

# RONALD LAURIDS BORING, PHD

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## OBJECTIVE

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To obtain a research position that allows me to lead innovative projects in human factors and human reliability analysis

## SPECIALIZED SKILLS AND CREDENTIALS

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Human Factors: *Task analysis, GOMS modeling, user-needs assessment, heuristic evaluation, formative and summative usability testing, software prototyping, Pathfinder expertise modeling, protocol analysis, card sorting, online usability testing, ACT-R modeling, MIDAS modeling*

Human Reliability: *Seven years experience working with HRA methods such as THERP, SPAR-H, CREAM, and NARA; Development team for SPAR-H method, NRC simplified expert elicitation technique, NRC hybrid HRA approach, and NRC and NASA human reliability database tools; Use of cognitive modeling for HRA; Lead instructor for HRA courses for NRC*

Clearance: *Current US Department of Energy Top Secret ("Q") Clearance*

## EDUCATION

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PHD, COGNITIVE SCIENCE 1998 - 2004  
*Carleton University* *Ottawa, Ontario, Canada*

- emphasis on cognitive applications of human-computer interaction
- dissertation on new cognitive model of perceptual and subjective scaling

MA, EXPERIMENTAL PSYCHOLOGY 1995 - 1998  
*New Mexico State University* *Las Cruces, New Mexico*

- thesis on evaluation of human and computerized essay assessment methods

FULBRIGHT GRADUATE SCHOLAR, SOCIAL PSYCHOLOGY 1993 - 1994  
*Universität Heidelberg* *Heidelberg, Germany*

- research on cultural assimilation of eastern Germans following Reunification

BA (HONORS COLLEGE), EXPERIMENTAL PSYCHOLOGY & GERMA 1989 - 1993  
*University of Montana* *Missoula, Montana*

- recipient of President's Medal as valedictorian in Psychology and German
- baccalaureate thesis in Psychology on linguistic acculturation of Japanese students in USA
- baccalaureate thesis in German on historical context of Viennese architecture

## RESEARCH WORK EXPERIENCE

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SENIOR MEMBER OF TECHNICAL STAFF, RISK AND RELIABILITY ANALYSIS DEPARTMENT JULY 2008 - PRESENT  
*Sandia National Laboratories* *Albuquerque, New Mexico*

- supported projects for US Nuclear Regulatory Commission on benchmarking and improving human reliability analysis methods as well as applying them in novel domains such as spent-fuel processing
- led international project on human reliability analysis for system design in conjunction with Halden Reactor Project and Ringhals Nuclear Power Station

## RESEARCH WORK EXPERIENCE (CONTINUED)

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VISITING SCIENTIST, MAN-TECHNOLOGY ORGANISATION  
*Halden Reactor Project*

FEBRUARY 2007 – FEBRUARY 2008  
*Halden, Norway*

- developed analysis methods for control room simulator studies of nuclear power plants
- facilitated efforts to use control room simulator data for validation of human reliability analysis methods

PRINCIPAL SCIENTIST, HUMAN FACTORS GROUP  
*Idaho National Laboratory*

JUNE 2003 – JULY 2008  
*Idaho Falls, Idaho*

- served as Principal Investigator on US Nuclear Regulatory Commission, Department of Homeland Security, and NASA risk related projects using human reliability analysis methods
- designed human performance databases for use within the US Nuclear Regulatory Commission and NASA
- developed expert estimation technique for US Nuclear Regulatory Commission
- created hybrid approach to use human reliability analysis for software usability

USABILITY ENGINEERING INTERN, EXPEDIA USER EXPERIENCE GROUP  
*Expedia Corporation*

SUMMER 2001  
*Redmond, Washington*

- served as usability engineer for business related online travel features
- developed, tested, and documented new travel features
- designed Expedia's usability Web site

USABILITY ENGINEERING INTERN, CONSUMER USABILITY GROUP  
*Microsoft Corporation*

SUMMER 2000  
*Redmond, Washington*

- served as primary usability engineer for MSN Messenger Service
- led testing of software localization effort and international telephony features
- designed and conducted experiments on distraction and attention for Microsoft Research

GUEST RESEARCHER, INSTITUTE OF INFORMATION TECHNOLOGY  
*National Research Council of Canada*

SPRING 2000  
*Ottawa, Ontario, Canada*

- developed user-modeling architecture for intelligent software agents in e-commerce applications

