Robert W. Proctor

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Education

B.A. in Psychology, University of Texas at Austin, 1970 M.A. in Psychology, University of Texas at Arlington, 1972 Ph.D. in Psychology, University of Texas at Arlington, 1975

Academic Experience

Distinguished Professor of Psychological Sciences, Purdue University, West Lafayette, Indiana, December, 2007, through present.

Courtesy Appointment, School of Industrial Engineering, August, 2008 through present Fellow, Center for Education and Research in Information Assurance and Security

Professor, Department of Psychological Sciences, Purdue University, West Lafayette, Indiana, August, 1988 through December, 2007.

Associate Professor, Department of Psychology, Auburn University, Auburn, Alabama, September, 1980 through August, 1988.

Visiting Professor, Department of Psychology, University of Colorado, Boulder, Colorado, January, 1983 through April, 1983. (sabbatical leave)

Assistant Professor, Department of Psychology, Auburn University, Auburn, Alabama, September, 1976 through September, 1980.

Assistant Professor, Department of Psychology, Michigan State University, East Lansing, Michigan, September, 1975 through August, 1976. (one-year appointment)

Graduate Research Assistantships and Teaching Assistantships/Associateships, Psychology Department, University of Texas at Arlington, Arlington, Texas, Fall, 1971 through August, 1975.

<u>Honors</u>

- Outstanding Advisor of the Year Award, Student Activities and Organizations, Purdue University, 2019. (for the Student Chapter of the Human Factors and Ergonomics Society)
- Paul M. Fitts Education Award for outstanding contributions to the education and training of human factors and ergonomics specialties, the Human Factors and Ergonomics Society, Oct., 2018.
- Faculty Mentor of the Year, Louis Stokes Alliance for Minority Participation, Purdue University, April, 2017.
- Outstanding Graduate Mentor Award, College of Health and Human Sciences, Purdue University, April 2014.
- Franklin V. Taylor Award for Outstanding Contributions in the Field of Applied Experimental/ Engineering Psychology. *Division 21,* American Psychological Association, August, 2013.

Honors (cont'd.)

- Outstanding Advisor of the Year Award, Student Organization Leadership Awards, Student Activities and Organizations, Office of the Dean of Students, Purdue University, 2013.
- Fellow, Center for Social and Behavioral Sciences, School of Liberal Arts, Purdue University, Fall, 2000.
- Distinguished Alumnus Award, School of Sciences, University of Texas at Arlington, October 18, 1997.

Visiting Scholar, the Chinese University of Hong Kong, March, 1996.

- Plaque in appreciation for 10 years of service and guidance to the Auburn University chapter of Psi Chi, May, 1988.
- Certificate of appreciation in recognition of outstanding service as Psi Chi faculty advisor. Awarded by the student members of the Auburn University chapter, May, 1984.

Invited Talks

- Invited lecturer, Winter School: Human Action Control Current Theories and Debates, Department of Psychology, Eberhard Karls University of Tübingen, Germany, February 13-16, 2017.
- Invited talk at 27th Attention and Performance meeting: The Power of Instructions, Turnhout, Belgium, June 9-12, 2016.
- Invited talk at Building Bridges between Functional and Cognitive Psychology meeting, Ghent, Belgium, May 25-27, 2014.
- Invited address, "The American Journal of Psychology: 125 Years of Basic and Applied Experimental Research," 120th Annual Convention of the American Psychological Association, Division 21: Applied Experimental and Engineering Psychology, Orlando, FL, August 2-5, 2012.
- Invited opening talk, "Responding to the Source of Stimulation: An Interdisciplinary Conference in Tribute to J. Richard Simon," University of Iowa, Iowa City, IA, October 10-12, 2008.
- Invited panelist, "Conference on the Science and Applications of Perception Psychology: Festschrift to Honor the Career of Joel Warm," Cincinnati, OH, May 15-16, 2008.
- Invited talk at an international workshop on "Limits on Intentionality" held at Universität Konstanz, Konstanz, Germany, July 19-21, 2007.
- Invited talk in the symposium "Attention and Control: How Irrelevant Information Affects Response Selection and How Control Processes Intervene" held at the Joint meeting of the Experimental Psychology Society (EPS-UK) and the Belgian Association for Psychological Science (BAPS), Cardiff, Wales, April 12, 2007.
- Invited research talk at Dual-Task Conference, Ohlstadt, Germany, Feb. 26–29, 2004.

