public Health*, 16: 700, 2016.
51. Green, S., **Siegler, J.C**. Empirical modeling of metabolic alkalosis induced by sodium bicarbonate ingestion. *Appl Physiol Nutr Metab*. 41(10): 1092-1095, 2016.
52. Lovell, R.L., **Siegler, J.C.**, Knox, M., Brennan, S., Marshall, P. Acute neuromuscular and performance responses to Nordic hamstring exercises completed before or after football training. *J Sports Sci: Sci & Med in Football*. 34(24): 2286-2294, 2016.
53. Chrismas, B., Taylor, L., Smith, A., Pemberton, P., **Siegler, J.**, Midgley, A. Muscle damaging exercise 48 h prior to a maximal incremental exercise treadmill test reduces time to exhaustion: is it time to reconsider our pre-test procedures? *Res Sports Med*. In Press (2016).
54. Marshall, P.W.M., Lovell, R.J., **Siegler, J.C**. Changes in passive tension of the hamstring muscles during a simulated soccer match. *Int J Sports Physiol Perform*. 11(5): 594-601, 2016.
55. Marshall, P.W.M., Finn, H.T., **Siegler, J.C**. The magnitude of peripheral muscle fatigue induced by high and low intensity single-joint exercise does not lead to central motor output reductions in resistance trained men. *PLoS One*. 10(10):e0140108, 2015.
56. Marshall, P.W., Lovell R., Knox M.F., Brennan, S.L., **Siegler, J.C**. Hamstring fatigue and muscle activation changes during six sets of Nordic hamstring exercise in amateur soccer players. *J Strength Cond Res*. 29(11): 3124-3133, 2015.
57. **Siegler, J.C.**, Marshall, P.W. The effect of metabolic alkalosis on central and peripheral mechanisms associated with exercise induced muscle fatigue in humans. *Exp Physiol*. 100(5):519-30, 2015.
58. Melville, G.W., **Siegler, J.C.**, Marshall, P.W.M. Three and six grams supplementation of d-aspartic acid in resistance trained men. *J Int Soc Sports Nutr*. 12:15, 2015.
59. **Siegler, J**., Marshall, P., Pouslen, M., Nielsen, N., Kennedy, D., Green, S. The effect of pH on fatigue during submaximal contractions of the human calf muscle. *Eur J Appl Physiol*. 115(3):565-577, 2015.
60. Weston, M., **Siegler, J**., Bahnert, A., McBrien, J., Lovell, R. The application of differential ratings of perceived exertion to Australian Football League matches. *J Sci Med Sport*. 18(6):704-708, 2015.
61. Flinn, S., Herbert, K., Graham, K., **Siegler, J.C**. The differential effect of metabolic alkalosis and hypoxia on high intensity cycling performance. *J Strength Cond Res*. 28(10): 2852–2858, 2014.

