Rocky Mountain INFORMS: September 17, 2026

The Rocky Mountain INFORMS Chapter is pleased to host Lt Col John L. Cox, Ph.D., an Assistant Professor of Computer and Cyber Sciences at the United States Air Force Academy. He serves as the computer science representative to the Operations Research Working Group, developing and delivering computing coursework that supports more than 30 operations research graduates each year. His experience spans explosives research, aircraft store separation, computer science education, and leadership of Air Force analysis teams supporting recruiting, training, and education. His research includes solar power system design and dispatch optimization, military accession matching, and steel production scheduling. He received his Ph.D. and M.S. in Operations Research with Engineering from Colorado School of Mines, an M.S. in Aeronautical Engineering from the Air Force Institute of Technology, and a B.S. in Aeronautical Engineering from the United States Air Force Academy.



Title: Iterations Towards Customer Acceptance

Abstract: A mathematically strong solution does not guarantee that customers will use it. This talk traces the development of a decision-support tool for Air Force recruiting, where qualified applicants must be matched to available jobs and training dates while accounting for applicant preferences, eligibility, and production goals for recruiting flights and individual recruiters. An initial bipartite matching model evolved into a mixed-integer program to incorporate goal shortfalls and competing priorities. Although early versions demonstrated improved matching performance and reduced processing time, field adoption remained minimal.

Using Boyd's Observe–Orient–Decide–Act loop as a framework, the talk examines how successive rounds of stakeholder feedback changed the mathematical formulation, software interface, and language used to present the tool. Revisions preserved users' decision authority, allowed manual adjustments and user-defined priorities, and reduced the effort required to prepare data and interpret results. The resulting application gained sustained use across the recruiting service. The case illustrates practical lessons for operations research practitioners: listen to customers, test assumptions through small deliveries, and treat workflow fit, transparency, and user control as essential parts of model implementation.