RESEARCH ASSISTANT, QUALITY OF SERVICE PROJECT  
*CURE Lab, Carleton University*

1998 - 2000  
*Ottawa, Ontario, Canada*

- evaluated and maintained hardware and software in usability laboratory
- developed experimental testing procedures for streaming media research project
- programmed prototypes and conducted usability testing

USABILITY TESTER, INFOVIEW  
*Computing Research Laboratory, NMSU*

1997 - 1998  
*Las Cruces, New Mexico*

- conducted testing and designed improvements for US Department of Defense information retrieval system

INSTRUCTIONAL DESIGNER, STEP-UP GERMAN  
*ProOne Software*

1997 - 1998  
*Las Cruces, New Mexico*

- developed instructional content for commercial educational software package

RESEARCH ASSISTANT, OLEADA  
*Computing Research Laboratory, NMSU*

1995 - 1996  
*Las Cruces, New Mexico*

- performed user evaluation and developed design recommendations for voice interface for US Department of Defense document translation software

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## TEACHING EXPERIENCE

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### INVITED LECTURER

VARIOUS

- Society for Human Performance in Extreme Environments, October 2009
- Ringhals Nuclear Power Station, Human Reliability Analysis Short Course, April 2009
- US National Academy of Engineering, September 2008
- Danish Society of Engineers, Human Reliability Analysis Professional Course, November 2007
- Bechtel Bettis Laboratory, Human Reliability Analysis Short Course, November 2007
- Ringhals Nuclear Power Station, Human Reliability Analysis Short Course, October 2007
- Norwegian University of Science and Technology, Human Factors Short Course, October 2007
- Massachusetts Institute of Technology, Human Safety Symposium, December 2006

### LEAD INSTRUCTOR

2005 - PRESENT  
Washington, DC*US Nuclear Regulatory Commission*

- developed curriculum, course materials, and assessment materials, and taught week-long intensive professional development courses in human reliability analysis for reactor regulatory and materials and fuels branches

### ADJUNCT FACULTY MEMBER, PSYCHOLOGY DEPARTMENT

2005 - PRESENT  
Rexburg, Idaho*Brigham Young University-Idaho*

- developed curriculum, Web site, and assessment materials for fourth-year joint Computer Science and Psychology course on Human Factors and Ergonomics
- supervised thesis research for undergraduate Psychology students

### INSTRUCTOR, PSYCHOLOGY DEPARTMENT

2001  
Ottawa, Ontario, Canada*Carleton University*

- taught second-year undergraduate History of Psychology course
- developed curriculum, Web site, and assessment materials

### INSTRUCTOR, PSYCHOLOGY DEPARTMENT

1995 - 1998  
Las Cruces, New Mexico*New Mexico State University*

- taught research lab sections for Introductory Psychology and Introductory Experimental Methods courses

### ENGLISH INSTRUCTOR, CENTRAL LANGUAGE LABORATORY

1994 - 1995  
Heidelberg, Germany*Universität Heidelberg*

- designed curriculum and taught full-time university-level English-as-a-Foreign-Language courses

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## PROFESSIONAL ACTIVITIES

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Member, Conference Executive Planning Committee, *Human Factors and Ergonomics Society*, 2004 - present  
Vice Chairperson, *IFIP Working Group 13.5 on Human Error, Safety, and System Design*, 2005 - present  
Publication Chair and Editor, *IEEE 2007 Conference on Human Factors for Nuclear Power Plants*  
Journal Reviewer, *Reliability Engineering and System Safety* and *Safety Science*  
Demonstrations Chair and Organizer, *ACM CHI 2004 Conference*  
Student Posters Chair and Organizer, *ACM CHI 2002 Conference*  
Co-Editor, *ACM SIGCHI Bulletin*, 2000 - 2003  
Guest Editor, *ACM Crossroads Journal* Special Issue on Cognitive Science

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## PROFESSIONAL MEMBERSHIPS

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American Nuclear Society (ANS)  
Association for Psychological Science (APS)  
Human Factors and Ergonomics Society (HFES)  
International Federation of Information Processing (IFIP)  
Society for Human Performance in Extreme Environments (SHPEE)

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## ACADEMIC AWARDS & HONORS

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Carleton University Dissertation Grant  
Carleton University Graduate Fellowship  
Fulbright Commission Full Academic Scholarship  
University of Montana Presidential Medal as Valedictorian in Psychology and German  
University of Montana Presidential Full Scholarship  
Montana University System Scholarship

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## REFEREED PUBLICATIONS

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### 2009 (Includes Published or In Print Work)

Boring, R.L. (2009). Human reliability analysis in cognitive engineering. *Frontiers of Engineering: Reports on Leading-Edge Engineering from the 2008 Symposium* (pp. 103-110). Washington, DC: National Academy of Engineering.