62. Marshall, P.W.M., **Siegler, J.C**. Differences in hamstring extensibility, stiffness, and stretch tolerance between males and females. *BMC Musculoskeletal Disorders*. 15: 223, 2014.
63. Marshall, P.W., Lovell, R., Jeppesen, G.K., Andersen, K., **Siegler, J.C.** Hamstring Muscle Fatigue and Central Motor Output during a Simulated Soccer Match. *PLoS One*. 9(7):e102753, 2014.
64. Finn, H.T., Brennan, S.L., Gonano, B.M., Knox, M.F., Ryan, R.C., **Siegler, J.C**., Marshall, P.W.M. Muscle Activation does not Increase after a Fatigue Plateau is Reached during Eight-Sets of Resistance Exercise in Trained Individuals. *J Strength Cond Res*. 28(5): 1226-1234, 2014.
65. **Siegler, J.C.**, Marshall, P., Raftry, S., Brooks, C., Dowswell, B., Romero, R., Green, S. The differential effects of metabolic alkalosis on maximum force and rate of force development during repeated, high-intensity cycling. *J Appl Physiol*. 115(11): 1634-1640, 2013.
66. Brooks, C., Marshall, P.M., **Siegler, J.C.**, Cheema, B.C. No relationship between body mass index and changes in pain and disability following exercise rehabilitation for chronic low back pain. *Spine J*. 38(25): 2190-2195, 2013.
67. Angela R. Hillman, Mark C. Turner, Daniel J. Peart, James W. Bray, Lee Taylor , and **Jason Siegler**. A comparison of hyperhydration vs. ad libitum fluid intake strategies on measures of thermoregulation and endurance performance. *Res Sports Med*. 21:305-317, 2013.
68. **Siegler, J.C.**, Page, R. Turner, M., Mitchell. The effect of carbohydrate and marine peptide hydrolysate co-ingestion on endurance exercise metabolism and performance. *J Int Soc Sports Nutr*. 10:29, 2013.
69. Asamoah, S., **Siegler, J.**, Chang, D., Scholey, A., Yeung, A., Cheema, B. Effect of aerobic training on cognitive function and arterial stiffness in sedentary young populations: a pilot randomized controlled trial. *Physiology Journal*. 2013:1-9, 2013.
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77. Forbes, H., **Siegler, J.C**. Seasonal variation in the isokinetic strength of youth soccer players: Effects of age and dominance. *Gazzetta Medica Italiana Archivio per le Scienze Mediche* (formerly The Journal of Sports Medicine and Physical Fitness). 171(3), 253-261, 2012.
78. Mark Turner, Richard Page , Nigel Mitchell, **Jason Siegler.** The effects of Energised Greens™ upon blood acid-base balance during resting conditions. *J Int Soc Sports Nutr*. 8(1):14, 2011.
79. Angela R. Hillman, Rebecca V. Vince, Lee Taylor, Lars McNaughton, Nigel Mitchell, **Jason Siegler**. Exercise-induced dehydration with and without environmental heat stress results in increased oxidative stress. *Appl Physiol Nutr Metab*. 36(5):698-706, 2011.
80. **Siegler, J.C.**, Rehman, S., Bhumireddy, G.P., Abdula, R., Klem, I., Brener, S.J., Lee, L., Dunbar, C.C., Saul, B., Sacchi, T.J., Heitner, J.F. The accuracy of the electrocardiogram during exercise stress test based on heart size. *PLoS One*. 6(8): 2011, Article number e23044.
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84. **Jason C. Siegler**, Lars R. McNaughton, Adrian W. Midgley, Simon Keatley, Angie Hillman. Metabolic alkalosis, recovery and sprint performance. *Int J Sports Med*. 31(11):797-802, 2010.
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100. Lars R. McNaughton, Steve Kenney, **Jason Siegler**, Adrian W. Midgley, Ric J. Lovell, and David J. Bentley. The Effect of Superoxygenated Water on Blood Gases, Lactate, and Aerobic Cycling Performance. *Int J Sports Physiol*. 2:377-385, 2007.
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102. R. Lovell, **Siegler, J.**, Kirke, I., McNaughton, L., Greig, M. Soccer half-time strategy influences thermoregulation and endurance performance. *J Sports Med Phys Fitness*. 47(3):263-269, 2007.
103. **Siegler, J.C**., Robergs, R.A., Faria, E.W., Wyatt, F.B., McCarthy, J. Noninvasive profiling of exercise-induced hypoxemia in competitive cyclists. *Res Sports Med.* 15:1-6, 2007.
104. **Siegler, J.C.**, Bell-Wilson, J., Mermier, C., Faria, E., Robergs, R.A. Active and passive recovery and acid-base kinetics following multiple bouts of intense exercise to exhaustion*. Int J Sport Nutr Exerc Metab*. 16(1):92-107, 2006.
105. **Siegler, J.C.**, Robergs, R.A., Weingart, H. The application of soccer performance testing protocols to the non-elite population. *J Sports Med Phys Fitness*. 46(1):44-51, 2006.
106. Robergs, R.A., K. Hutchinson, S. Hendee, S. Madden, **J.C. Siegler**. Influence of pre-exercise acidosis and alkalosis on the kinetics of acid-base recovery following intense exercise. *Int J Sport Nutr Exerc Metab.* 15(1):49-74, 2005.
107. **Siegler, J.**, Gaskill, S., Ruby, B.C. Changes evaluated in soccer specific power endurance either with or without a 10-week, in season strength and plyometric training program. *J Strength Cond Res*. 17(2):379-387, 2003.