Invited research talk at Attention and Performance XIX, Kloster Irsee, Germany, July 16-22, 2000.

Featured Lecturer, Armadillo IX meeting of cognitive psychologists, Houston, TX, May, 1998.

Keynote Speaker, Canadian Society for Psychomotor Learning and Sports Psychology, Oct., 1995.

Professional Societies

American Psychological Association, Fellow Divisions 3 (Society for Experimental Psychology and Cognitive Science) and 21 (Applied Experimental and Engineering Psychology)
Association for Psychological Science, Fellow
Human Factors and Ergonomics Society, Fellow
Midwestern Psychological Association
Psychonomic Society, Fellow
Society for Computation in Psychology

Elected to the American Psychological Association Council of Representatives as Representative of Division 21: Applied Experimental and Engineering Psychology, August 2019-2022.

Elected to 3-year term as member at large of Division 3: Society of Experimental Psychology and Cognitive Science, of the American Psychological Association, August 2019-2022.

President-Elect, President, and Past President, Division 21: Applied Experimental and Engineering Psychology, American Psychological Association, August, 2016 through August, 2019.

Elected member of the Board of Scientific Affairs of the American Psychological Association for a 3year term from January 1, 2014 through December 31, 2016.

Elected Member-at-Large, Executive Committee, Division 21 (Applied Experimental and Engineering Psychology) of the American Psychological Association, June, 2014-August, 2016.

President, Society for Computers in Psychology, 2003-2004.

Elected to the Steering Committee of the Society for Computers in Psychology, November 2000.

Areas of Interest

My research interests are primarily in basic and applied issues in human perception and performance. The main focus is on the topic of action selection, and more specifically, stimulus-response compatibility. I also work on a range of issues relating to perception, attention, memory, skill acquisition, and motor performance. My applied research interests are in human factors and human-computer interaction; they include usability issues and decision making in cybersecurity, training for performance of complex tasks including operation of heavy construction equipment, user-centered design, and factors that influence interactions between connected and autonomous vehicles and human drivers. Another area in which I have been working is research methodology in science and the psychology of science.

Administrative Experience

Purdue University

Area Coordinator, Graduate Program in Cognitive Psychology, 1988-2003; 2004-2005; 2006-2009
Member, Primary Committee, Dept. of Psychological Sciences, 1988-present
Member, Advisory Committee, Dept. of Psychological Sciences1989-1991, 2013-2015
Member, Liberal Arts Faculty Senate, 1991-1994
Member, Cognitive Search Committee, 1988-1989; 2006-2007, 2012-2013, 2021-2022
Chair, Cognitive Search Committee, 1989-1990; 1990-1991
Member, Liberal Arts Grievance Committee, 1989-1991; 1998-2000; 2005-2007
Member, Graduate Committee, Dept. of Psychological Sciences, 1991-1992; 1993-1994; 1995-1996; 1999 (spring); 2003-2004, 2009-2022
Chair, Liberal Arts Nominating and Elections Committee, 1992-1994
Member, Industrial-Organizational Search Committee, 1997-1998; 2001
Member, Clinical Search Committee, 1999-2001

Administrative Experience (cont'd.)

