

CURRICULUM VITAE

NANCY J. COOKE

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5810 South Sossaman Road
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EDUCATION

B.A., Psychology, 1981, George Mason University, Fairfax, VA

M.A., Psychology, 1983, New Mexico State University, Las Cruces, NM

Ph.D., Psychology, 1987, New Mexico State University, Las Cruces, NM

PROFESSIONAL POSITIONS

- 1981-1987 Graduate Research Assistant, Department of Psychology and Computing Research Laboratory, New Mexico State University, Las Cruces, NM. (Roger Schvaneveldt, advisor)
- 1987-1992 Assistant Professor, Department of Psychology, Rice University, Houston, TX.
- 1987-1992 Research Consultant, Lockheed Engineering and Sciences Corporation and NASA Johnson Space Center, Houston, TX.
- 1992 Summer Faculty, Armstrong Lab, Brooks AFB, San Antonio, TX.
- 1992-1994 Assistant Professor, Department of Psychology, New Mexico State University, Las Cruces, NM.
- 1994-1999 Associate Professor, Department of Psychology, New Mexico State University, Las Cruces, NM.
- 1999-2002 Professor, Department of Psychology, New Mexico State University, Las Cruces, NM.
- 2003-04 National Research Council Research Associateship, AFRL, Mesa, AZ
- 2003-present Professor, Applied Psychology Unit, Arizona State University Polytechnic Campus
- 2003-present Science Director and board member, Cognitive Engineering Research Institute, Mesa, AZ

PROFESSIONAL ACTIVITIES

Member of:

- American Psychological Association
- American Psychological Society
- Cognitive Science Society
- Human Factors and Ergonomics Society (Fellow since 2000)
- HFES Cognitive Engineering and Decision Making Technical group (program chair 2001-2002)
- Arizona Human Factors and Ergonomics Society (2003 – present)

Editor in Chief

Human Factors (1/2005-present)

Editorial Board:

- Erlbaum Series - *Expertise: Research and Applications*
- JAI Press Series - *Advances in Human Performance and Cognitive Engineering Research*

Recent Consulting:

- Aptima, Inc. “Shared Understanding of Commander’s Intent Across Levels of Command” (1/2005-12/2005)

Honors and Awards:

- Elected Fellow of the Human Factors and Ergonomics Society in 2000

- Appointed to National Academies of Sciences National Research Council Committee on the Safety and Security of Spent Nuclear Fuel Storage (March 2004 – January 2005)
- Appointed to National Academies of Sciences National Research Council Committee on Human-System Design Support for Changing Technology (May 2005 – present)
- Recipient of the 2006 Human Factors and Ergonomics Society's O. Keith Hansen Outreach Award.
- Appointed to National Academies of Sciences National Research Council Committee on Human Factors (January 2007 – present)

Review Panels

- National Science Foundation, Information Technology Research (ITR) Program review panel (June 2005).

EXPERTISE

Courses Taught: capstone course in applied psychology, cognitive psychology, experimental methods, memory, thinking, engineering psychology, human-computer interaction, expertise and expert systems, expertise and skill acquisition, introduction to psychology (honors level), industrial-organizational psychology, cognitive engineering and advanced technologies, team cognition.

Research Areas: cognitive engineering, knowledge elicitation, cognitive task analysis, team cognition, team situation awareness, mental models, expertise, human-computer interaction, command-and-control in unmanned aerial vehicles, emergency response systems, hospital environments

GRANTS & CONTRACTS

Computing Research Laboratory, NMSU: *The User Interface in Computer Systems*, 7/1/83-6/30/85, \$127,463, with R.W. Schvaneveldt.

Sperry Corporation, Albuquerque, NM: *The Acquisition and Representation of Knowledge for Expert Systems*, 9/85-8/86, \$24,000, with J. McDonald, D. Partridge, & P. Lopez.

Rice University Faculty Research Grant: *Chess Expertise and Chess Knowledge*, 9/87-9/88, \$945.00.

Rice University Faculty Research Grant: *Expert Conceptual Representations*, 9/88-9/89, \$1000.00.

Rice University Faculty Research Grant: *The Development of Expertise*, 9/89-9/90, \$1000.00.

New Mexico State University Minigrant, *A Comparative Evaluation of Knowledge Elicitation Techniques*, 5/93-12/93, \$1709.00.

AFOSR Research Initiation Proposal, *An Approach to On-line Assessment and Diagnosis of Student Troubleshooting Knowledge*, 1/93-12/93, \$20,000.00.

XSOFT contract, *Tabworks Usability Project*, 4/94-5/94, \$7521.00, with D. Gillan.

INTEL gift in support of research, 9/95-11/95, \$6500.

Microsoft Corporation, *Making Usability Data More Usable*, 1/96-7/96, \$24,323, with D. Gillan.

AFOSR, *Assessing Structural Knowledge: An Analysis of Knowledge Referents*, 1/97-10/97, \$23,073.

DOD DURIP (Defense University Research Instrumentation Program) grant, CERTT: *Facility for Cognitive Engineering Research on Team Tasks*, 4/97-12/97, \$296,104.

AFOSR, *Shared Knowledge and Team Performance: A Cognitive Engineering Approach to Measurement* 2/98-12/00, \$447,000.

AFOSR, *CERTT Laboratory System Improvements*, 6/00-12/00, \$67,621.

ONR, *Methods for the Analysis of Team Communication*, 6/00-3/03, \$470,430 with P. Foltz.

AFOSR, *Team Cognition in Distributed Mission Environments*, 2/01-12/02, \$408,644. (Year 3 at ASU)

ARI, *Understanding Aspects of Individual and Collaborative Skill Acquisition in Face-to-Face and Distance Training Situations*, 9/01-8/04, \$418,341 co-pi with A. Lee and D. Gillan. (at NMSU)

ONR, *Toward a Universal Metric of Human Performance*, 11/01-12/04, \$310,797, with A. Lee (PI) (At NMSU).

NASA. *Toward a Model of Organizational Risk: Critical Factors at the Team Level* 6/02-8/02, \$39,709.

ONR, *Using Team Communication to Understand Team Cognition in Distributed vs. Co-located Mission Environments*, 3/24/03-9/30/05, \$437,351. [grant to ASU]

AFOSR, *The Role of Individual and Team Cognition in Uninhabited Air Vehicle Command-and-Control*, 2/15/03-12/31/03, \$250,127. [grant to ASU]

AFOSR, *Acquisition and Retention of Coordination in Command-and-Control*, 3/15/04-12/31/06, \$449,640. [grant to CERI]

- AFRL, *Acquisition and Retention of Coordination in Command-and-Control*, 3/11/04-12/31/06, \$224,990. [grant to CERI and subcontract to ASU]
- AFRL, AFOSR, NASA: *Human Factors of UAVs Workshop: Manning the Unmanned*, 5/24-25, 2004 CERI workshop, \$27,000. [funds to CERI]
- AFRL, AFOSR, FAA, Microanalysis and Design: *Second Annual Human Factors of UAVs Workshop: Manning the Unmanned*, 5/25-26, 2005 CERI workshop, \$28,000. [funds to CERI]
- ONR, *Automatic Tagging of Macrocognitive Collaborative Processes through Communication Analysis*, 6/1/05-9/30/08, \$564,546, co-pi with P. Kiekel, CERI. [grant to ASU and subcontract to CERI]
- ONR, *IMAGES: Instrument for Measuring and Advancing Group Environmental Situation Awareness*, \$49,799, 9/1/05 – 3/1/07. [Aptima subcontract to CERI on Phase II STTR].
- Northrop Grumman/AFRL, *Team-Based Assessment of Socio-Technical Logistics (TASL)*, \$58,861 6/1/2005 – 11/30/2005 [awarded to CERI]
- AFRL, AFOSR, FAA, Research Integrations: *Third Annual Human Factors of UAVs Workshop: Manning the Unmanned*, 5/24-26, 2006 CERI workshop, \$21,000. [funds to CERI]
- ARI SBIR, *Shared Understanding Across Levels of Command*: \$129,605, 1/3/06-12/21/07. [Aptima subcontract to ASU on Phase II SBIR]
- CA Space Grant Foundation, *UAV Alliance, Research, and Development Curriculum Project*, \$54,899, 11/21/05-8/30/06. [grant to ASU]
- ONR MURI (grant to ASU, UCF Prime) *Cognition and Collaboration in Network Centric Operations: Understanding & Measuring Macrocognition in Teams*, \$1,155,182.00, 5/1/06-4/30/09.
- AFRL SBIR: *Intelligent Decluttering of UAV Displays*, \$19,503, 5/1/06-1/30/07. [Kutta Consulting subcontract on SBIR Phase I]
- AFOSR STTR: *Communication Analysis for Enhanced Team Performance in the AOC*, \$41,451, 8/1/06-4/30/07. [Aptima subcontract on STTR Phase I]
- AFOSR, AFRL: *Cognitive Coordination on the Network Centric Battlefield*, \$545,105, FA9550-07-1-0081, 1/1/07-11/30/09 [grant to CERI].