In Review

Huff, D., Gantzer, C., **Siegler, J**. Assessing the sensitivity of foot-mounted inertial measurement units during a submaximal fitness test to identify post-match fatigue within elite youth football players. *J Strength Cond Res*

Boro, T.L., Rezaei, S., Kavoura, I.E., Kooima, P., Wasserbeck, A., Schott, K.D., Wardenaar, F.C., **Siegler, J.C.**, Kavouras, S.A. Better rehydration with a high sodium and potassium beverage. *Int J Sport Nutr Exerc Metab*

Rezaei, S., Guerrero, R.I., Kooima, P., Kavoura, I.E., Gopalakrishnan, S.T., Long, C.E., Wardennar, F.C., **Siegler, J.C.**, Munoz, C.X., Kavouras, S.A. Low-sugar flavored beverage improves fluid intake in children during exercise in the heat. *Nutr*

Ryan, R., **Siegler, J.**, Taylor, C., Lovell, R. Development and validation of an athlete-specific chronotype index. *Sports Med*

Goldsmith, M., Green, S., Behm, H., Hirka, L., **Siegler, J.** The effect of ischemic preconditioning on swimming performance: A case study on two elite male swimmers. *J Sci Med Sports*

FUNDING (Procured & Active)

LIV-Energy (Unilever Corporation) (2024)
The impact of a caffeinated sports drink on exercise performance
Kavouras, S., **Siegler, J.**, Tang, Y.
$327,589

Department of Defense – US Air Force: Air Force Research Labs (AFRL) (2025)
Advanced Warfighter Physiology
Evaluation of the use of artificial intelligence strategies to forecast heat stress responsiveness and seasonal acclimatization
Ruby, B., Slivka, D., **Siegler, J.**
Sub-award through ASU: $118,593

CHS Pilot Grant Initiative – Heat and Health (2024)
Exploring the efficacy of sodium bicarbonate supplementation on reducing markers of acute kidney injury (AKI) during physical work in the heat
Siegler, J., Amorim, F., Wardenaar, F., Kavouras, S., Johnson, B.
$49,676

Mayo Clinic Arizona Cardiovascular Research Grant (2025)
Breath biomarkers in human performance physiology. Developing novel methods for the collaborative Mayo Clinic Sports Cardiology – ASU Human Performance Phenotyping Laboratory
PI Mayo – B. Johnson; PI ASU – **J. Siegler**
$75,000

ASU Foundation (2024) through WellnessBrand
The efficacy of cold, hot and massage therapy: impact on human performance
Siegler, J.
$13,500

ASU Foundation (2022) through Tignum
Support for human performance initiatives
Siegler, J.
$15,000

FUNDING (Unsuccessful Proposals 2023 – 2024)

National Basketball Association

NBA Ankle Sprain Initiative Biomechanical Testing Partnership
Lockhart, T., Coza, A., Leddon, C., Lee, H., McIntosh, D., Santello, M., **Siegler, J.** (CoPI)
$2,310,569

Arizona New Economy Initiative (NEI) Science and Technology Center (STC): PERFORM
The efficacy of cold, hot and massage therapy: impact on human performance
Siegler, J., Lunter, P.
$35,836

American College of Sports Medicine Research Grant
Exploring the efficacy of sodium bicarbonate supplementation on reducing markers of acute kidney injury (AKI) during physical work in the heat
Freire, R., Amorim, F., Wardenaar, F., Kavouras, S., Johnson, B., **Siegler, J.**
$9,687

Department of Defense – Office of Naval Research
Central and peripheral biomarkers of heat stress resilience
Tang, Y., Larson, R., **Siegler, J.**
$596,943 (Investigator recognition: $47,755)