Boring, R.L. (2009). Human factors data requirements for human reliability analysis: Preliminary thoughts. *Sixth American Nuclear Society International Topical Meeting on Nuclear Plant Instrumentation, Control, and Human-Machine Interface Technologies*, 1-8.

Boring, R.L. (2009). Using nuclear power plant training simulators for operator performance and human reliability research. *Sixth American Nuclear Society International Topical Meeting on Nuclear Plant Instrumentation, Control, and Human-Machine Interface Technologies*, 1-12.

Boring, R.L. (2009). Reconciling resilience with reliability: The complementary nature of resilience engineering and human reliability analysis. *Proceedings of the 53rd Annual Meeting of the Human Factors and Ergonomics Society*, 1589-1593.

Boring, R.L., Hendrickson, S.M.L., Forester, J.A., Tran, T.Q., & Lois, E. (In print). Issues in benchmarking human reliability methods: A literature review. *Reliability Engineering and System Safety*.

Boring, R.L., Oxstrand, J., & Hildebrandt, M. (2009). Human reliability analysis for control room upgrades. *Proceedings of the 53rd Annual Meeting of the Human Factors and Ergonomics Society*, 1584-1588.

Boring, R.L., Roth, E., Straeter, O., Laumann, K., Blackman, H.S., Oxstrand, J., & Persensky, J.J. (2009). Is human reliability relevant to human factors? *Proceedings of the 53rd Annual Meeting of the Human Factors and Ergonomics Society*, 610-614.

Hildebrandt, M., Oxstrand, J., & R.L. Boring. (2009). Living HRA: Building new communities of practice for proactive safety management. *Proceedings of the 53rd Annual Meeting of the Human Factors and Ergonomics Society*, 1579-1583.

Oxstrand, J., & Boring, R.L. (2009). Human reliability for design applications at a Swedish nuclear power plant: Preliminary findings and principles from a user-needs analysis. *Proceedings of the Second International Symposium on Resilient Control Systems*, 5-10.

Oxstrand, J., & Boring, R.L. (2009). *Human Reliability Guidance – How to Increase the Synergies between Human Reliability, Human Factors, and System Design and Engineering. Phase 1: The Nordic Point of View – A User Needs Analysis, NKS-R-2009\_77 Interim Report*. Roskilde, Denmark: Nordisk Kernesikkerhedsforskning.

## REFEREED PUBLICATIONS (CONTINUED)

## 2008

Blackman, H.S., Gertman, D.I., & Boring, R.L. (2008). Human error quantification using performance shaping factors in the SPAR-H method. *Proceedings of the 52nd Annual Meeting of the Human Factors and Ergonomics Society*, 1733-1737.

Boring, R.L., & Bye, A. (2008). Bridging human factors and human reliability analysis. *Proceedings of the 52nd Annual Meeting of the Human Factors and Ergonomics Society*, 733-737.

Boring, R.L., Gertman, D.I., Tran, T.Q., & Gore, B.F. (2008). Framework for the application of MIDAS for modeling control room crew performance at nuclear power plants. *Proceedings of the 52nd Annual Meeting of the Human Factors and Ergonomics Society*, 930-934.

Boring, R.L., O'Hara, J.M., Hugo, J., Jamieson, G.A., Oxstrand, J., Ma, R., & Hildebrandt, M. (2008). Human factors and the nuclear renaissance. *Proceedings of the 52nd Annual Meeting of the Human Factors and Ergonomics Society*, 763-767.

Boring, R.L., & West, R.L. (2008). Constrained scaling in psychometric magnitude mapping. *Proceedings of the 24th Annual Meeting of the International Society for Psychophysics*, 297-302.

Chang, Y.J., Boring, R., Whaley, A., & McCabe, P. (2008). Use of HERA to inform human reliability analysis. *American Nuclear Society Probabilistic Safety Analysis 2008 Topical Meeting*, 11 pages on CD-ROM.