Member, Liberal Arts Social and Behavioral Science Fellows Selection Committee, 2002-2003 Chair, Department Head Search Committee, Dept. of Psychological Sciences, 2002-2003 Member, Guidelines for Tenure and Promotion Committee, Spring, 2003 Member, Shop Committee, Spring, 2003 Chair, Cognitive Search Committee for Spousal Hire, Spring, 2003 Member, Colloquium Committee, Dept. of Psychological Sciences, 2003-2004; 2010-2018 Member, Admissions and Awards Committee, Dept. of Psychological Sciences, 2003-2007 Chair, Liberal Arts Social and Behavioral Science Fellows Selection Committee, 2003-2004 Member, College of Liberal Arts Faculty Affairs Committee, 2004-2007 College of Liberal Arts representative on the College of Engineering's Curriculum Reform Task Force (Engineer of 2020), 2004-2010 Member, College of Liberal Arts Conflict of Interest Committee, 2005 Member, Selection Committee, Clifford Kinley Trust, Grants for Research Relating to Human Welfare, 2006-2010 Chair, College of Liberal Arts Distinguished Professor Review Committee, 2008 Member, Center on Aging and the Life Course Symposium Committee, 2009 Member, Center on Aging and the Life Course Steering Committee, 2009-2011 Chair, Search Committee for James V. Bradley Chair, Dept. of Psychological Sciences, 2011-2012 Member, Purdue Symposium Planning Committee, 2014-2018. Member, Social Psychology and Sustainability Search Committee, Building Sustainable Communities Cluster Hire, 2014. Member, College of Liberal Arts Distinguished Professor Review Committee, 2017 Member, College of Health and Human Sciences Distinguished Professor Review Committee, 2020-2021 Member, Purdue Committee on Research Integrity, 2017-2019 academic years. Auburn University

Member, Liberal Arts Dean Search Committee, 1987 Member, University Academic Honesty Committee, 1986-1988 Member, Research Review Panel, Dept. of Health, Physical Education, and Recreation, 1983-1988 Chair, Departmental Ethics Committee, 1984-1988 Chair, Textbook Selection Committee, 1980-1983 Departmental Film Coordinator, 1976-1982 Member, Departmental Ethics Committee, 1978-1979 Member, Textbook Selection Committee, 1977-1979 Member, Undergraduate Curriculum Committee, 1976-1981 Member, Personnel Selection Committees

Teaching Experience

Undergraduate Courses

Attention and Cognitive Control Sensory and Perceptual Processes Human Learning and Memory Cognitive Processes Psycholinguistics Critical Analysis of Parapsychology Statistics Experimental Design Introductory Psychology Study Skills

Teaching Experience (cont.'d)

Graduate Courses

Attention and Performance Human Action Control Human Information Processing Human Factors in Engineering Human Learning and Memory Psychophysics Seminars on Attention and Performance Seminars on Response Selection and Dynamics of Cognition Seminar on Individual Differences in Cognition Seminars on Human Factors Seminars on Skill Acquisition Seminars on Philosophy of Science Seminar on Technology, Mind, & Society

Continuing Education

Human Factors in Engineering. Televised by the Purdue University Continuing Engineering Education Program, Fall, 1990; Fall, 1992; Fall, 1995; Fall, 1997; Fall, 1999; Fall, 2001; Summer, 2002; Fall, 2003; Fall, 2005; Fall, 2007; Fall, 2008; Fall, 2009; Fall, 2011; Fall, 2013; Fall 2015; Fall, 2017; Fall, 2019; Fall, 2021.

Human Factors in System Design. Purdue University Engineering/Management Program, April 29-May 4, 1991.

Consulting Experience

- Johnson and Bell Trial Lawyers, Crown Point, Indiana, 2022. Assisted with the investigation of a motor vehicle accident involving a commercial motor vehicle and a pedestrian.
- Todd and Smith Law Firm, Pikeville, KY, 1997. Consultation pertaining to warnings and recognition of danger for a case involving a death while performing repairs on a natural gas well.
- Litton Computer Services, Fort Benning, GA, 1988. Perceptual and cognitive factors in the acquisition and retention of land-navigation skills.
- PPG Industries, Inc., Coding and Resins Division, Pittsburgh, PA, 1985. Revised the CHAMP coding system for coding the pigments and resins used in making Pittsburgh Paints.
- Behavioral Research Services, Inc., Arlington, TX, 1973-1975. Co-founder of the company; worked on survey research projects.