VALD Performance Grants
Physical Quality Profiling and Targeted Neuromuscular Injury Prevention Programs for Adolescent Female Soccer Players
Siegler, J., Larson, R., Marsit, J.
$55,022 (Investigator recognition: $44,018)

FUNDING (Completed)

ASU Foundation (2022) through Momentous
Nutritional support to optimize recovery projects in the College of Health Solutions
Siegler, J.
$5,000

JumpStart Grant (2021)
Exploring the use of ischemic preconditioning to improve neural recruitment during strength training in individuals with spinal cord injury.
Siegler, J., LaZear, G.
$20,000

National Science Foundation (2021)
Acquisition of a High Heat Compatible Sweating Thermal Manikin for Interdisciplinary Research and Education on Human Thermal Exposure and Safety in Hot Climates
Konrad Rykaczewski (PI) & multiple CI (**Siegler, J.** included)
$413,875 (Investigator recognition: $12,416)

International Rugby Board Research Funding Grant (2018)
The incidence and impact of non-time-loss and time-loss injury in adolescent community level Australian Rugby
Sampson, J.A., Lovell, R., Williams, S., **Siegler, J.**, Whalan, M., Lewis., M. and Grey., T
$235,650

GWS AFL Giants (2018)
Data Science and AFL Performance
Lovell, R., **Siegler, J.**
$25,000

University of Wollongong (2018)

The incidence and impact of non-time loss and time-loss injury in adolescent community level Australian Rugby
Lovell, R., **Siegler, J.**
$9,819

Western Sydney Partnership Grant (2017)
Examining match activity profiles in women's AFL
Ric Lovell, **Jason Siegler**, Laurence Park, Samuel Chalmers
$10,000

AFL Research Board (2017)
Development and Implementation of an AFL and AFLW Heat Policy
Ric Lovell, **Jason Siegler**, Ollie Jay, Samuel Chalmers
$63,540

Parramatta Eels Rugby League PhD Scholarship (Greater Western Sydney Football Club, NSW) (2017)
Ric Lovell, **Jason Siegler**
$45,000

(2) GWS Giants PhD Scholarships (Greater Western Sydney Football Club, NSW) (2017, 2016)
Jason Siegler, Ric Lovell
$90,000

Bossley Park High School (2016)
The timing and optimisation of injury prevention programs in youth team sports
Ric Lovell, **Jason Siegler**
$10,000

(2) Sports and Exercise Science High Performance PhD Scholarships (Westfields Sports High School, NSW) (2017, 2015)
Jason Siegler, Ric Lovell
$90,000

Westfields Sports High School (2015)
The timing and optimisation of injury prevention programs in youth team sports
Jason Siegler, Ric Lovell
$10,000

Sports Research and Injury Prevention Scheme (WorkCover NSW) (2015)
Optimisation of the FIFA 11+ injury prevention program: implications for youth soccer players
Jason Siegler, Ric Lovell, Paul Marshall
$18,770

Penrith Panthers Professional Rugby League Club (NRL) (2014)
Individualisation of speed thresholds in Rugby League external load monitoring
Ric Lovell, **Jason Siegler**
$5,000

Westfields Sports High School (2014)
Determination of physiological thresholds in soccer
Jason Siegler, **Ric Lovell**
$5,000

New South Wales Sporting Injuries Committee (2012)
Hamstring Injury Prevention in Soccer: Before or After Training?
Ric Lovell, **Jason Siegler**, Paul Marshall
$30,419

UWS Research Partnerships Program (2012)
Physiological fatigue and performance monitoring in Australian Rules Football
Jason Siegler, Ric Lovell, Paul Marshall, Simon Green, John Quinn, Andrew Bahnert
$65,940

Australian Institute of Sport: The High Performance Sport Research Fund (2012)
The Impact of Whole Body Cryotherapy and Cold Plunge Pool exposure on Muscle Function, Damage, and Immune and Inflammatory Markers after eccentric exercise
Kenneth Graham, Corinne Caillaud, Kate Edwards, Jason Siegler
$37,998