PUBLICATIONS

Journal Articles

- 1) Schvaneveldt, R. W., Durso, F. T., Goldsmith, T. E., Breen, T. J., Cooke, N. M., Tucker, R. G., & DeMaio, J. C. (1985). Measuring the structure of expertise. *International Journal of Man-Machine Studies*, 23, 699-728.
- 2) Cooke, N.M., & McDonald, J.E. (1986). A formal methodology for acquiring and representing expert knowledge. *Proceedings of the IEEE: Special Issue on Knowledge Representation*, 74, 1422-1430. (Reprinted in *Expert Systems: A Software Methodology for Models and Applications*, (1990) P. Raeth (Ed.). Los Alamos, CA: IEEE Computer Society Press.)
- 3) Cooke, N.M, Durso, F.T., & Schvaneveldt, R.W. (1986). Recall and measures of memory organization. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, 12 (4), 538-549.
- 4) Durso, F.T., Cooke, N.M., Breen, T.J., & Schvaneveldt, R.W. (1987). Is consistent mapping necessary for high-speed search? *Journal of Experimental Psychology: Learning, Memory, and Cognition*, 13 (2), 223-229.
- 5) Cooke, N.M., & McDonald, J. E. (1987). The application of psychological scaling techniques to knowledge elicitation for knowledge-based systems. *International Journal of Man-Machine Studies*, 26, 533-550.
- 6) Cooke, N. J. & Schvaneveldt, R. W. (1988). Effects of computer programming experience on network representations of abstract programming concepts. *International Journal of Man-Machine Studies*, 29, 407-427.
- 7) Cooke, N. J. (1990). Practice makes perfect -- or does it? (Review of *The Nature of Expertise* by Chi, Glaser, and Farr) *Journal of Contemporary Psychology*, 35, 251-253.
- 8) Gillan, D. J., Breedin, S. D., & Cooke, N. J. (1992). Network and multidimensional representations of the declarative knowledge of human-computer interface design experts. *International Journal of Man-Machine Studies*, 36, 587-615.
- 9) Cooke, N. J. (1992). Predicting judgment time from measures of psychological proximity. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, 18, 640-653.
- 10) Cooke, N. J., & Bartha, M. C. (1992). An empirical study of psychological metaphor. *Journal of Metaphor and Symbolic Activity: Special Issue*, 7, 215-235.

- 11) Cooke, N. J. (1992). Eliciting semantic relations for empirically derived networks. *International Journal of Man-Machine Studies*, 37, 721-750.
- 12) Halgren, S. L. and Cooke, N. J. (1993). Towards ecological validity in menu research. *International Journal of Man-Machine Studies*, 39, 51-70.
- 13) Cooke, N. J., Atlas, R.S., Lane, D. M., & Berger, R. C. (1993). The role of high-level knowledge in memory for chess positions. *The American Journal of Psychology*, 106, 321-351.
- 14) Cooke, N. J., & Breedin, S. D. (1994). Constructing naive theories of motion on-the-fly. *Memory and Cognition*, 22, 474-493.
- 15) Cooke, N. J. & Breedin, S. D. (1994). Naive misconceptions of Cooke and Breedin's research: Response to Ranney. *Memory and Cognition*, 22, 503 - 507.
- 16) Cooke, N. J., Durso, F. T., & Schvaneveldt, R. W. (1994). Retention of skilled search after nine years. *Human Factors*, 36, 597-605.
- 17) Cooke, N. J. (1994). Varieties of knowledge elicitation techniques. *International Journal of Human-Computer Studies*, 41, 801-849.
- 18) Rowe, A. L., & Cooke, N. J. (1995). Measuring mental models: Choosing the right tools for the job. *Human Resource Development Quarterly*, 6, 243-255.
- 19) Cooke, N. J., & Neville, K. J., & Rowe, A. L. (1996) Procedural network representations of sequential data. *Human-Computer Interaction*, 11, 29-68.
- 20) Rowe, A. L., Cooke, N. J., Hall, E. P., & Halgren, T. L. (1996). Toward an on-line knowledge assessment methodology: Building on the relationship between knowing and doing. *Journal of Experimental Psychology: Applied*, 2, 31-47.
- 21) Cooke, N. J., & Rowe, A. L. (1997). Measures of mental models: A synthesis of evaluative data. *Training Research Journal*, 3, 185-207.
- 22) Cooke, N. J., Salas, E., Cannon-Bowers, J. A., & Stout, R. (2000). Measuring team knowledge. *Human Factors*, 42, 151-173.
- 23) Cooke, N. J., Kiekel, P. A., & Helm E. (2001). Measuring team knowledge during skill acquisition of a complex task. *International Journal of Cognitive Ergonomics: Special Section on Knowledge Acquisition*, 5, 297-315.
- 24) Cooke, N. J., Kiekel, P.A., Salas, E., Stout, R.J., Bowers, C., Cannon-Bowers, J. (2003). Measuring Team Knowledge: A Window to the Cognitive Underpinnings of Team Performance. *Group Dynamics: Theory, Research and Practice*, 7, 179-199.
- 25) Gorman, J.C., Cooke, N. J., & Winner, J.L. (2006). Measuring team situation awareness in decentralized command and control systems. *Ergonomics*, 49, 1312-1325.
- 26) Pedersen, H. K., & Cooke, N. J. (2006). From Battle Plans to Football Plays: Extending Military Team Cognition to Football. *International Journal of Sport and Exercise Psychology*, 4, 422-446.

Books and Book Chapters

- 27) Schvaneveldt, R.W., Cooke, N.M., Durso, F. T., Onorato, L. A., & Bailey, G. (1984). A taxonomy of human-computer interactions: Toward a modular user interface. In G. Salvendy (Ed.), *Human-Computer Interaction*. Amsterdam: Elsevier, 121-124.
- 28) Cooke, N.M. (1989). The elicitation of domain-related ideas: Stage one of the knowledge acquisition process. In C. Ellis (Ed.), *Expert Knowledge and Explanation*: England: Ellis Horwood Limited, 58-75.
- 29) Howell, W. C., & Cooke, N. J. (1989). Training the human information processor: A look at cognitive models. In I. L. Goldstein and Associates (Eds.), *Training and development in organizations* (pp. 121-182). New York: Jossey Bass.
- 30) Cooke, N. J. (1990). Using Pathfinder as a knowledge elicitation tool: Link interpretation. In R. Schvaneveldt (Ed.), *Pathfinder Associative Networks: Studies in Knowledge Organization*. Norwood, NJ: Ablex, 227-239.
- 31) Cooke, N. J. (1990). Empirically-defined semantic relatedness and category judgment time. In R. Schvaneveldt (Ed.), *Pathfinder Associative Networks: Studies in Knowledge Organization*. Norwood, NJ: Ablex, 101-110.
- 32) Cooke, N. J. (1992). Modeling human expertise in expert systems. In R. Hoffman (Ed.), *The Psychology of Expertise: Cognitive Research and Empirical AI*. New York: Springer-Verlag, 29-60.
- 33) Paap, K. R. & Cooke, N. J. (1997). Design of menus. In M. Helander, T. Landauer, & P. Prabhu (Eds.), *Handbook of Human-Computer Interaction*, pp. 533-572 Amsterdam: North-Holland.

