Abstract: Applied research over the past 20 years has produced major advances in the science of sport-related concussion (SRC). Modern approaches to the study of SRC have provided an innovative paradigm, with numerous methodological advantages over traditional approaches. In a clinical setting, both basic and applied science now drive consensus guidelines with respect to diagnosis, treatment and protocols for return to activity after SRC. Technological advances in functional neuroimaging and blood biomarkers have created a powerful bridge between the clinical and basic science of concussion in humans. This lecture will present emerging evidence from the NCAA-DoD Concussion Assessment, Research and Education (CARE) Consortium, the largest and most comprehensive study of SRC to date, and other large-scale studies of SRC. Translational impact of research on clinical practice will be highlighted.