Nestle (2010)
Double blind-controlled trial of milk beverages with and without cocoa rich in polyphenols in young children: acute metabolic effects of exercise.
Steve Atkin, Jason Siegler, J Mazzoni
£95,852 GBP

British Association of Sport & Exercise Sciences (BASES) International Travel Grant (2009)
Oral presentation at ACSM: 'Influence of sodium bicarbonate and an active or passive recovery on repeated wingate performance'
Jason Siegler
£500

Scunthorpe United FC (2007)
Monitoring training loads in professional football
Ric Lovell, Colin Walker-Johnson, Lars McNaughton & Jason Siegler
£20,000 GBP

Western Sydney University Initiatives

School of Science and Health Catalysing Innovative Learning and Teaching (2014)
Creating innovative teaching and learning reference material: a blended learning approach to a practical dilemma
Jason Siegler, Ric Lovell
$7,143

School of Science and Health (SoSH) UWS Research Seed Grant (2014)
The influence of pH on skeletal muscle adaptation to high intensity exercise training
Jason Siegler
$8,450

School of Science and Health UWS Strategic Research Investment (2013)
Automated analysis of player work rate using GPS and tri-axial accelerometer activity
Ric Lovell, Jim Basliiakis, Jason Siegler, Anthony Maeder
$16,941

School of Science and Health Catalysing Innovative Learning and Teaching (2013)
Multidisciplinary student feedback provision: consistency, timeliness and efficiency
Jason Siegler, Chris Lonsdale
$9,576

School of Science and Health UWS Strategic Research Investment (2013)
Development of a Doppler-based system for non-invasive cardiac output measurement
Simon Green, Chloe Taylor, Jason Siegler, Vaughan Macefield
$29,500

School of Science and Health (SoSH) UWS Research Seed Grant (2012)
The influence of metabolic alkalosis on afferent feedback pathways during fatiguing exercise

Jason Siegler
$8,450

New Researcher Project Development Grants (2011)
The effect of ingesting hydrolysed marine peptides (fish protein) on cellular stress during prolonged, high intensity exercise
Jason Siegler
$4,972

Brooklyn College Initiatives

PSC - CUNY 36 Research Award (2005; 2006 Renewal)
Comparison of the efficacy of various sports drinks on thermoregulation and performance capacity of soccer players
Jason Siegler
$8,400 USD

CONFERENCES

Invited Lectures & Symposiums

2025 pH and Performance – University of New Mexico Research Group, Albuquerque, NM

2024 Beating the heat with sodium bicarbonate supplementation: a thermoregulatory strategy to improve physical performance; Southwest American College of Sports Medicine (SACSM) Annual Meeting – Irvine, CA

2024 Myth Busters in Sports Nutrition; American College of Sports Medicine (ACSM) Annual Meeting – PINES Special Interest Group, Boston, MA

2023 Myth Busters in Sports Nutrition; American College of Sports Medicine (ACSM) Annual Meeting – PINES Special Interest Group, Denver, CO

2023 Half Baked: an academic journey across the globe – Deakin Research Group, Melbourne, AUS

2022 Integration of buffering agents into hyperhydration strategies prior to competing in the heat; European College of Sport Science (ECSS) Annual Meeting – Sports Nutrition Special Interest Group, Sevilla, ESP

2022 The physiology behind high intensity exercise & neuromuscular fatigue; Kinesiology Institute (AT Still), Mesa, AZ

2022 Nutritional buffering strategies: Applying practice to science; Sports Nutrition Webinar, Arizona State University

2021 Nutritional buffering strategies: Applying practice to science; Queensland Academy of Sport – Nutrition Department, Gold Coast, AUS

2020 Nutritional buffering strategies: Applying practice to science; Canadian Institute of Sport – Nutrition Department, British Columbia, CAN

2017 Individualising sodium bicarbonate for athlete performance; Applied Physiology Conference, New South Wales Institute of Sport, Sydney, AUS