- 34) Cooke, N. J. (1999). Knowledge elicitation. In F.T. Durso, (Ed.), *Handbook of Applied Cognition*, pp. 479-509. UK: Wiley.
- 35) Cooke, N. J. & Gillan, D. J. (1999). Representing user behavior in human-computer interaction. In A. Kent and J. G. Williams (Eds.), *Encyclopedia of Computer Science and Technology*, pp. 283-308. New York: Marcel Dekker, Inc. Also to be reprinted in the *Encyclopedia of Library and Information Science*.
- 36) Stout, R. J., Cooke, N. J., Salas, E. & Cannon-Bowers, J. A. (2000). Cognitive engineering in team performance measurement. In M. M. Beyerlein, D. A. Johnson, & S.T. Beyerlein (Eds.), *Advances in Interdisciplinary Studies of Work Teams*, 6, 27-53.
- 37) Gillan, D.J., and Cooke, N. J. (2001). Using Pathfinder networks to analyze procedural knowledge in interactions with advanced technology. In E. Salas, C. Bowers, N. Cooke, J. Driskell, & D. Stone (Eds.), *Advances in Human Performance and Cognitive Engineering Research*. Greenwich, CT: JAI Press Inc., Vol. 1.
- 38) Salas, E., Bowers, C. A., Cooke, N., Driskell, J. E., & Stone, D. (Eds.) (2001). *Advances in Human Performance and Cognitive Engineering Research*. Greenwich, CT: JAI Press Inc., Vol. 1.
- 39) Cooke, N. J., Stout, R.J., & Salas, E. (2001). A knowledge elicitation approach to the measurement of team situation awareness. In M. McNeese, M. Endsley, & E. Salas, (Eds.), *New Trends in Cooperative Activities: System Dynamics in Complex Settings*, pp. 114-139. Santa Monica, CA: Human Factors.
- 40) Kiekel, P. A., Cooke, N. J., Foltz, P. W., & Shope, S. M. (2001). Automating measurement of team cognition through analysis of communication data. In M. J. Smith, G. Salvendy, D. Harris, and R. J. Koubek (Eds.), *Usability Evaluation and Interface Design*, pp. 1382-1386, Mahwah, NJ: Lawrence Erlbaum Associates.
- 41) Cooke, N. J., Salas, E., Kiekel, P. A., & Bell, B. (2004). Advances in measuring team cognition. In E. Salas and S. M. Fiore (Eds.), *Team Cognition: Understanding the Factors that Drive Process and Performance*, pp. 83-106, Washington, DC: American Psychological Association.
- 42) Cooke, N. J., & Shope, S. M. (2004). Designing a synthetic task environment. In S. G. Schiflett, L. R. Elliott, E. Salas, & M. D. Coovert, *Scaled Worlds: Development, Validation, and Application*, pp. 263-278. Surrey, England: England: Ashgate.
- 43) Kiekel, P.A. & Cooke, N. J. (2004). Human factors aspects of team cognition. In R. W. Proctor and K. L. Vu (Eds.), *The Handbook of Human Factors in Web Design*, pp. 90-103, Mahwah, NJ: Lawrence Erlbaum Associates.
- 44) Cooke, N. J. (2005). Measuring Team Knowledge. *Handbook on Human Factors and Ergonomics Methods*, pp. 49-1-49-6. Boca Raton, FL: CLC Press, LLC.
- 45) Cooke, N. J., & Shope, S. M. (2005). Synthetic Task Environments for Teams: CERTT's UAV-STE *Handbook on Human Factors and Ergonomics Methods*, pp. 46-1-46-6. Boca Raton, FL: CLC Press, LLC.
- 46) Connor, O., Pedersen, H., Cooke, N. J., & Pringle, H. (2006). CERH Human Factors of UAVs: 2004 and 2005 Workshop Overviews" In N. J. Cooke, H. Pringle, H. Pedersen, & O. Connor, (Eds.) *Human Factors of Remotely Piloted Vehicles*. Volume in *Advances in Human Performance and Cognitive Engineering Research Series*, pp. 3-20, Elsevier.
- 47) Cooke, N. J., & Gorman, J. C. (2006). Assessment of team cognition. In P. Karwowski (Ed.), *2nd EDITION- International Encyclopedia of Ergonomics and Human Factors*, pp. 270-275. UK: Taylor & Francis Ltd.
- 48) Cooke, N. J., Pedersen, H. K., Gorman, J. C., & Connor, O. (2006). Acquiring Team-Level Command and Control Skill for UAV Operation. In N. J. Cooke, H. Pringle, H. Pedersen, & O. Connor, (Eds.) *Human Factors of Remotely Piloted Vehicles*. Volume in *Advances in Human Performance and Cognitive Engineering Research Series*, pp. 287-300, Elsevier.
- 49) Cooke, N. J., Pringle, H., Pedersen, H., & Connor, O. (2006). Preface: Why Human Factors of "Unmanned Systems?" In N. J. Cooke, H. Pringle, H. Pedersen, & O. Connor, (Eds.) *Human Factors of Remotely Piloted Vehicles*. Volume in *Advances in Human Performance and Cognitive Engineering Research Series*, p. xvii-, Elsevier.
- 50) Cooke, N. J., Pringle, H., Pedersen, H., & Connor, O. (Eds.) (2006). *Human Factors of Remotely Piloted Vehicles*. Volume in *Advances in Human Performance and Cognitive Engineering Research Series*, Elsevier.
- 51) DeJooode, J. A., Cooke, N. J., Shope, S. M., & Pedersen, H. (2006). Guiding the Design of a Deployable UAV Operations Cell" In N. J. Cooke, H. Pringle, H. Pedersen, & O. Connor,

- (Eds.) *Human Factors of Remotely Piloted Vehicles*. Volume in *Advances in Human Performance and Cognitive Engineering Research Series*, pp. 313-330, Elsevier.
- 52) Pedersen, H., Cooke, N. J., Pringle, H., & Connor, O. (2006). UAV Human Factors: Operator Perspectives” In N. J. Cooke, H. Pringle, H. Pedersen, & O. Connor, (Eds.) *Human Factors of Remotely Piloted Vehicles*. Volume in *Advances in Human Performance and Cognitive Engineering Research Series*, pp. 21-36, Elsevier.
- 53) Cooke, N. J., Gorman, J. C., & Winner, J. L. (2007). Team cognition. In F. Durso, R. Nickerson, S. Dumais, S. Lewandowsky, and T. Perfect, *Handbook of Applied Cognition, 2nd Edition*, pp. 239-268, Wiley.
- 54) Cooke, N. J. & Pedersen, H. K. (in press). Human Factors of Unmanned Aerial Vehicles. To appear in Wise, J. A., Hopkin, V. D., & Garland, D. J. (Eds.). *Handbook of Aviation Human Factors* (2nd Ed.). Hillsdale, NJ: Erlbaum.
- 55) Cooke, N. J., Gorman, J. C., & Rowe, L. J. (in press). An Ecological Perspective on Team Cognition. E. Salas, J. Goodwin, & C. S. Burke (Eds.), *Team Effectiveness in Complex Organizations: Cross-disciplinary Perspectives and Approaches*, SIOP Frontiers Series, Erlbaum.
- 56) Cooke, N. J., Gorman, J., Pedersen, H., & Bell, B. (in press). Distributed Mission Environments: Effects of Geographic Dispersion on Team Cognition and Performance. S. Fiore and E. Salas (Eds.), *Toward a science of distributed learning and training*. Washington, DC: American Psychological Association.
- 57) Cooke, N. J. & Durso, F. T. (in press). *Stories of Modern Technology Failures and Cognitive Engineering Successes*, Taylor and Francis.
- 58) Cooke, N. J. & Fiore, S. (in press). Cognitively-Based Principles for the Design and Delivery of Training, S. W. J. Kozlowski & E. Salas (Eds.), *Learning, Training, and Development in Organizations*. SIOP Frontiers Series, Erlbaum.

Proceeding Papers

- 59) Cooke, N. J. (1988). A methodology for capturing the elusive mental model. *Proceedings of USICON '88*, 167-176.
- 60) Jones, S. F., & Cooke, N. J. (1990). The effects of training on statistical reasoning. *Proceedings of the Human Factors Society 34th Annual Meeting*, 1362-66.
- 61) Rowe, A. L., Cooke, N. J., Neville, K. J., Schacherer, C. W. (1992). Mental models of metal models: A comparison of mental model measurement techniques. *Proceedings of the Human Factors Society 36th Annual Meeting*, 1195-1199.
- 62) Rowe, A. L., & Cooke, N. J. (1993). An approach to identifying meaningful action patterns in student-tutor interactions. *Proceedings of the Human Factors and Ergonomics Society 37th Annual Meeting*, 1281 -1285.
- 63) Cooke, N. J., & Rowe, A. L. (1994). Evaluating mental model elicitation methods. *Proceedings of the Human Factors and Ergonomics Society 38th Annual Meeting*, 261-265.
- 64) Cooke, N. J., Stout, R., & Salas, E. (1997) Expanding the measurement of situation awareness through cognitive engineering methods, *Proceedings of the Human Factors and Ergonomics Society 41st Annual Meeting*, 215-219.
- 65) Gillan, D. J., & Cooke, N. J. (1998). Making usability data more usable. *Proceedings of the Human Factors and Ergonomics Society 42nd Annual Meeting*, 300-304.
- 66) Cooke, N. J., Stout, R., Rivera, K., & Salas, E. (1998). Exploring measures of team knowledge. *Proceedings of the Human Factors and Ergonomics Society 42nd Annual Meeting*, 215-219.
- 67) Cooke, N. J., Rivera, K., Shope, S.M., & Caukwell, S. (1999). A synthetic task environment for team cognition research. *Proceedings of the Human Factors and Ergonomics Society 43rd Annual Meeting*, 303-307.
- 68) Cooke, N. J., Cannon-Bowers, J. A., Kiekel, P. A., Rivera, K., Stout, R., and Salas, E. (2000). Improving team's interpositional knowledge through cross training. *Proceedings of the Human Factors and Ergonomics Society 44th Annual Meeting*.
- 69) Cooke, N. J., Shope, S.M., & Rivera, K. (2000). Control of an uninhabited air vehicle: A synthetic task environment for teams. *Proceedings of the Human Factors and Ergonomics Society 44th Annual Meeting*, 389.
- 70) Cooke, N. J., Kiekel, P. A., & Helm E. (2001). Comparing and validating measures of team knowledge. *Proceedings of the Human Factors and Ergonomics Society 45th Annual Meeting*.