Editorial Experience

Editorial Boards

Editor, *American Journal of Psychology*, March, 2008-present. This journal, founded in 1887, is the oldest one in the U.S. devoted to psychological sciences.

Editor, Behavior Research Methods, Instruments, & Computers, 1994-1999.

Associate Editor, Quarterly Journal of Experimental Psychology, 2001-2005.

Associate Editor, Memory & Cognition, 1986-1993.

Associate Editor for Cognitive Sciences, International Journal of Human-Computer Interaction, 1992-2000.

Editorial Advisory Board, Psychological Research/Psychologische Forschung, 2009-present.

Consulting Editor, Journal of Expertise, 2018-present.

Consulting Editor, Technology, Mind, and Behavior, 2020-present

Editorial Board, Human Factors, 2007-present.

Consulting Editor, International Journal of Human-Computer Interaction, 2001-present.

Review Editor, Frontiers in Cognition, 2010-present.

Editorial Board, Acta Psychologica, 2006-2020.

Consulting Editor, *Memory & Cognition*, 2009-2019.

Consulting Editor, *Journal of Experimental Psychology: Human Perception and Performance*, 2001-2011; 2014-2017.

Consulting Editor, International Journal of Cognitive Ergonomics, 1995-2001.

Consulting Editor, Perception & Psychophysics, 1983-1998.

Advisory Board, Handbook of Human Factors and Ergonomics (2006; 3rd ed.). Hoboken, NJ: Wiley.

Professional Conference Boards

- Program Chair, Society for Computers in Psychology 2002 Annual Meeting, Kansas City, MO, November, 2002.
- Member, Steering Committee, Technology, Mind, and Society Conference, American Psychological Association. Washington, DC, April 2018.
- Member, Neuroergonomics & Cognitive Engineering Board, 13th International Conference on Applied Human Factors and Ergonomics 2022, New York City, July 24-28, 2022.
- Member, Neuroergonomics & Cognitive Engineering Board, *12th International Conference on Applied Human Factors and Ergonomics* 2021, Virtual Conference, July 25-29, 2021.
- Member of the Cognitive and Neuroergonomics Board, 11th International Conference on Applied Human Factors and Ergonomics 2020, Virtual Conference, July, 2020.
- Member, Neuroergonomics & Cognitive Engineering Board, *10th International Conference on Applied Human Factors and Ergonomics* 2019, Washington, DC, July 24-28, 2019.
- Member, Neuroergonomics & Cognitive Engineering Board, 9th International Conference on Applied Human Factors and Ergonomics 2018, Orlando, FL, July 22-26, 2018.

- Member of Human Interface and the Management of Information Program Board, 19th International Conference on Human-Computer Interaction, Vancouver, Canada, July 9-14, 2017.
- Member of the Cognitive and Neuroergonomics Board, 8th International Conference on Applied Human Factors and Ergonomics 2017, Los Angeles, CA, July 17-21, 2017.
- Member of the Human Interface and the Management of Information Program Board, 18th International Conference on Human-Computer Interaction, Toronto, Ontario, August, 2016.
- Member of the Cognitive and Neuroergonomics Board, 7th International Conference on Applied Human Factors and Ergonomics 2016, Orlando, FL, July, 2016.
- Member of the Human Interface and the Management of Information Program Board, 17th International Conference on Human-Computer Interaction, San Francisco, CA, August, 2015.
- Member of the Human Interface and the Management of Information Program Board, *16th* International Conference on Human-Computer Interaction, Heraklon, Crete, June, 2014.
- Member of the Cognitive and Neuroergonomics Board, 5th International Conference on Applied Human Factors and Ergonomics 2014, Krakow, Poland, July, 2014.
- Member, Program Committee, HotSoS 2014, the First Annual Symposium and Bootcamp on the Science of Security, Raleigh, NC, April 8-9, 2014.
- Member of the Human Interface and the Management of Information Program Board, 15th International Conference on Human-Computer Interaction, Las Vegas, NV, July, 2013.
- Member, International Scientific Programme Committee, SouthCHI 2013: International Conference on Human Factors in Computing and Informatics, Maribor, Slovenia, July, 2013.
- Member of the Cognitive and Neuroergonomics Board, 4th International Conference on Applied Human Factors and Ergonomics 2012, San Francisco, CA, July, 2012.
- Member of the Scientific Committee, USAB 2011– Information Quality in e-Health. 7th Conference of the Austrian Computer Society Workgroup: Human-Computer Interaction, LKH-University Hospital, Graz, Austria, Nov., 2011.
- Member of the Human Interface and the Management of Information Program Board, 14th International Conference on Human-Computer Interaction, Orlando, FL, July, 2011.
- Member of the Program Committee, USAB 2010 HCI in Work & Learning, Life & Leisure. 6th Symposium of the Austrian Computer Society, Klagenfurt University, Austria, Nov., 2010.
- Member of the Cognitive Ergonomics Board, 3rd International Conference on Applied Human Factors and Ergonomics 2010, Miami, FL, July, 2010.
- Member of the Program Committee, USAB 2009 Usability & HCI for elnclusion 5th Symposium of the Austrian Computer Society, Linz, Austria, November, 2009.
- Member of the Human Interface and the Management of Information Program Board, 13th International Conference on Human-Computer Interaction, San Diego, CA, July, 2009.