2016 Metabolic Alkalosis and Neuromuscular Fatigue during Exercise; Aspetar Orthopaedic and Sports Medicine Hospital, Doha, QATAR

2016 pH and Neuromuscular Function in the Context of Fatiguing Exercise; Qatar University, Doha, QATAR

2015 Sodium Bicarbonate: a contemporary view on mechanisms and application; Australian Institute of Sport, Canberra, AUS

2015 pH, Fatigue and Performance; Charles Sturt University, Bathurst, AUS

2013 Blood Buffering and High Intensity Exercise; English Institute of Sport, Manchester, UK

2012 Acid-Base Manipulation and Fatigue; University of Tasmania and Tasmania Institute of Sport, Launceston, AUS

2011 Blood Acid-Base Balance, Regulation and Athletic Performance; College of Science and Health, School of Medicine, University of Western Sydney, Sydney, AUS

2009 The Practical Application and Efficacy of Glycerol as a Hyperhydrating Agent; online symposium for Grupo Sobre Entrenamiento, Cordoba, Argentina

2009 Sodium Bicarbonate Loading; Student BASES Conference, Hull, UK

2009 Metabolic Buffering & High Intensity Exercise; British Cycling, Manchester, UK

2009 Guest Panellist, "Fast Track, A weekly round-up of African sports news," BBC World Service

2008 Extracellular Buffer Manipulation and Induced Metabolic Acidosis; English Institute of Sport, London, UK

2003 Exercise Physiology for the Health Professional; NY Dietetics Association Annual State Meeting, Saratoga Springs, NY

Conference Presentations (Presenting and/or Senior Author)

2024 The effect of sodium bicarbonate on acute kidney injury after physical work in the heat; American College of Sports Medicine Annual Meeting, Boston, MA (poster)

2024 A combination of high sodium and potassium leads to better rehydration during a 4-h period; American College of Sports Medicine Annual Meeting, Boston, MA (poster)

2023 Effect of ischemic preconditioning on swimming performance: a case study on two elite male swimmers; American College of Sports Medicine Annual Meeting, Denver, CO (poster)

2023 Exploring the use of ischemic preconditioning prior to exercise after spinal cord injury: a pilot; American College of Sports Medicine Annual Meeting, Denver, CO (poster)

2022 The effect of chronotype on the dose-response to field-based training in elite Rugby League; American College of Sports Medicine Annual Meeting, San Diego, CA (Thematic poster)

2021 Unpleasant tastants do not influence neuromuscular function or corticomotor excitability despite sympathetic nervous system activation; American College of Sports Medicine Annual Meeting, Online (Thematic poster)

2021 The efficacy of combining sodium bicarbonate and glycerol ingestion for the purposes of hyperhydration; American College of Sports Medicine Annual Meeting, Online (Thematic poster)

2020 The efficacy of individualizing sodium bicarbonate supplementation strategies on elite-level rowing performance; American College of Sports Medicine Annual Meeting, San Francisco, CA (Thematic poster)

2020 The effect of ischemic preconditioning and hypoxia on neuromuscular function during intense exercise; American College of Sports Medicine Annual Meeting, San Francisco, CA (oral)

2020 The efficacy of topical sodium bicarbonate application on blood buffering capacity and exercise tolerance; American College of Sports Medicine Annual Meeting, San Francisco, CA (Thematic poster)

2020 The athlete specific chronotype index (ACTi); American College of Sports Medicine Annual Meeting, San Francisco, CA (poster)

2018 Individualising loading strategies to maximise the efficacy of sodium bicarbonate supplementation: A pilot study; European College of Sport Science Annual Conference, Dublin, IRE.

2018 The effect of IPC on central and peripheral fatiguing mechanisms following sustained maximal isometric exercise; European College of Sport Science Annual Conference, Dublin, IRE.

