TIMOTHY R. COOLEY, PH.D.
7979 Red Rock Circle
Larkspur, CO 80118
(719) 338-8511 (cell/office) (303) 681-3327 (Fax)
E-mail: tcooley@dynamx.org

Qualification Highlights

- Accomplished leader/mentor/teacher with significant technical experience; superior problem solver with diverse background and strong presentation skills; highly motivated self-starter who is equally effective as a team member or as an independent worker

- Ph.D. (Computer Science/BioMedical Engineering), Rutgers University, NJ.
Specialties: Image Processing, Neural Networks, Machine Learning/Optimization
Thesis: *An Automated System for the Classification of Mammograms*

- United States Air Force Academy Modeling and Simulation Chair

- President/founder of consulting firm providing valuable guidance to varied organizations

- Communications Squadron Commander/Deputy Commander of 200+ people

- End User Program Manager for $650M in communications/computer programs

Professional Experience

Management/Leadership

- Principle Investigator for JFCOM/USAFA team developing/validating metrics and performing mathematical/statistical analysis on black markets, and terrorist/criminal networks.

- Modeling and Simulation (M&S) Chair for 535 faculty and 4,400 cadets at USAF Academy; coordinated all M&S efforts/programs; directed/founded gaming research laboratory; prepared/submitted grant proposals; secured over $300K in funding over 3 years.

- Chair of Standing Study Group for the Economics of M&S for the Simulation Interoperability Standards Organization; leads team investigating many aspects of M&S investment, return on investment (ROI), business practice, and decision support.

- Communications Squadron Commander/Deputy Commander of 200+ civilian and military personnel; responsible for day-to-day operations supporting base level communications and the Defense Accounting and Finance Center – key person in leading a marginal squadron to consecutive "Excellent" inspection ratings.

- Deputy Department Head, USAFA Department of Mathematical Sciences; 50 officer/civilians, 4,800 annual enrollments, 28 courses; responsible for all academic issues including curriculum design; academic metrics and assessments; hiring, and mentoring/training new faculty; mentoring/advising cadets; led team that totally redesigned calculus and engineering math curricula, integrated technology into the classroom resulting in significantly improved student knowledge retention.

- Program Manager for Communications-Computer and Space programs, Cheyenne Mountain Complex; responsible for tracking and critiquing development of three critical space and

missile warning computer systems, $650 million in total program costs; served on flag officer tiger team verifying and prioritizing system requirements.

Technical Experience

- Principal researcher for JFCOM; studying supply chains for terrorist networks using innovative system decomposition, and M&S methods to identify critical nodes.

- Consultant to team developing metrics for M&S ROI; lead for uses of these metrics in the decision analysis process for M&S investment; key member in producing 300+ page report.

- Consultant to team performing cost analysis of United States Marine Corps training systems; bringing unique and specialized methods to determine value of systems.

- Team member on SBIR developing tool to advise on investment in medical M&S systems; Leading decision support module development

- Mentor and advisor for nine Operations Research Capstone Project groups at the USAF Academy; provided technical guidance in decision support, optimization, mathematical and statistical analysis, M&S, Visual Basic for Applications (VBA), and data presentation.

- Sole creator of USAF Combat Analysis course; provides problem solving, metric development, and analysis of real-world problems using VBA and Geographical Information Systems.

- Led team that updated and redesigned USAF Academy's calculus and engineering math curricula; incorporated technology, technical writing, and teaching of problem solving techniques; developed metrics to assess progress; provided technical oversight and advice to ensure thorough topical coverage – highly acclaimed by engineering accreditation team.

- Mentor for high school modeling team competing in the Consortium for Mathematics and its Applications High School Mathematical Contest in Modeling; provided guidance and preparation for contest – team finished in top 30% world-wide in its first competition.

- Taught 16 unique courses in Mathematics, Operations Research, and Computer Science ranging from introductory courses to senior/first-year graduate school level.

- Developed 10,000+ lines of code implementing state of the art image processing and display algorithms utilizing neural networks, wavelet transforms, and invariant moments.

Volunteer Work

- Serving on Board of Directors, and Director of Development, Shepherd Project Ministries, Castle Rock, CO
- Founding Committee, National Modeling and Simulation Coalition, Alexandria, VA

Education

Ph.D. (Computer Science/BioMedical Engineering), Rutgers University, New Brunswick, NJ, 1996.

M.S. (Computer Science/Numerical Analysis), Rutgers University, New Brunswick, NJ, 1984.

B.S. (Applied Mathematics and Computer Science with Honors) UNION College, Schenectady, NY, magna cum laude, inducted into Phi Beta Kappa, 1982

Awards

- 2011 Defense Acquisition University Research Paper of the Year and Hirsch Prize Recipient

US Citizen with active Top Secret/SSBI Security Clearance