- 71) Hitt, J. M II, Endsley, M. R., & Cooke, N. J. (2001). A Taxonomy for CEDM. *COTG Digest*, 3, 1-3).
- 72) Cooke, N. J., & Shope, S. M. (2002). The CERTT-UAV Task: A Synthetic Task Environment to Facilitate Team Research. *Proceedings of the Advanced Simulation Technologies Conference: Military, Government, and Aerospace Simulation Symposium*, pp. 25-30. San Diego, CA: The Society for Modeling and Simulation International.
- 73) Cooke, N. J., Kiekel, P. A., Bell, B., & Salas, E. (2002). Addressing limitations of the measurement of team cognition. *Proceedings of the Human Factors and Ergonomics Society 46th Annual Meeting*, 403-407.
- 74) Cooke, N. J. Team communication analysis: Exploiting the wealth. (2002) *Proceedings of the Human Factors and Ergonomics Society 46th Annual Meeting*, 289.
- 75) Kiekel, P. A., Cooke, N.J., Foltz, P.W., Gorman, J. C., & Martin, M.J. (2002). Some promising results of communication-based automatic measures of team cognition. *Proceedings of the Human Factors and Ergonomics Society 46th Annual Meeting*, 298-302.
- 76) Cooke, N. J. & Shope, S. M. (2002). Behind the scenes. *UAV Magazine*, 7, 6-8.
- 77) Bell, B. G., & Cooke, N. J. (2003). Cognitive ability correlates of performance on a team task. *Proceedings of the Human Factors and Ergonomics Society 47th Annual Meeting*, 1087-1091.
- 78) Cooke, N. J. (2003) Knowledge modeling and design for the aging. Panel presentation on Applying Modeling to Design for Older Populations. *Proceedings of the Human Factors and Ergonomics Society 47th Annual Meeting*, 227-231.
- 79) DeJoode, J., Cooke, N. J., & Shope, S.M. (2003). Naturalistic observations of an airport mass casualty exercise. *Proceedings of the Human Factors and Ergonomics Society 47th Annual Meeting*, 663-667.
- 80) Gorman, J.C., Foltz, P.W., Kiekel, P.A., Martin, M. J., & Cooke, N. J. (2003). Evaluation of latent-semantic analysis-based measures of team communications. *Proceedings of the Human Factors and Ergonomics Society 47th Annual Meeting*, 424-428.
- 81) Connor, O., Cooke, N.J., Weinger, M. B., & Slagle, J. (2004). Using psychological scaling techniques to assess clinical expertise in anesthesiology. *Proceedings of the Human Factors and Ergonomics Society 48th Annual Meeting*.
- 82) Gorman, J. C., Cooke, N. J., & Kiekel, P. A. (2004). Dynamical perspectives on team cognition. *Proceedings of the Human Factors and Ergonomics Society 48th Annual Meeting*.
- 83) Kiekel, P.A., Gorman, J. C., & Cooke, N. J. (2004). Measuring speech flow of co-located and distributed command and control teams during a communication channel glitch. *Proceedings of the Human Factors and Ergonomics Society 48th Annual Meeting*.
- 84) Shope, S. M., DeJoode, J. A., Cooke, N. J., & Pedersen, H. (2004). Using Pathfinder to generate communication networks in a cognitive task analysis. *Proceedings of the Human Factors and Ergonomics Society 48th Annual Meeting*.
- 85) Gorman, J. C., Cooke, N. J., Pedersen, H. K., Connor, O.O., & DeJoode, J. A. (2005). Coordinated awareness of situation by teams (CAST): Measuring team situation awareness of a communication glitch. *Proceedings of the Human Factors and Ergonomics Society 49th Annual Meeting*, Orlando, FL, 274-277.
- 86) Gluck, K. A., Ball, J. T., Gunzelmann, G., Krusmark, M.A., Lyon, D. R., & Cooke, N. J. (2006). A Prospective Look at Synthetic Teammate for UAV Applications. Invited talk for AIAA "Infotech@Aerospace" conference on Cognitive Modeling.
- 87) Gorman, J. C., Cooke, N. J., Pedersen, H. K., Winner, J. L., Andrews, D., Amazeen, P. G. (2006). Changes in Team Composition After a break: Building adaptive command-and-control teams. *Proceedings of the Human Factors and Ergonomics Society 49th Annual Meeting*, San Francisco, CA.
- 88) Cooke, N. J. (2006). Human Factors of Remotely Operated Vehicles. *Proceedings of the Human Factors and Ergonomics Society 49th Annual Meeting*, San Francisco, CA.

Technical Reports

- 89) Schvaneveldt, R.W., Anderson, M., Breen, T.J., Cooke, N.M., Goldsmith, T.E., Durso, F.T., DeMaio, J.C., & Tucker, R.G. (1983). *Conceptual Structures in Fighter Pilots*. AFHRL-TP-83-2, Flying Training Division, Air Force Human Resources Laboratory.

- 90) Schvaneveldt, R.W., Durso, F.T., Goldsmith, T.E., Breen, T.J., Cooke, N.M., Tucker, R.G., & DeMaio, J.C. (1984). *Cognitive Organization as a Function of Flying Experience*. AFHRL-TP-83-64, Flying Training Division, Air Force Human Resources Laboratory.
- 91) Schvaneveldt, R.W., McDonald, J., & Cooke, N.M. (1985). Towards a Modular User Interface. *Memorandum in Computer and Cognitive Science, MCCS-85-10*, Computing Research Laboratory, New Mexico State University.
- 92) Cooke, N.M., Durso, F.T., & Schvaneveldt, R.W. (1985). Measures of Memory Organization and Recall. *Memorandum in Computer and Cognitive Science, MCCS-85-11*, Computing Research Laboratory, New Mexico State University.
- 93) Cooke, N.M. (1985). Modeling Human Expertise in Expert Systems. *Memorandum in Computer and Cognitive Science, MCCS-85-12*, Computing Research Laboratory, New Mexico State University.
- 94) Schvaneveldt, R.W., Durso, F.T., Goldsmith, T.E., Breen, T.J., Cooke, N.M., Tucker, R., & DeMaio, J. (1985). Measuring the Structure of Expertise. *Memorandum in Computer and Cognitive Science, MCCS-85-32*, Computing Research Laboratory, New Mexico State University.
- 95) Cooke, N. J., & Breedin, S. D. (1990). Implicit and Explicit Knowledge About Motion. NASA/JSC Technical Report, JSC-24521, Lyndon B. Johnson Space Center, Houston, TX.
- 96) Gillan, D. J., & Cooke, N.J. (1990). Cognitive Models. NASA/JSC Technical Report, JSC-24452, Lyndon B. Johnson Space Center, Houston, TX.
- 97) Cooke, N. J. (1992). The implications of cognitive task analyses for the revision of the Dictionary of Occupational Titles. Report for APA-sponsored symposium for the Department of Labor.
- 98) Cooke, N. J. & Rowe, A. L. (1993). An Approach to On-line Assessment and Diagnosis of Student Troubleshooting Knowledge. Air Force Technical Report, AL-TP-1993-0004, Armstrong Lab, Brooks AFB, TX.
- 99) Brisaboa, N. R., Cooke, N., & Blanco-Ferro, A. (1994). Enhancing the Repertory Grid Technique using Multidimensional Scaling. *Memorandum in Computer and Cognitive Science, MCCS-94-274*, Computing Research Laboratory, New Mexico State University.
- 100) Cooke, N. J., Rowe, A. L., Halgren, T.L., & Bauhs, J. A. (1995). Evaluative Comparison of Techniques for Measuring Student System Knowledge of Avionics Troubleshooting. Air Force Technical Report, AL/HR-TP-1995-0016, Armstrong Lab, Brooks AFB, TX.
- 101) Cooke, N. J. (1998). Measures of Team Knowledge. Report for Purchase Order No. N61339-97-M-0507, submitted to Naval Air Warfare Center Training Systems Division, Orlando, FL.
- 102) Cooke, N. J. & Shope, S. M. (1998). Facility for Cognitive Engineering Research on Team Tasks. Report for Grant No. F49620-97-1-0149, submitted to AFOSR, Bolling AFB, Washington, DC.
- 103) Cooke, N. J., Kiekel, P. A., & Rivera, K. (2000). Conceptual Cross Training for Teams: Improving Interpositional Knowledge. Technical Report submitted to U.S. Army Research Office, TCN 98020, Contract DAAH04-96-C-0086.
- 104) Cooke, N. J., Shope, S. M., & Kiekel, P.A. (2001). Shared-Knowledge and Team Performance: A Cognitive Engineering Approach to Measurement. Technical Report for AFOSR Grant No. F49620-98-1-0287.
- 105) Cooke, N. J., Gorman, J., & Pedersen, H. (2002). Toward a Model of Organizational Risk: Critical Factors at the Team Level. Technical Report on NASA Award No. NAG2-1562.
- 106) Kiekel, P. A., Cooke, N. J., Foltz, P. W., Gorman, J., & Martin, M. (2003). Methods for the Analysis of Team Communication. Technical Report for ONR Grant No. N00014-00-1-0818.
- 107) Cooke, N. J., DeJoode, J. A., Pedersen, H. K., Gorman, J. C., Connor, O. O., & Kiekel, P. A. (2004). The Role of Individual and Team Cognition in Uninhabited Air Vehicle Command-and-Control. Technical Report for AFOSR Grant Nos. F49620-01-1-0261 and F49620-03-1-0024.
- 108) Cooke, N.J., Gorman, J. C., Kiekel, P. A., Foltz, P., & Martin, M. (2005). Using Team Communication to Understand Team Cognition in Distributed vs. Co-Located Mission Environments. Technical Report for ONR Grant no. N00014-03-1-0580