2017 The influence of alkalosis on muscle force and power in the triceps surae and brachii; American College of Sports Medicine Annual Meeting, Denver, CO (poster)

2016 The influence of sodium bicarbonate on maximal force and rates of force development in the calf and triceps during fatiguing exercise in humans; European College of Sport Science, Vienna, Austria (oral)

2015 The differential effect of metabolic alkalosis on central and peripheral mechanisms associated with fatigue; American College of Sports Medicine Annual Meeting, San Diego, CA (poster)

2014 The effect of metabolic acidosis on maximal force production and muscle recruitment during repeated, submaximal calf contractions to task failure; Experimental Biology Conference (American Physiological Society), San Diego, CA (poster)

2012 The effect of metabolic alkalosis on localised neuromuscular fatigue during intermittent, high-intensity cycling at a fixed cadence; Exercise Biology Conference (American Physiological Society), Denver, CO (poster)

2011 The influence of sodium bicarbonate supplementation timing on repeated sprint ability; Fatigue Conference, Bathurst, AUS (oral)

2011 The influence of varying sodium bicarbonate loading times on repeated sprint performance; National ACSM Meeting, Denver, CO (oral)

2011 The influence of varying sodium bicarbonate loading times on repeated sprint performance; National Sports Medicine Australia (SMA) Meeting, Perth, AUS (oral)

2010 Influence of Heat and Dehydration on Cycling Time Trial Performance; National ACSM Meeting, Baltimore, MD (poster)

2009 Influence of sodium bicarbonate and an active or passive recovery on repeated wingate performance; National ACSM Meeting, Seattle, WA (oral)

2008 Influence of pre-exercise alkalosis and recovery mode on acid-base balance following intense exercise; National ACSM Meeting, Indianapolis, IA (thematic poster)

2007 Influence of pre-exercise alkalosis and recovery mode on the kinetics of acid-base recovery following intense exercise; National BASES Meeting, Bath, UK (poster)

2007 The Influence of Glycerol Ingestion on Physical Performance and Thermoregulatory Responses during Soccer Training Sessions; National ACSM Meeting, New Orleans, LA (oral)

2007 Effects of Sports Drinks Supplements on Performance and Thermoregulatory Responses of Soccer Players; VI the World Congress on Science & Football, Antalya, Turkey (oral)

2006 Accumulated Oxygen Deficit & pH Recovery during Multiple Bouts of Intense Exercise; National ACSM Meeting, Denver, CO (poster)

2005 Influence of Active & Passive Recovery on Acid-Base Kinetics During Multiple Bouts of Intense Exercise; National ACSM Meeting, Nashville, TN (poster)

2004 Influence of Active & Passive Recovery on Acid-Base Kinetics During Multiple Bouts of Intense Exercise; Mid-Atlantic Chapter ACSM Regional Meeting, Bushkill, PA (oral)

2003 Influence of Pre-exercise Acidosis and Alkalosis on the Kinetics of Acid-Base Recovery Following Intense Exercise; Southwest Chapter ACSM Regional Meeting, Las Vegas, NV (oral)

2003 Physiological Threshold Associations at Varying Levels of Hypobaric Hypoxia; ACSM National Meeting, San Francisco, CA (oral)

2003 Muscle Tissue Saturation and Physiological Thresholds at Varying Levels of Hypobaric Hypoxia; ACSM National Meeting, San Francisco, CA (poster)

2003 Utilizing a Logarithmic Regression to Identify Thresholds; ACSM National Meeting, San Francisco, CA (poster)

2003 Influence of Pre-Acidodic and Alkalotic Reserve on the Extent of Acid-Base Recovery from Intense Exercise; National Meeting, American Society of Exercise Physiologists, Sacramento, CA (oral)

2002 Determination of the Relationship Between the Loughborough Intermittent Shuttle Test and VO2max, VT, Body Composition, 30s Wingate, 20m Sprint, Vertical Jump, & 5RM bench and Leg Press; Southwest Chapter ACSM, Las Vegas, NV (oral)

2001 Effects of a Season Long Strength and Conditioning Program on Female Adolescent Soccer Players; Northwest Chapter ACSM, Salem, OR (poster)

TEACHING EXPERIENCE

2023 – present Advanced Exercise Testing and Prescription, Arizona State University