- Member of the Program Committee, Usability & Human-Computer Interaction for Education and Work. 4th Symposium (USAB 2008) of the Austrian Computer Society, Graz, Austria, Nov., 2008.
- Member of the Cognitive Ergonomics Board, 2nd International Conference on Applied Human Factors and Ergonomics 2008, Las Vegas, NV, July, 2008.
- Member of the Program Committee, Cognitive Performance Support in Medicine and Health Care track for the 3rd Usability Symposium (USAB 2007) of the Workgroup HCI&UE of the Austrian Computer Society, Graz, Austria, November, 2007.
- Member of the Program Board, 12th International Conference on Human-Computer Interaction, Beijing, China, July, 2007.
- Member of the Program Board, 11th International Conference on Human-Computer Interaction, Las Vegas, Nevada, July, 2005.
- Member of the Program Board, 10th International Conference on Human-Computer Interaction, Crete, Greece, June, 2003.
- Member of the Program Board, 9th International Conference on Human-Computer Interaction, New Orleans, LA, August, 2001.
- Member of the Program Board, 7th International Conference on Human-Computer Interaction, San Francisco, CA, August, 1997.
- Member of the Program Board, 1st International Conference on Applied Ergonomics, Istanbul, Turkey, June, 1996.

Ad Hoc Reviewing

Journals:	Jo	urn	al	s:	
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American Psychologist Applied Cognitive Psychology Applied Ergonomics Attention, Perception, & Psychophysics Aviation. Space. and Environmental Medicine **Behavior Research Methods** Behaviour & Information Technology Canadian Journal of Experimental Psychology Cognitive Psychology Cognitive Science Current Psychology Ergonomics Experimental Brain Research Experimental Psychology IEEE Transactions on Systems, Man, and Cybernetics Instructional Science Journal of Applied Research in Memory and Cognition Journal of Cognitive Psychology Journal of Experimental Psychology: Applied Journal of Experimental Psychology: Learning, Memory, and Cognition Journal of Experimental Psychology: General Journal of General Psychology Journal of Gerontology: Psychological Sciences Journal of Motor Behavior

- Laterality: Asymmetries of Body, Brain and Cognition Motor Control Perspectives on Psychological Science PLOS 1 Psychological Bulletin Psychological Review Psychology and Aging Psychology and Neuroscience Psychological Science Psychonomic Bulletin & Review Quarterly Journal of Experimental Psychology Science Theoretical Issues in Ergonomics Science Vision Research Visual Cognition
- Granting Agencies: National Science Foundation Air Force Office of Scientific Research National Sciences and Engineering Research Council of Canada Social Sciences and Humanities Research Council of Canada
- Publishers:Academic PressAddison-WesleyBlackwell PublishersGoodyear PressHarper and RowLawrence Erlbaum AssociatesOxford University PressPrentice-HallSage Publishers, Inc.Scott, ForesmanTaylor & FrancisWest Publishing Company