Other Media

Cooke, N. J., & Shope, S. M. (1999). *CERTT Lab Video*. Produced by NMSU's Instructional Video Services. Funded by NMSU Department of Psychology, NMSU College of Arts and Sciences Research Center, and Sandia Research Corporation.

Cooke, N. J., & Rivera, K. (1999). *CERTT Lab Brochure*. Funded by NMSU Department of Psychology, NMSU College of Arts and Sciences Research Center, and Sandia Research Corporation.

MANUSCRIPTS IN PROGRESS

Cooke, N. J., Gorman, J. C., & Kiekel, P. A. (under review). Communication as Team-level Cognitive Processing. In M. Letsky, N. Warner, S. Fiore & CAP Smith, *Macro cognition in Teams*. Elsevier.

Cooke, N. J. & Winner, J. L. (under revision). Human Factors of Homeland Security. *Reviews of Human Factors and Ergonomics: Volume 3*. Santa Monica, CA: Human Factors and Ergonomics Society.

Cooke, N. J., Gorman, J. C., Duran, J. L., and Taylor, A. R. (under REVISION). Expert Team Performance in Command-and-Control: The Importance of How You Play the Game. Submitted to the Special Issue of *Journal of Experimental Psychology: Applied* on Capturing Expertise across Domains

THESES SUPERVISED

- 1) Berger, B. (1989). Cognitive organization in chess: Beyond chunking. Master's thesis, Rice University.
- 2) Jones, S. J. (1990). Teaching reasoning. Master's Thesis, Rice University.
- 3) Halgren, S. L. (1991). Information displays: The effect of organization and category distinctiveness on user performance. Master's Thesis, Rice University.
- 4) Atlas, R. S. (1992). Computer knowledge representation of users of command language-based interfaces and graphical user interfaces. Master's Thesis, Rice University.
- 5) Neville, K. J. (1993). The measurement of complex knowledge development. Master's Thesis, Rice University.
- 6) Halgren, S. L. (1993). In search of optimal human-expert system explanations: Empirical studies of human-human and human-expert system interactions. Ph.D. Thesis, Rice University.
- 7) Bauhs, J. A. (1994). The role of system information in the calibration of users' trust in expert systems. Master's Thesis, New Mexico State University.
- 8) Rowe, A. L. (1994). Mental models of physical systems: Examining the relationship between knowing and doing. Ph.D. Thesis, Rice University. *Winner of the 1994 Bullock Dissertation Award in Human Resource Development*.
- 9) Flowers, K. A. (1995). On-line Catalog Interfaces: Knowledge Structure and Subject Access. Master's Thesis, Rice University.
- 10) Kozak, K. A. (1994). Effects of implicit instruction on complex system performance. Master's Thesis, New Mexico State University.
- 11) Melton, J. S., (1995). Empirically-derived associative networks and subclinical depression: Implications for theory, research, and assessment. Master's Thesis, New Mexico State University.
- 12) Halgren, T. L. (1996). Travel through hyperspace or the failure to boldly go where no one has gone before. Master's Thesis, New Mexico State University.
- 13) La Salle, S. M. (1999). The effects of expanded realism of interface metaphor on performance and understanding of the system. Master's Thesis, New Mexico State University.
- 14) Kiekel, P.A. (2000). Communication of emotion in remote collaborative writing with rich versus lean groupware environments. Master's Thesis, New Mexico State University.
- 15) Lassiter, Honore' (2002). Interpersonal trust in small work groups. Master's Thesis, New Mexico State University
- 16) Gorman, Jamie C. (2003). A Latent Semantic Analysis-based metric of team communications efficiency. Master's Thesis, New Mexico State University.
- 17) Rivera, K. (2003). Effects of computer-mediated communication on shared knowledge of team members. Master's Thesis, New Mexico State University.
- 18) Kiekel, P.A. (2004). Developing automatic measures of team cognition using communication data. Ph.D. Thesis, New Mexico State University.
- 19) DeJoode, J. A. (2004). Understanding failure to attach. M.A. Thesis, New Mexico State University.
- 20) Connor, O. O. (2005). Assessing clinical expertise in anesthesiology. M.A. Thesis, New Mexico State University.
- 21) Gorman, J. C. (2006). Team coordination dynamics in cognitively demanding environments. Ph.D. Thesis, New Mexico State University.

- 22) Rowe, L. (2007). Effects of Distributed Mission Operations (DMO) on Knowledge Acquisition of Fighter Pilots Utilizing the Air Superiority Knowledge Assessment System , M.S. Thesis, Arizona State University.

PAPERS PRESENTED

- 1) Cooke, N.M., & Smith, R. (1984). Evidence for networks from recall. In K. Paap (chair), Link-weighted Networks. Paper presented at the meetings of the Rocky Mountain Psychological Association, Las Vegas, NV.
- 2) Schvaneveldt, R. W., Cooke, N.M., Durso, F. T., Onorato, L., & Bailey, G. (1984). A Taxonomy of Human-Computer Interactions: Toward a Modular User Interface. Paper presented at the First USA-Japan Conference on Human-Computer Interaction, Honolulu, HI.
- 3) Cooke, N.M. (1985). Computer programming expertise: Variations in cognitive structures. In F. Durso (chair), *Human Expertise: Papers in Honor of William Chase*. Paper presented at the meetings of the Southwestern Psychological Association, Austin, TX.
- 4) Durso, F.T., Cooke, N.M., Breen, T.B., & Schvaneveldt, R.W. (1985). Practice Effects Without Consistent Mapping. Paper presented at the meetings of the Southwestern Psychological Association, Austin, TX.
- 5) Cooke, N.M. & Schvaneveldt, R.W. (1986). The Evolution of Cognitive Networks with Computer Programming Experience. Paper presented at the workshop on Empirical Studies of Programmers, June 5-6, 1986, Washington, D.C.
- 6) Cooke, N.M. & McDonald, J. E. (1986). The Application of Psychological Scaling Techniques to Knowledge Elicitation for Knowledge-based Systems. Paper presented at the Knowledge Acquisition for Knowledge-based Systems workshop, November 2-7, 1986, Banff, Alberta, Canada.
- 7) Cooke, N.M., & Schvaneveldt, R.W. (1987). The application of empirically derived semantic networks to knowledge engineering. In F. Durso (chair), Knowledge structures: What are they good for? Paper presented at the meetings of the Southwestern Psychological Association, April 16-18, New Orleans, LA.
- 8) Cooke, N. J. (1988). A methodology for capturing the elusive mental model. Paper presented at User System Interface Conference, February 1988, Austin, TX
- 9) Cooke, N. J. (1988). Spatial vs. network scaling and category judgment time. Paper presented at Southwestern Psychological Association, April 13, 1988, Houston, TX.
- 10) Gillan, D. & Cooke, N. J. (1989). Cognitive modeling in human-computer interaction. Paper presented at Human Factors Symposium, NASA/JSC, September 19, 1989.
- 11) Halgren, S.L. & Cooke, N. J. (1990). Information displays: The effect of organization and category distinctiveness on user performance. Poster presented at the CHI' 90 - Human factors in computing systems conference, April 1-5, 1990, Seattle, WA.
- 12) Breedin, S. D., Cooke, N. J., Rudisill, M., & Gillan, D. (1990) Effects of knowledge elicitation techniques on naive models of physics. Paper presented Southwestern Psychological Association, April 12-14, 1990, Dallas, TX.
- 13) Cooke, N. J., Berger, R. C., & Lane, D. L. (1990). Conceptual chunking in chess: Beyond perception. Paper presented Southwestern Psychological Association, April 12-14, 1990, Dallas, TX.
- 14) Cooke, N. J., & Breedin, S. D. (1990). Implicit knowledge about object motion. Paper presented at the Texas Cognition Conference, May 25-26, San Antonio, TX.
- 15) Jones, S. F., & Cooke, N. J. (1990). The effects of training on statistical reasoning. Paper presented at the 34th annual meeting of the Human Factors Society, October 8-12, Orlando, FL.
- 16) Cooke, N. J., & Breedin, S. D. Implicit knowledge about motion. Poster presented at the 31st annual meeting of the Psychonomic Society, November 16-18, New Orleans, LA.
- 17) Atlas, R. S., & Cooke, N. J. (1991). Chess expertise and capacity for immediate recall of visually presented positions. Paper presented Southwestern Psychological Association, April 11-13, 1991, New Orleans, LA.
- 18) Halgren, S. L. & Cooke, N. J. (1991). Toward ecological validity in menu research. Poster presented at the CHI' 91 - Human factors in computing systems conference, April 29-May 2, 1991, New Orleans, LA.