## 2007

Boring, R.L. (2007). Third-generation human reliability analysis: Benefits and challenges of simulating human performance. *Proceedings of the 2007 Enlarged Halden Program Group Meeting, Volume 1, Paper C2.3* (pp. 1-7).

Boring, R.L. (2007). Dynamic human reliability analysis: Benefits and challenges of simulating human performance. In T. Aven & J.E. Vinnem (Eds.), *Risk, Reliability and Societal Safety, Volume 2: Thematic Topics. Proceedings of the European Safety and Reliability Conference (ESREL 2007)* (pp. 1043-1049). London: Taylor & Francis.

Boring, R.L. (2007). A review of expertise and judgment processes for risk estimation. In T. Aven & J.E. Vinnem (Eds.), *Risk, Reliability and Societal Safety, Volume 2: Thematic Topics. Proceedings of the European Safety and Reliability Conference (ESREL 2007)* (pp. 1901-1907). London: Taylor & Francis.

Boring, R.L. (2007). Meeting human reliability requirement through human factors design, testing, and modeling. In T. Aven & J.E. Vinnem (Eds.), *Risk, Reliability and Societal Safety, Volume 1: Specialisation Topics. Proceedings of the European Safety and Reliability Conference (ESREL 2007)* (pp. 3 - 8). London: Taylor & Francis.

Boring, R.L., & Blackman, H.S. (2007). The origins of the SPAR-H method's performance shaping factor multipliers. *Official Proceedings of the Joint 8th IEEE Conference on Human Factors and Power Plants and the 13th Annual Workshop on Human Performance/Root Cause/Trending/Operating Experience/Self Assessment*, 177-184.

Boring, R.L., Griffith, C.D., & Joe, J.C. (2007). The measure of human error: Direct and indirect performance shaping factors. *Official Proceedings of the Joint 8th IEEE Conference on Human Factors and Power Plants and the 13th Annual Workshop on Human Performance/Root Cause/Trending/Operating Experience/Self Assessment*, 170-176.

Boring, R., Whaley, A., Hallbert, B., Laumann, K., Braarud, P.Ø, Bye, Lois, E., Chang, Y.H.J. (2007). Capturing control room simulator data with the HERA system. *Official Proceedings of the Joint 8th IEEE Conference on Human Factors and Power Plants and the 13th Annual Workshop on Human Performance/Root Cause/Trending/Operating Experience/Self Assessment*, 210-217.

Hallbert, B., Whaley, A., Boring, R., McCabe, P., & Lois, E. (2007). *Human Event Repository and Analysis (HERA): The HERA Coding Manual and Quality Assurance, NUREG/CR-6903, Vol. 2*. Washington, DC: US Nuclear Regulatory Commission.

## REFEREED PUBLICATIONS (CONTINUED)

## 2007 (Continued)

Palanque, P., Basnyat, S., Blandford, A., Bernhaupt, R., Boring, R., Johnson, C., & Johnson, P. (2007). Beyond usability for safety critical systems: How to be SURE (safe, usable, reliable, and evolvable)? *CHI 2007 Conference Proceedings, Extended Abstracts*, 2133-2136.

Tran, T.Q., Boring, R.L., Joe, J.C., & Griffith, C.D. (2007). Extracting and converting quantitative data into human error probabilities. *Official Proceedings of the Joint 8th IEEE Conference on Human Factors and Power Plants and the 13th Annual Workshop on Human Performance/Root Cause/Trending/Operating Experience/Self Assessment*, 164-169.

Tran, T.Q., Boring, R.L., Dudenhoefter, D.D., Hallbert, B.P., Keller, M.D., & Anderson, T.M. (2007). Advantages and disadvantages of physiological assessment for next generation control room design. *Official Proceedings of the Joint 8th IEEE Conference on Human Factors and Power Plants and the 13th Annual Workshop on Human Performance/Root Cause/Trending/Operating Experience/Self Assessment*, 259-263.

Tran, T.Q., Gertman, D.I., Dudenhoefter, D.D., Boring, R.L., & Mecham, A.R. (2007). Cognitive virtualization: Combining cognitive models and virtual environments. *Official Proceedings of the Joint 8th IEEE Conference on Human Factors and Power Plants and the 13th Annual Workshop on Human Performance/Root Cause/Trending/Operating Experience/Self Assessment*, 195-200.