General Research Interests

Action selection and preparation Stimulus-response compatibility Modality effects in perception and action Selective aspects of attention Dual-task performance Skill acquisition, training, and transfer Perceptual matching Response selection and attention in driving, flight, and operation of construction equipment Human-centered design of roadways for connected/autonomous & human-driven vehicles Human-computer interaction and human engineering Human factors in cyber security and privacy

Research Grants and Funding

- EAGER: SAI: Human-Centered Design and Enhancement of Next Generation Transportation Infrastructure with Connected and Automated Vehicles. National Science Foundation. Robert W. Proctor (PI), Yunfeng Chen (co-PI), Yiheng Feng (co-PI), and Jiansong Zhang (co-PI). 09/01/2021 through 08/31/2023. Budget: \$300,000
- SaTC: CORE: Medium: Collaborative: User-Centered Deployment of Differential Privacy. National Science Foundation. Ninghui Li (PI), Robert W. Proctor (co-PI), Jeremiah Blocki (co-PI), Aiping Xiong (Pennsylvania State University, co-PI), Somesh Jha (University of Wisconsin, co-PI). 01/01/2020 through 12/31/2021. Budget: \$500,000.

Research Grants and Funding (cont'd.)

- Toward a Generalized Framework and Flexible Software Environment for Power Analysis of Alcohol Treatment Randomized Control Trials. National Institutes of Health, Project Number: 1R01AA027264-01. Sean Lane (PI), Erin Hennes (PI), Robert Proctor (Co-I), Carol Song (Co-I), September 20, 2018, through August 31, 2023. \$3,400,000.
- SaTC: CORE: Medium: Improving Password Ecosystem: A Holistic Approach. National Science Foundation. Ninghui Li (PI), Robert Proctor (Co-PI), and Jeremiah Blocki (Co-PI). 10/01/2017 through 9/30/2019. \$300,000.
- Development of Self-Tuned Indoor Environments. Center for High Performance Buildings, Purdue University. PI: Panagiota Karava (Civil Engineering) PI: Co-PIs: Ilia Bilionis (Mechanical Engineering), Robert W. Proctor (Psychological Sciences), and Thanos Tzempelikos (Civil Engineering). January 1, 2016, through December 31, 2016. \$50,000.
- Human-Centered Systems for Cyber-Enabled Sustainable Buildings. National Science Foundation Cyber-Innovation for Sustainability Science and Engineering (CyberSEES) program. PI: Panagiota Karava (Civil Engineering) PI: Co-PIs: Ilia Bilionis (Mechanical Engineering), Jianghai Hu (Electrical and Computer Engineering), Robert W. Proctor (Psychological Sciences), and Thanos Tzempelikos (Civil Engineering). September 1, 2015, through August 31, 2019. \$1,200,000.
- Principal Investigator, "General Motors Urban Active Solutions PEV Project". Contract with General Motors, Detroit Michigan, August 2, 2014–November 2, 2014, \$64,502.88.
- Co-Principal Investigator with Ninghui Li, Purdue University, "A Human Information-Processing Analysis of Online Deception Detection" and "Scientific Understanding of Policy Complexity." North Carolina State University Science of Security Lablet: Growing the Science of Security through Analytics, National Security Agency. March 28, 2014–March 28, 2017, \$300,000.
- Co-Principal Investigator with Ninghui Li and Luo Si Purdue University and Ting Yu, North Carolina State University, TWC SBE: Medium: Collaborative: User-Centric Risk Communication and Control on Mobile Devices. National Science Foundation, August 1, 2013–July 31, 2016 (extended to July 31, 2018). \$838,219.
- Co-Principal Investigator with Thanos Tzempelikos (Civil Engineering), Panagiota Karava, Patricia Davies, and James Braun, Purdue University, "Integration of Humans and Their Environment in Building Design and Operation Including Advanced Technologies." Architecture for Humanity, Alcoa Foundation. August, 2013–January, 2016, \$123,000.
- Co-Principal Investigator with Ting Yu, North Carolina State University, and Ninghui Li, Purdue University, "Towards a Scientific Basis for User Centric Security Design." Science of Security Lablet, National Security Agency. August 15, 2012–May 15, 2014, \$250,788.
- Sub-award to Robert Proctor from Colorado State University, "Action's Effect on Perception." PI: Jessica Witt. NSF. August 8, 2012–May 31, 2013, \$55,568 (RA for Mila Sugovic).
- Co-Principal Investigator, "Skill Development and Transfer from Virtual Training Systems." NSF CMS –Info Tech & Infrastuct Systems Program. Sept. 15, 2007–Aug. 31, 2011, \$130,000.
- Co-Investigator, "Training Knowledge and Skills for the Networked Battlefield." Multidisciplinary Research Program of the University Research Initiative (MURI), Department of Defense Army ARO, May 1, 2005–Sept. 30, 2010, \$5,000,000 total. My share of the funding: \$550,000.