- 19) Halgren, S. L., Flowers, K. A., & Cooke, N. J. (1991). The effect of explanation type on human-expert system interactions. Poster presented at the 35th annual meeting of the Human Factors Society, September 2-6, San Francisco, CA.
- 20) Neville, K. J., & Cooke, N. J. (1991). A longitudinal study of declarative and procedural knowledge development during skill acquisition. Paper presented at the South Texas Symposium on Human Factors and Ergonomics, November 15, San Antonio, TX.
- 21) Rowe-Hallbert, A. L., Neville, K. J., & Cooke, N. J. (1991). Measuring the elusive mental model. Paper presented at the South Texas Symposium on Human Factors and Ergonomics, November 15, San Antonio, TX.
- 22) Cooke, N. J. (1992). Mental models of metal models. Paper presented at the Southwestern Psychological Association Meeting: Symposium on Empirical Epistemology (F. T. Durso chair), April 16-18, 1992.
- 23) Neville, K. J., & Cooke, N. J. (1992). A methodology for assessing procedural knowledge. Paper presented at the Southwestern Psychological Association Meeting, April 16-18, 1992.
- 24) Cooke, N. J. (1992). Structural modeling techniques and sequential analysis. Paper presented at CHI '92 - Human factors in computing systems conference, Workshop on Exploratory Sequential Data Analysis, May 3 -May 7, 1992, Monterey, CA.
- 25) Flowers, K. A., & Cooke, N. J. (1992). Knowledge structures and subject access. Poster presented at CHI '92 - Human factors in computing systems conference, May 3-May 7, 1992, Monterey, CA.
- 26) Rowe, A. L., Cooke, N. J., Neville, K. J., Schacherer, C. W. (1992). Mental models of metal models: A comparison of mental model measurement techniques. Paper presented at the 36th annual meeting of the Human Factors Society, October 12-16, Atlanta, GA.
- 27) Rowe, A. L., & Cooke, N. J. (1993). An approach to identifying meaningful action patterns in student-tutor interactions. Paper presented at the 37th annual meeting of the Human Factors and Ergonomics Society, October 11-15, Seattle, WA.
- 28) Cooke, N. J., Durso, F. T., & Schvaneveldt, R. W. (1993). Retention of skilled search after nearly a decade. Paper presented at the 34th annual meeting of the Psychonomic Society, November 5-7, Washington, D.C.
- 29) Bauhs, J. A., & Cooke, N. J. (1994). Is knowing more really better? Effects of system development information in human-expert system interactions. Poster presented at CHI '94 - Human factors in computing systems conference, April 24-April 28, 1994, Boston, MA.
- 30) Rivera, K., Cooke, N. J., Rowe, A. L., & Bauhs, J. A. (1994). Conveying emotion in remote computer-mediated communication. Poster presented at CHI '94 - Human factors in computing systems conference, April 24-April 28, 1994, Boston, MA.
- 31) Rowe, A. L., Lowry, T., Halgren, S. L., & Cooke, N. J. (1994). A comparison of usability evaluations conducted by different teams. Poster presented at CHI '94 - Human factors in computing systems conference, April 24-April 28, 1994, Boston, MA.
- 32) Cooke, N. J., & Rowe, A. L. (1994). Mapping avionics troubleshooting actions onto mental models. Paper presented at the Practical Aspects of Memory Conference, July 31-August 5, College Park, MD.
- 33) Cooke, N. J., & Rowe, A. L. (1994). Evaluating mental model elicitation methods. Paper presented at the 38th annual meeting of the Human Factors and Ergonomics Society, October 24-28, Nashville, TN.
- 34) Cooke, N. J. (1995). Pathfinder network scaling: Potential Applications for modeling instructional developers. Evaluating mental model elicitation methods. Paper presented at 39th annual meeting of the Human Factors and Ergonomics Society, October 9-13, San Diego, CA.
- 35) Rivera, K., Cooke, N. J., & Bauhs, J. A. (1996). Effects of emotional icons on remote communication. Poster presented at CHI '96 - Human factors in computing systems conference, April 13-April 18, Vancouver, British Columbia, Canada.
- 36) Cooke, N. J., & Rowe, A. L. (1996). Evaluating measures of mental models. Paper presented the 104th Convention of the American Psychological Association, August 9-13, Toronto, Canada.
- 37) Cooke, N. J., Stout, R. J., & Salas, E. (1996). Methods for eliciting and assessing the shared cognitions underlying team situation awareness. Paper presented in the Colloquium on Multi-Operator Performance in Complex Military Systems, Human Factors and Ergonomics Society Conference, September 2-6, Philadelphia, PA.

- 38) Cooke, N. J., Stout, R., & Salas, E. (1997) Expanding the measurement of situation awareness through cognitive engineering methods. Paper presented at the 41st annual meeting of the Human Factors and Ergonomics Society, September 22-26, Albuquerque, NM.
- 39) Cooke, N.J., Rivera, K., LaSalle, M., Rice, S., & Schmidt, B. (1997). The role of cognitive engineering in the design of advanced technology. Poster presented at the 41st annual meeting of the Human Factors and Ergonomics Society, September 22-26, Albuquerque, NM.
- 40) Cooke, N. J., Stout, R., & Salas, E. (1997). Cognitive task analysis for team tasks. Paper presented at the ONR/NATO Workshop on Cognitive Task Analysis, October 30-November 1, 1997, Washington, D. C.
- 41) Cooke, N. J., Stout, R., Rivera, K., & Salas, E. (1998). Exploring measures of team knowledge. Paper presented at the 42nd annual meeting of the Human Factors and Ergonomics Society, October 5-9, Chicago, IL.
- 42) Rowe, A. L., Cooke, N. J., & Rivera, K. (1998). Assessing knowledge structures: An analysis of knowledge standards. Poster presented at the 42nd annual meeting of the Human Factors and Ergonomics Society, October 5-9, Chicago, IL.
- 43) Cooke, N. J. (1999). Knowledge metrics for teams. Paper presented at Meeting of the Southwestern Psychological Association, April 1-3, Albuquerque, NM.
- 44) Cooke, N. J., Rivera, K., Shope, S.M., & Caukwell, S. (1999). A synthetic task environment for team cognition research. Paper presented at the 43rd annual meeting of the Human Factors and Ergonomics Society, September 27-October 1, Houston, TX.
- 45) Cooke, N. J. (1999). CERTT Lab. Poster presented at the technical group meeting of the Cognitive Engineering and Decision Making technical group at the 43rd annual meeting of the Human Factors and Ergonomics Society, September 27-October 1, Houston, TX.
- 46) Cooke, N. J., Cannon-Bowers, J. A., Kiekel, P. A., Rivera, K., Stout, R., and Salas, E. (2000). Improving team's interpositional knowledge through cross training. Paper presented at 44th annual meeting of the Human Factors and Ergonomics Society and International Ergonomics Association, July 30-August 4, San Diego, CA.
- 47) Cooke, N. J., Shope, S.M., & Rivera, K. (2000). Control of an uninhabited air vehicle: A synthetic task environment for teams. Demonstration presented at the 44th annual meeting of the Human Factors and Ergonomics Society and International Ergonomics Association, July 30-August 4, San Diego, CA.
- 48) Kiekel, P. A., & Cooke, N. J. (2001). A clustering approach to determining discrete pattern shifts in sequential data. Talk and abstract presented at the meeting of the Psychometric Society, June 25, King of Prussia, PA.
- 49) Foltz, P. W., Cooke, N. J., Kiekel, P. & Shope, S. M. (2001) Automating the measurement of team cognition through an analysis of team communication. Talk presented at the Society for Text and Discourse, July, Santa Barbara, CA.
- 50) Cooke, N. J., Kiekel, P. A., & Helm E. (2001). Comparing and validating measures of team knowledge. Paper presented at 45th annual meeting of the Human Factors and Ergonomics Society, October 8-12, Minneapolis, MN.
- 51) Hottman, S.B., Jackson, J., Sortland, K., Witt, G., and Cooke, N.J. (2001). UAVs and air traffic controllers: Interface considerations. Paper presented at the AUVERSI 2001 Annual Symposium of the Association for Unmanned Vehicle Systems International, July 31-August 2, Arlington, VA.
- 52) Kiekel, P. A., Cooke, N. J., Foltz, P. W., & Shope, S. M. (2001). Automating measurement of team cognition through analysis of communication data. Paper presented at Human Computer Interaction International, August 8, New Orleans, LA.
- 53) Cooke, N. J., & Bell, B. (2001) The CERTT Lab: Cognitive Engineering Research on Team Tasks. Poster presented at the first annual NMSU Research and Creative Activities Fair, September 27, Las Cruces, NM.
- 54) Cooke, N. J., & Shope, S. M. (2002). The CERTT-UAV Task: A Synthetic Task Environment to Facilitate Team Research. Paper presented at the Advanced Simulations Technologies Conference, April 14-18, San Diego, CA.
- 55) Cooke, N. J., Kiekel, P. A., & Bell, B., & Salas, E. (2002). Addressing limitations of the measurement of team cognition. Paper presented at 46th annual meeting of the Human Factors and Ergonomics Society, September 30-October 4, Baltimore, MD.
- 56) Cooke, N. J. (2002). Team communication analysis: Exploiting the wealth. Symposium overview presented at 46th annual meeting of the Human Factors and Ergonomics Society, September 30-October 4, Baltimore, MD.

