

WHY PERFORMANCE & SPORT SCIENCE MATTER



The application of sport science — harnessing scientific processes to elevate performance and mitigate injury risk — is surging to new heights. Bridging the gap between researcher and practitioner, sport scientists have carved out a specialized role that makes them indispensable across training landscapes.

Professional & Elite Sports

BOOST PERFORMANCE WITH INTEGRATED DECISION-MAKING

Sport scientists can optimize team training, performance, health, and rehabilitation¹

Using systematic frameworks, sport scientists design strategic solutions and audit results²

Together with support staff, they transform complex insights into actionable training plans³



Student Athletics & Education

ELEVATE STUDENT-ATHLETE DEVELOPMENT AND EDUCATION

Interdisciplinary approaches provide unprecedented support for health and performance⁴

Improve problem-solving approaches for success in complex environments⁵

Early exposure increases student interest in sports, analytics, and STEM careers⁶



Tactical Performance

IMPROVE READINESS & RESILIENCE WITH REAL-WORLD DATA

Technology interventions enable “stress inoculation”⁷ and previously impossible training scenarios⁸

Feedback from wearable monitors augment performance and self-regulation⁷

Analyzing physiological biomarkers can improve understanding of performance variables and reduce injury⁹



Society & General Population

ENHANCE EVERYDAY LIFE WITH TECH-POWERED PERSONALIZATION

Wearables increase quality of life, track daily activity, and provide data to professionals^{10, 11}

Exergames improve motivation in youth, elderly, and special populations¹¹

Sport science innovations enhance ergonomic products and prosthetics¹²

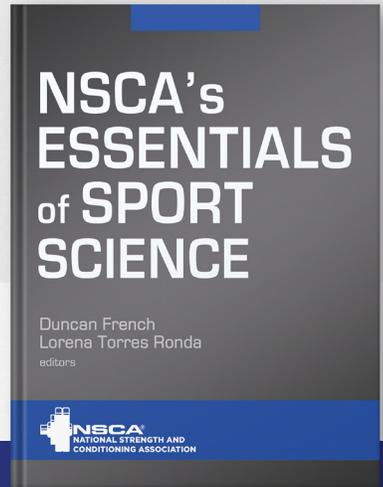


NSCA Supports Sport Science



Become a **Certified Performance and Sport Scientist® (CPSS®)**, the first certification of its kind in North America.

Get the resource that's **defining the industry** to accelerate your program and path to certification.



PROFESSIONAL & ELITE SPORTS

"Sport scientists can facilitate the application of rational scientific principles to develop robust decision-making processes."²

¹Malone, J.J., Harper, L.D., Jones, B., Perry, J., Barnes, C., & Towlson, C. (2019). Perspectives of applied collaborative sport science research within professional team sports. *European Journal of Sport Science*, 19(2), 147-155.

²Ward, P., Windt, J., & Kempton, T. (2019). Business Intelligence: How Sport Scientists Can Support Organization Decision Making in Professional Sport. *International Journal of Sports Physiology and Performance*, 14(4), 544-546.

³Gleason, B.H., Suhomel, T.J., Brewer, C., McMahon, E.L., Lis, R.P., & Stone, M.H. (2024). Defining the Sport Scientist. *Strength & Conditioning Journal*, 46(1), 2-17.

TACTICAL SECTOR

"Military readiness in the 21st century will benefit from the appropriate leveraging of integrative and holistic monitoring technologies for soldier performance and data analytical frameworks that provide military leaders with real-time physiological insight for actionable decisions."⁷

⁷Billing, D.C., Fordy, G.R., Friedl, K.E., & Hasselström, H. (2021). The implications of emerging technology on military human performance research priorities. *Journal of Science and Medicine in Sport*, 24(10), 947-953.

⁸Moreno, A., Segura, Á., Zlatanova, S., Posada, J., & García-Alonso, A. (2012). Benefit of the integration of semantic 3D models in a fire-fighting VR simulator. *Applied Geomatics*, 4, 143-153.

⁹Koltun, K.J., Bird, M.B., Forse, J.N., & Nindl, B.C. (2023). Physiological biomarker monitoring during arduous military training: Maintaining readiness and performance. *Journal of Science and Medicine in Sport*, 26 Suppl. 1, S64-S70.

STUDENT ATHLETICS & EDUCATION

"[A] well-designed sport science program can catalyze comprehensive integration through collaborative efforts to increase service, education, research, and innovation within athletics."⁵

⁴Rimer, E. et al. (2024). Building Comprehensive Integration of Health and Performance Support Through Sport Science. *Strength & Conditioning Journal*, 41(1), 55-68.

⁵Fullagar, H.H.K., McCall, A., Impellizzeri, F.M., Favero, T., & Coutts, A.J. (2019). The Translation of Sport Science Research to the Field: A Current Opinion and Overview on the Perceptions of Practitioners, Researchers and Coaches. *Sports Medicine*, 49(12), 1817-1824.

⁶Drazan, J.F. (2020). Biomechanists can revolutionize the STEM pipeline by engaging youth athletes in sports-science based STEM outreach. *Journal of Biomechanics*, 99, 109511.

SOCIETY & GENERAL POPULATION

"Tools such as smart watches help monitor one's progress by inducing the user to lead a healthier lifestyle by leveraging their intrinsic motivation."¹¹

¹⁰Cilli, E., Ranieri, J., Guerra, F., Ferri, C., & Di Giacomo, D. (2022). Naturalizing digital and quality of life in chronic diseases: Systematic review to research perspective into technological advancing and personalized medicine. *Digital Health*, 8.

¹¹Di Fuccio, R., Lombardi, D., & Finestrone, F. (2022). New technologies to guarantee physical well-being: Didactic and motivational strategies. *Formazione & insegnamento*, 20 Suppl. 1, 125-135.

¹²Ellapen, T.J., & Paul, Y. (2016). Innovative sport technology through cross-disciplinary research: Future of sport science. *South African Journal for Research in Sport, Physical Education and Recreation*, 38(3), 51-59.



The National Strength and Conditioning Association® (NSCA) is a 501©(3) educational non-profit committed to providing resources on the benefit of sport science to organizations, professionals, and the public. We look forward to working with you.

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