Tran, T.Q., Garcia, H., Boring, R.L., Joe, J.C., & Hallbert, B.P. (2007). Human factors issues for multi-modular reactor units. *Official Proceedings of the Joint 8th IEEE Conference on Human Factors and Power Plants and the 13th Annual Workshop on Human Performance/Root Cause/Trending/Operating Experience/Self Assessment*, 347-352.

Whaley, A.M., Boring, R.L., Blackman, H.S., McCabe, P.H., & Hallbert, B.P. (2007). Lessons learned from dependency usage in HERA: Implications for THERP-related HRA methods. *Official Proceedings of the Joint 8th IEEE Conference on Human Factors and Power Plants and the 13th Annual Workshop on Human Performance/Root Cause/Trending/Operating Experience/Self Assessment*, 322-327.

## 2006

Boring, R.L. (2006). Statistical considerations for the number of participants in human factors scaling studies. *Proceedings of the 50th Annual Meeting of the Human Factors and Ergonomics Society*, 1949-1953.

Boring, R.L. (2006). Modeling human reliability analysis using MIDAS. *Proceedings of the Fifth International Topical Meeting on Nuclear Plant Instrumentation, Controls, and Human Machine Interface Technology*, 1270-1274.

Boring, R.L., Dudenhoefter, D.D., Hallbert, B.P., & Gore, B.F. (2006). Virtual power plant control room and crew modeling using MIDAS. *Joint Halden Reactor Project and CSNI Special Experts' Group on Human and Organisational Factors Workshop on Future Control Station Designs and Human Performance Issues in Nuclear Power Plants*, Paper 5.3 (pp. 1-5).

Boring, R.L., Gertman, D.I., Joe, J.C., Blackwood, L.G., Blackman, H.S., & Brady, B.M. (2006). A simplified expert elicitation guideline. *Proceedings of the 8th International Conference on Probabilistic Safety Assessment and Management*, Paper PSAM-0089 (pp. 1-9).

Boring, R.L., Gertman, D.I., Whaley, A.M., Joe, J.C., Tran, T.Q., Keller, M.D., Thompson, R.P., & Gerszewski, I.R. (2006). A taxonomy and database for capturing human reliability and human performance data. *Proceedings of the 50th Annual Meeting of the Human Factors and Ergonomics Society*, 2217-2221.

Boring, R.L., Tran, T.Q., Gertman, D.I., & Ragsdale, A.S. (2006). A human reliability based usability evaluation method for safety-critical software. *Fifth International Topical Meeting on Nuclear Plant Instrumentation, Controls, and Human Machine Interface Technology*, 1275-1279.

## REFEREED PUBLICATIONS (CONTINUED)

**2006 (Continued)**

Boring, R.L., Tran, T.Q., Joe, J.C., Whaley, A.M., Gertman, D.I., Keller, M.D., Thompson, R.P., Gerszewski, I.R., Griffith, C.D., & Anderson, T.M. (2006). *Users' Guide for the NASA Human Reliability Database, INL/EXT-06-11944*. Idaho Falls: Idaho National Laboratory.

Boring, R.L., Whaley, A.M., Tran, T.Q., McCabe, P.H., Blackwood, L.G., & Buell, R.F. (2006). *Guidance on Performance Shaping Factor Assignments in SPAR-H, INL/EXT-06-11959*. Idaho Falls: Idaho National Laboratory.

Chandler, F.T., Chang, Y.H.J., Mosleh, A., Marble, J.L., Boring, R.L., & Gertman, D.I. (2006). *Human Reliability Analysis Methods: Selection Guidance for NASA*. Washington, DC: NASA Office of Safety and Mission Assurance Technical Report.

Dudenhoeffer, D.D., Permann, M.R., & Boring, R.L. (2006). The human factor in network system survivability. *Proceedings of the 8th International Conference on Probabilistic Safety Assessment and Management, Paper PSAM-0090* (pp. 1-8).

Dudenhoeffer, D.D., Permann, M.R., & Boring, R.L. (2006). Decision consequence in complex environments: Visualizing decision impact. *Sharing Solutions for Emergencies and Hazardous Environments. American Nuclear Society Joint Topical Meeting: 9th Emergency Preparedness and Response/11th Robotics and Remote Systems for Hazardous Environments, 211-218*.

Gertman, D.I., & Boring, R.L. (2006). Human reliability analysis as a modeling tool for homeland defense. *Sharing Solutions for Emergencies and Hazardous Environments. American Nuclear Society Joint Topical Meeting: 9th Emergency Preparedness and Response/11th Robotics and Remote Systems for Hazardous Environments, 226-230*.