- 57) Kiekel, P. A., Cooke, N.J., Foltz, P.W., Gorman, J. C., & Martin, M.J. (2002). Some promising results of communication-based automatic measures of team cognition. Paper presented at 46th annual meeting of the Human Factors and Ergonomics Society, September 30-October 4, Baltimore, MD.
- 58) Cooke, N. K., DeJoode, J. D., Gorman, J., Keith, Rebecca, Lee, S., & Pedersen, H. (2002). Team cognition and homeland defense. Poster presented at 46th annual meeting of the Human Factors and Ergonomics Society, Special poster session on Cognitive Engineering and Decision Making Applied to Homeland Defense, September 30-October 4, Baltimore, MD.
- 59) Foltz, P.W., Martin, M., Kiekel, P. A., Gorman, J., & Cooke, N.J. (2003). Automated Team communication analysis with latent semantic analysis. Paper presented at CTA Symposium, April 29-May 1, College Park, MD.
- 60) DeJoode, J., Cooke, N. J., & Shope, S.M. (2003). Naturalistic observations of an airport mass casualty exercise. Poster presented at 47th annual meeting of the Human Factors and Ergonomics Society, October 13-17, Denver, CO.
- 61) Bell, B. G., & Cooke, N. J. (2003). Cognitive ability correlates of performance on a team task. Poster presented at 47th annual meeting of the Human Factors and Ergonomics Society, October 13-17, Denver, CO.
- 62) Gorman, J.C., Foltz, P.W., Kiekel, P.A., Martin, M. J., & Cooke, N. J. (2003). Evaluation of Latent-Semantic Analysis-based measures of team communications. Paper presented at 47th annual meeting of the Human Factors and Ergonomics Society, October 13-17, Denver, CO.
- 63) Cooke, N. J. (2003) Knowledge modeling and design for the aging. Panel paper presented at 47th annual meeting of the Human Factors and Ergonomics Society, October 13-17, Denver, CO.
- 64) Connor, O., Cooke, N. J., Slagle, J., and Weinger, M. (2004). Pilot Study of the Measurement of Context-Dependent Concept Relatedness to Assess Anesthesiology Expertise. Paper presented at annual meeting of the Society for Technology in Anesthesia, January 15, Albuquerque, NM.
- 65) DeJoode, J. A., Cooke, N.J., & Shope, S. M. (2004). Naturalistic observation of airport incident command. Poster presented at Human Performance, Situation Awareness and Automation Technology Conference, March 22 – 25, Daytona Beach, FL.
- 66) Cooke, N. J. (2004). Team Cognition: Why, What, and How? Paper presented at the annual convention of the American Psychological Association, July 29, Honolulu, HI.
- 67) Cooke, N. J., Kiekel, P. A., & Gorman, J. C. (2005). Team Communication as a Team Cognition Barometer. Paper presented at the Society of Industrial Organizational Psychologists, April 16, Los Angeles, CA.
- 68) Pedersen, H. K., & Cooke, N. J. (2005). Team Coordination in UAV Operations. Paper presented at the International Symposium on Aviation Psychology, April 18-21, Oklahoma City, OK.
- 69) Cooke, N. J., Connor, Cooke, N. J. (2005). Augmented Team Cognition. Paper presented and session chaired at Augmented Cognition International, HCII, July 22-27, Las Vegas, NV
- 70) Gorman, J. C., Cooke, N. J., Pedersen, H. K., Connor, O.O., & DeJoode, J. A. (2005). Coordinated awareness of situation by teams (CAST): Measuring team situation awareness of a communication glitch. Paper presented at 49th annual meeting of the Human Factors and Ergonomics Society, September 26-30, Orlando, FL.
- 71) Gorman, J. C., Cooke, N. J., Pedersen, H. K., Winner, J. L., Andrews, D., Amazeen, P. G. (2006). Changes in Team Composition After a break: Building adaptive command-and-control teams. Paper presented at 50th annual meeting of the Human Factors and Ergonomics Society, October 16-20, San Francisco, CA.
- 72) Cooke, N. J. (2006). Human Factors of Remotely Operated Vehicles. Panel chaired at 50th annual meeting of the Human Factors and Ergonomics Society, October 16-20, San Francisco, CA.
- 73) Cooke, N. J. (2006). Cross Cultural Interactions: Methods and Motivations for Study. Panel position paper presented at 50th annual meeting of the Human Factors and Ergonomics Society, October 16-20, San Francisco, CA.

WORKSHOPS AND INVITED TALKS

- 1) Cooke, N. J. (1992). Do people know what they're doing? Investigating the relationship between knowledge and performance. Colloquium given as Henry Jones Invited Speaker, North Carolina State University, November, Raleigh, NC.

- 2) Cooke, N. J. (1994). Cognitive task analysis and its role in job analysis. Workshop given to the Peace Officer Standards and Training Commission, State of California, July 14 and 15, Sacramento, CA.
- 3) Gillan, D. J., & Cooke, N. J. (1994). Methods of perceptual and cognitive research applied to interface design and testing. Tutorial presented at CHI '94 - Human factors in computing systems conference, April 24-April 28, 1994, Boston, MA.
- 4) Cooke, N. J., & Gillan, D. J. (1994). Cognitive methods applied to human factors. Workshop presented at the 38th annual meeting of the Human Factors and Ergonomics Society, October 24-28, Nashville, TN.
- 5) Cooke, N. J., & Gillan, D. J. (1995). Psychological scaling methods. Workshop given to Microsoft's Usability Group, January 27, Redmond, WA.
- 6) Gillan, D. J., & Cooke, N. J. (1995). Methods of cognitive analysis for HCI. Tutorial presented at CHI '95 - Human Factors in Computing Systems Conference, May 7-11, 1995, Denver, CO.
- 7) Cooke, N. J. (1996). Knowledge elicitation and assessment methods. Workshop presented to Naval Air Warfare Center, Training Systems Division, March 6, Orlando, FL.
- 8) Cooke, N. J. (1998). KNOT: A tool for representing conceptual structure. Invited talk presented at Sun Break '98: Conference on Organizations, February 6-8, 1998, Department of Management, New Mexico State University, Las Cruces, NM.
- 9) Schoenfeld, V. S., Shapiro, R. G., Brown, M. L., Jahns, D. W., Andre, A. D., Lund, A. M., Eggemeier, F. T., & Cooke, N. J. (1998). To Ph.D. or not to Ph.D.? That is the question. Panel presentation at the 42nd annual meeting of the Human Factors and Ergonomics Society, October 5-9, Chicago, IL.
- 10) Cooke, N. J. & Shope, S. M. (1999). CERTT-UAV Task. Invited talk and demonstration presented at the Scaled Worlds Symposium, June 24-27, Athens, GA.
- 11) Cooke, N. J. (1999). Lessons learned from the trenches: A panel on the application of knowledge methods to training evaluation. Panel presentation with Sward, D., Foltz, P., Gillan, D., Goldsmith, T., & Schvaneveldt, R. at Schvanfest '99, Festschrift in Honor of Roger W. Schvaneveldt, September 10-12, Las Cruces, NM.
- 12) Cooke, N. J., & Shope, S. M. (2001). The CERTT-UAV Synthetic Task: Validity, Flexibility, Availability. Paper presented at the Air Force Office of Scientific Research Workshop on Team Performance, October 16-17, Fairfax, VA.
- 13) Cooke, N. J. Eliciting the Knowledge of Individuals and Teams. Invited talk San Diego Center for Patient Safety, Visiting Professor Series, December 12, 2001.
- 14) Cooke, N. J. (2001). Team Cognition: What Have We Learned? Paper presented at the Air Force Office of Scientific Research Workshop on Team Performance, October 16-17, Fairfax, VA.
- 15) Cooke, N. J., Gorman, J., & Pedersen, H. (2002). Toward a Model of Organizational Risk. Paper presented at NASA HORM Workshop, June 13-14, Moffett Field, CA.
- 16) Cooke, N. J. (2002). Cognitive Task Analysis for Teams. On-line CTA Resource Seminar sponsored by Aptima and Office of Naval Research, October 11, US Positioning, Las Cruces, NM.
- 17) Cooke, N. J. (2002). Diagnosing Team Performance Through Team Cognition, Paper presented at ONR-NMSU Workshop on New Directions in Cognitive Science, October 25-26, New Mexico State University, Las Cruces, NM.
- 18) Cooke, N. J., Gorman, J., & Pedersen, H. (2002). My Favorite Ways to Measure Team Stuff. Paper presented at NASA HORM Workshop, November 13-14, Moffett Field, CA.
- 19) Cooke, N.J. (2003). Measuring Collaborative Cognition. ONR Workshop on Collaborative Knowledge Management, January 14-16, College Park, MD.
- 20) Cooke, N.J. (2003). Assessing Team Cognition. Invited Talk, Los Alamos National Laboratory, June 2, Los Alamos.
- 21) Cooke, N.J., & Kiekel, P. A. (2003). Team Cognition. AFRL-Rome sponsored seminar on Cognitive Systems Engineering. August 5-7, Hamilton, NY.
- 22) Cooke, N.J. (2003). Assessing Team Cognition. Invited talk to the Air Force Research Lab. August 28, Mesa, AZ.
- 23) Cooke, N.J. (2003). Assessing Team Cognition. Invited talks to Arizona State University's Cognition and Behavior Seminar. September 22, 2003.

