I will provide a brief overview of the human-systems engineering (HSE) field. I will review three research studies including an occupational ergonomics investigation of classification of human motor skill, a study on enhanced risk assessment for workplace hazard control, and a human-automation interaction study of cognitive workload in upper-extremity prosthetic use. The first study demonstrates the use of an inexpensive and accessible virtual reality simulation for evaluating human motor performance. Statistical and machine learning methods are applied to extracted data features for accurate skill classification providing a basis for training protocol design. The second study presents a fuzzy-set approach to safety risk classification along with a new model of risk exposure that accounts for levels of system reliability. The third study is akin to the first and presents a method for unobtrusively assessing mental workload in using powered-prosthetics for daily living tasks with sensitive comparisons among device control modes. I will also identify follow-on research directions and funding programs for such HSE studies.