Hallbert, B., Boring, R., Gertman, D., Dudenhoeffer, D., Whaley, A., Marble, J., & Joe, J. (2006). *Human event repository and analysis (HERA) system, overview, NUREG/CR-6903, Volume 1*. Washington, DC: US Nuclear Regulatory Commission.

Hallbert, B., Boring, R., Lois, E., Gertman, D.I., & Dudenhoeffer, D. (2006). Framework for the human event repository and analysis (HERA) system and its use to quantify human actions. *Proceedings of the 8th International Conference on Probabilistic Safety Assessment and Management, Paper PSAM-0224* (1-7).

Palanque, P., Bernhaupt, R., Boring, R., & Johnson, C. (2006). Testing interactive software: A challenge for usability and reliability. *CHI 2006 Conference Proceedings, Paper 448, pp. 1885-1889*.

**2005**

Boring, R.L. (2005). The validity of human and computerized writing assessment. *Proceedings of the 49th Annual Meeting of the Human Factors and Ergonomics Society, 759-763*.

Boring, R.L. (2005). Overcoming encumbrances on the road to good theory: Human-computer interaction as a catalyst for cognitive theory. In A. Thatcher, J. James, and A. Todd (eds.), *CybErg 2005: Proceedings of the Fourth International Cyberspace Conference on Ergonomics* (pp. 452-464). Johannesburg: International Ergonomics Association Press.

Boring, R.L., & Gertman, D.I. (2005). Atomistic and holistic approaches to human reliability analysis in the US power industry. *Journal of the Safety and Reliability Society, 25(2), 21-37*.

Boring, R.L., & Gertman, D.I. (2005). Advancing usability evaluation through human-reliability analysis. *Proceedings of HCI International 2005*.

## REFEREED PUBLICATIONS (CONTINUED)

## 2005 (Continued)

Boring, R.L., Gertman, D.I., Joe, J.C., & Marble, J.L. (2005). Human reliability analysis in the US Nuclear power industry: A comparison of atomistic and holistic methods. *Proceedings of the 49th Annual Meeting of the Human Factors and Ergonomics Society*, 1815-1819.

Boring, R.L., Gertman, D.I., Joe, J.C., & Marble, J.L. (2005). Proof of concept for a human reliability analysis method for heuristic evaluation of software. *Proceedings of the 49th Annual Meeting of the Human Factors and Ergonomics Society*, 676-680.

Boring, R., Gertman, R., Joe, J., Marble, J., Galyean, W., Blackwood, L., & Blackman, H. (2005). *Simplified Expert Elicitation Guideline for Risk Assessment of Operating Events*, INL/EXT-05-00433. Washington, DC: US Nuclear Regulatory Commission.

Boring, R.L., Hugo, J., Richard, C.M., & Dudenhoefter, D.D. (2005). Human-computer interaction for next-generation control rooms. *CHI 2005 Conference Proceedings*, 206-207.

Boring, R.L., & West, R.L. (2005). Mind as magnitude: Reconsidering information processing in cognitive engineering. *Proceedings of the 49th Annual Meeting of the Human Factors and Ergonomics Society*, 1826-1830.

Bruemmer, D. J., Few, D. A., Walton, M., Boring, R. L., Marble, J. L., Nielsen, C., & Garner, J. (2005). "Turn off the television!": Real-world robotic exploration experiments with a virtual 3-D display. *Proceedings of the Hawaii International Conference on System Sciences (HICSS)*.

Bruemmer, D. J., Few, D. A., Boring, R. L., Marble, J. L., Walton, M., & Nielsen, C. (2005). Shared understanding for collaborative control. *IEEE Journal of Systems, Man, and Cybernetics--Part A: Systems and Humans*, 35, 494-504.

## 2004

Boring, R.L. (2004). *Cognition and Psychological Scaling: Model, Method, and Application of Constrained Scaling*. PhD dissertation, Institute of Cognitive Science, Carleton University, Ottawa, Canada.

Boring, R.L., & Fernandes, G.J. (2004). Measuring visual appeal of web pages. *CHI 2004 Conference Proceedings*, 1557.