- 24) Cooke, N. J. (2003). Types of academic institutions and why you might want to work in one. Paper presented at the APA sponsored workshop on Entering the Academic Marketplace: Advice from Experts at 47th annual meeting of the Human Factors and Ergonomics Society, October 13, Denver, CO.
- 25) Cooke, N. J. (2003). Playing well with others: Emotional intelligence meets team performance. Paper presented at ETS Workshop: Emotional Intelligence: Knowns and Unknowns, November 15, Princeton, NJ.
- 26) Cooke, N.J. (2003). Command-and-Control Teams: The Outcome of Cognitive Engineering. Journeys of the Mind Series, November 18, Arizona State University East, Mesa, AZ.
- 27) Cooke, N.J., & Gorman, J. (2004). Team Communication and Cognition. Invited talk to ONR's Collaboration and Knowledge Management Workshop, January 13-15, San Diego, CA.
- 28) Cooke, N. J. (2004). Team cognition in distributed command-and-control. Paper presented at AFOSR Cognitive Decision Making Program Review Workshop, March 9-10, Chandler, AZ.
- 29) Cooke, N. J. (2004). Command-and-Control Coordination: Cognitive Processing at the Team Level. Paper presented at Human-Technology Integration Colloquium Series, Air Force Research Laboratory, Human Effectiveness Directorate, May 19, WPAFB, Ohio.
- 30) Cooke, N. J. (2004). Opening Session Overview. Human Factors of UAVs: Manning the Unmanned Workshop, May 24-25, Chandler, AZ.
- 31) Cooke, N. J. (2004). Team Coordination and UAV Operations. Human Factors of UAVs: Manning the Unmanned Workshop, May 24-25, Chandler, AZ.
- 32) Cooke, N. J. (2004). Team Cognition, Coordination, and Communication: Effects of Distributed Versus Co-located Environments. Invited Symposium. American Psychological Society 16th Annual Convention, May 28, Chicago, IL.
- 33) Cooke, N. J. (2004) Design for Coordination and Control. National Academies of Science workshop on Scalable Interfaces for Air and Ground Military Robots, November 11-12, Washington, DC.
- 34) Cooke, N. J. (2004). Where's the Sharing in Shared Mental Models? Invited talk presented at ARI/UCF team workshop, December 16, Orlando, FL.
- 35) Cooke, N.J. (2005). Communication in Team Cognition. Invited talk to ONR's Collaboration and Knowledge Management Workshop, January 13-15, San Diego, CA.
- 36) Cooke, N.J. (2005). Emergent Team Cognition or What Was Wrong With The US Olympic Basketball Team? Colloquium presented at Texas Tech University, February 7, Lubbock, TX.
- 37) Cooke, N.J. (2005). Emergent Team Cognition or What Was Wrong With The US Olympic Basketball Team? Colloquium presented at Georgia Tech University, March 30, Atlanta, GA.
- 38) Cooke, N. J. (2005). Acquisition and Retention of Team Coordination in Command-and-Control: Data, Metrics, and Models. Paper presented at AFOSR Cognitive Decision Making Program Review Workshop, April 18-19, St. Augustine, FL.
- 39) Cooke, N.J. (2005). Emergent Team Cognition or What Was Wrong With The US Olympic Basketball Team? Colloquium presented at North Dakota State University, April 22, Fargo, ND.
- 40) Cooke, N. J., Connor, O., & Pedersen, H. (2005). Acquisition and Retention of Team UAV Skills. Paper presented at the Second Annual Human Factors of UAVs Workshop, May 25-26, Mesa, AZ.
- 41) Cooke, N. J. (2005). Lessons Learned from My Career. Presented at Student Professional Development Day at the 49th annual meeting of the Human Factors and Ergonomics Society, September 26-30, Orlando, FL.
- 42) Cooke, N.J. (2005). Human Factors of Homeland Security. Overview talk given at the Homeland Security Science Forum sponsored by Human Factors and Ergonomics Society and the Federation of Behavioral, Psychological, and Cognitive Sciences. November 17, Washington, DC.
- 43) Cooke, N. J. (2006). Cognitive Engineering Research. Invited Talk to ASU Discovery Tours, January 18, 2006.
- 44) Cooke, N. J. (2006). Automatic Tagging of Macrocognitive Processes Through Communication Analysis. Invited talk to ONR's Collaboration and Knowledge Management Workshop, January 24-26, Cambridge, MA.
- 45) Cooke, N. J. (2006). Designing for Collaboration. Invited talk at MIT's Humans and Technology Symposium, January 27, Cambridge, MA.
- 46) Cooke, N. J. (2006). Designing for Collaboration. Invited talk at Ohio State University, Department of Industrial, Welding and Systems Engineering, June 6, Columbus, OH.
- 47) Cooke, N. J. (2006). Talk to Preparing Future Faculty group at Arizona State University at the Polytechnic Campus, October 7, Mesa, AZ.

- 48) Cooke, N. J. (2007). Panel Participant for Barbara Ainsworth's Physical Activity, Nutrition, and Wellness doctoral program seminar.

WORKSHOPS ORGANIZED

- Cooke, N. J. & Pringle, H. (2004). Human Factors of UAVs Workshop: Manning the Unmanned. CERI hosted workshop, sponsored by AFRL, AFOSR, NASA, and US Positioning, May 24-25, Chandler, AZ.
- Cooke, N. J. & Pringle, H. (2005). Second Annual Human Factors of UAVs Workshop: Manning the Unmanned. CERI hosted workshop, sponsored by AFRL, AFOSR, FAA, and Microanalysis and Design, May 25-26, Mesa, AZ.
- Chair of Team Cognition session for DARPA Augmented Cognition workshop, July, 2005, Las Vegas, NV.
- Cooke, N. J. & Andrews, D. (2006). Third Annual Human Factors of UAVs Workshop: Manning the Unmanned. CERI hosted workshop, sponsored by AFRL, AFOSR, & FAA, May 24-26, Mesa, AZ.

SCIENCE ADVOCACY

- APA Science Advocacy Training Workshop, Human Factors and Aviation Safety Research, July 18-19, 1999, Washington, D.C.
- APA Science Advocacy Training Workshop, Psychological Science and the Military, September 27-29, 2003, Washington, D.C.
- Homeland Security Science Forum sponsored by Human Factors and Ergonomics Society and the Federation of Behavioral, Psychological, and Cognitive Sciences. November 17, Washington, DC.
- White House Office of Science and Technology Policy Briefing on Human Factors of UAVs, April 6, 2006.