2021 – present Advanced Exercise Physiology, Arizona State University

2021 – present Exercise and Sport Physiology, Arizona State University

2021 – present Muscle Physiology, Arizona State University

2021 – 2022 Measurement in Sport and Fitness, Arizona State University

2011 – 2020 Exercise Nutrition, Western Sydney University

2015 – 2020 Exercise Testing and Measurement, Western Sydney University

2014 – 2015 Exercise Bioenergetics, Western Sydney University

2011 – 2020 Exercise Nutrition, Western Sydney University

2011 – 2013 Exercise Prescription for General Populations, Western Sydney University

2006 – 2010 Exercise Physiology, University of Hull

2006 – 2010 Fitness Training Principles, University of Hull

2006 – 2010 Environmental Physiology, University of Hull

2004 – 2006 Physiology of Exercise, Brooklyn College

2004 – 2006 Human Anatomy, Brooklyn College

2004 – 2006 Human Physiology, Brooklyn College

2003 – 2004 Human Movement (Kinesiology), Santa Fe Community College

2003 – 2004 Prevention & Care of Exercise Injury, Santa Fe Community College

2003 – 2004 Physical Fitness Theory & Instruction, Santa Fe Community College

Graduate Supervision

PhD (Current – Arizona State University)
4 as primary supervisor; 2 as co-supervisor

PhD (Completions – Western Sydney University)
4 as primary supervisor, 10 completions (co-supervisor)

PhD (Completions – University of Hull)
3 as primary supervisor; 1 as secondary supervisor

Masters (Current – Arizona State University)
2 as primary supervisor; 1 as co-supervisor

Masters (Completions – Arizona State University)
3 as primary supervisor; 1 as co-supervisor

Masters (Completions – Western Sydney University)
1 as primary supervisor; 3 as secondary supervisor

Masters (Completions – University of Hull)
2 as primary supervisor

Honours (1 year post-graduate research degree – Western Sydney University (degree no longer offered)
8 as primary supervisor; 10 as secondary supervisor

ADDITIONAL ACTIVITIES

Administrative Experience

Director of Human Performance Focus area – College of Health Solutions
Thrust Lead – PERFORM STC: Fulton School of Engineering
Committees within College of Health Solutions (5) – Arizona State University
Director of Academic Program – Western Sydney University
School Assessment Committee – Western Sydney University
Campus Life Committee – Western Sydney University
School Research Committee – Western Sydney University
Director of Post Graduate Studies & Research – University of Hull
Collaborative Provisions Officer – University of Hull
Advisory Committee on Academic Computing – Brooklyn College
Grants and Research Committee – Brooklyn College

Professional Accreditations

2003 – present Fellow and member of American College of Sports Medicine (FACSM)

2013 – 2015 Member of American Physiological Society

2007 – 2011 Accredited Sport and Exercise Scientist (Physiology – Research), The British Association of Sport and Exercise Sciences (BASES)

2006 – 2011 Member, National Strength and Conditioning Association (NSCA)

1995 – 2017 Certified Athletic Trainer, National Athletic Trainers' Association (NATA)

Editor & Reviewer Roles

Deputy Editor: Journal of Science and Medicine in Sport
Review Editor: Frontiers Physiology
Reviewer: Medicine & Science in Sports & Exercise
Reviewer: Journal of Physiology
Reviewer: International Journal of Sports Physiology & Performance
Reviewer: International Journal of Sport Nutrition & Exercise Metabolism
Reviewer: Journal of Sports Sciences
Reviewer: International Journal of Sports Medicine
Reviewer: Journal of Strength and Conditioning Research
Reviewer: Journal of Athletic Training
Reviewer: British Journal of Sports Medicine

Technical Skills
Phlebotomy & Biochemical Analysis of Blood
Clinical Exercise Stress Testing & ECG Analysis
Metabolic Gas Analysis
Muscle Nerve Stimulation
ADInstruments Data Acquisition Systems (Powerlab Data Acquisition System & Labchart)
Surface electromyography (EMG)