Boring, R.L., Gertman, D.I., & Marble, J.L. (2004). Temporal factors of human error in SPAR-H human reliability analysis modeling. *Proceedings of the 48th Annual Meeting of the Human Factors and Ergonomics Society*, 1165-1169.

Bruemmer, D. J., Boring, R. L., Few, D. A., & Marble, J. L. (2004). "I call shotgun!": An evaluation of mixed-initiative control for novice users of a search and rescue robot. *Proceedings of the IEEE Conference on Systems, Man, & Cybernetics*, 2847-2852.

Dudenhoefter, D.D., Gertman, D.I., Boring, R.L., & Marble, J.L. (2004). Transitioning to advanced human-machine interface technologies. *Proceedings of the Fourth American Nuclear Society International Topical Meeting on Nuclear Power Plant Instrumentation, Controls, and Human-Machine Interface Technologies*, 306-311.

Gertman, D.I., Blackman, H.S., Marble, J.L., Smith, C., & Boring, R.L. (2004). The SPAR-H Human Reliability Analysis Method. *Proceedings of the Fourth American Nuclear Society International Topical Meeting on Nuclear Power Plant Instrumentation, Controls, and Human-Machine Interface Technologies*, 67-73.

Gertman, D. I., Boring, R. L., Beitel, G., & Plum, M. (2004). Characterization process for representation of human factors and human reliability in facility security. *Transactions of the Annual Meeting of the American Nuclear Society*, 295.

Gertman, D.I., Boring, R.L., Marble, J.L., & Blackman, H.S. (2004). Mixed model usability evaluation of the SPAR-H human reliability analysis method. *Proceedings of the Fourth American Nuclear Society International Topical Meeting on Nuclear Power Plant Instrumentation, Controls, and Human-Machine Interface Technologies*, 59-67.



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**REFEREED PUBLICATIONS (CONTINUED)**

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**2004 (Continued)**

Thompson, L.A., Malmberg, J., Goodell, N.K., & Boring, R.L. (2004). The distribution of attention across a talker's face. *Discourse Processes*, 38, 145-168.

**2003**

Boring, R.L. (Guest Editor). (2003). Cognitive science: At the crossroads of the computer and the mind. *Association for Computing Machinery Crossroads*, 10(2), 2.

Boring, R.L. (2003). Human and computer-generated essay grades. *Proceedings of the 47th Annual Meeting of the Human Factors and Ergonomics Society*, 885-889.

Boring, R.L. (2003). Improving human scaling reliability. *Proceedings of the 47th Annual Meeting of the Human Factors and Ergonomics Society*, 1820-1824.

**2002**

Boring, R.L. (2002). Human-computer interaction as cognitive science. *Proceedings of the 46th Annual Meeting of the Human Factors and Ergonomics Society*, 1767-1771.

Boring, R.L. (2002). *Human and Computerized Essay Assessment: A Comparative Analysis of Holistic, Analytic, and Latent Semantic Methods*. MA Thesis, Department of Psychology, New Mexico State University, Las Cruces, New Mexico.

Boring, R.L., West, R.L., & Moore, S. (2002). Helping users determine video quality of service settings. *CHI 2002 Conference Proceedings: Extended Abstracts*, 598-599.

West, R.L., Boring, R.L., & Moore, S. (2002). Computer augmented psychophysical scaling. *Conference Proceedings of the 24th Annual Cognitive Science Society*, 932-937.

**2001**

Boring, R.L. (2001). Multiple notifications in desktop computing. *Proceedings of the 45th Annual Meeting of the Human Factors and Ergonomics Society*, 1556-1559.

Boring, R.L. (2001). User-interface design principles for experimental control software. *CHI 2001 Conference Proceedings: Extended Abstracts*, 399-400.

West, R.L., Boring, R.L., Dillon, R.F., & Bos, J. (2001). Human-computer interaction, quality of service, and multimedia Internet broadcasting. In A. Sloane and D. Lawrence (Eds.), *Multimedia Internet Broadcasting: Quality, Technology, and Interface* (pp. 1 - 15). London: Springer Verlag.

**2000**

Boring, R.L. (2000). Schumann's acculturation model: Cross-sectional and longitudinal evidence in second-language acquisition. *Canadian Linguistics Association Annual Conference Proceedings*, 51-62.

Laubstein, A.S., & Boring, R.L. (2000). Two levels of lexical access: Natural and experimental word blend evidence. *Canadian Linguistics Association Annual Conference Proceedings*, 167-176.