Research Grants and Funding (cont'd.)

- Co-Principal Investigator, "A Comprehensive Policy-Driven Framework for Online Privacy Protection: Integrating IT, Human, Legal and Economic Perspectives." NSF CyberTrust Program. September 1, 2004–August 31, 2007, \$666,000. My share of the funding: \$180,000.
- Principal Investigator, "Modeling the Effects of Aging on Memory", National Institute on Aging, Grant number 5R01AG021071-03. I took over supervision of the grant in July, 2006, when Aimée Surprenant left Purdue. September 30, 2003–August 31, 2008; Total Award Amount: \$889,868.
- Co-Principal Investigator, "Flight Display Technology Human Factors." School of Technology Interdisciplinary Innovation Initiative Grant. May 1, 2004–April 30, 2005, \$30,000.
- Principal Investigator, Kinley Trust Award, "Age Differences in Response Selection for Single and Multiple Task Sets". Awarded July 1, 2003–December 31, 2004, \$19,931.
- Awarded Lynn Fellowship for the Gerontology program at Purdue, for Rachael Anderson, \$13,500, plus supplement for health insurance, tuition, and fees, for 2003–2004 academic year.
- Principal Investigator, "Response Selection as a Function of Age". National Institute of Aging, with David F. Pick (Purdue Calumet), co-PI. October 1, 2002–August 31, 2004, \$75,000.
- Principal Investigator, "Perception of Continuously Variable Transmission Performance". Grant funded from the Ford Motor Company Foundation "Perception-Based Engineering Laboratory", with David F. Pick (Purdue Calumet) and Jon Fricker (Civil Engineering), co-Pls. August 1, 2002–December 31, 2004, \$100,000.
- Co-Principal Investigator, Human Factors and Human Performance Components: Ford Motor Company Foundation gift to Purdue University to fund a "Perception-Based Engineering Laboratory," Jan 24th, 2001 to Jan 2005. \$3.5 M. Co-PIs from ME, ECE, AUS and Psychology at Purdue collaborated with Dan Hirleman (Head, ME), Bob Bernhard (Director, Herrick Laboratory), Shari Rodriguez (ME Development), and Patricia Davies (ME, lead co-PI) on the proposal. The funds were used in part to construct a new facility as part of the expansion of the Ray W. Herrick Laboratories, which opened in fall, 2013.
- Usability testing course project for Thomson Consumer Electronics, spring semester, 2001, \$11,250. They provided 75 stereo units for use in PSY/IE 577 Human Factors in Engineering. We developed a usability survey as a class project, and each student was responsible for filling out the survey and for having a friend fill it out. A summary report was provided to Thomson.
- Principal Investigator, Bridge Grant, "Integrating Human-Usability Metrics into Information Security Models," Center for Education and Research in Information Assurance and Security, Purdue University, July 1, 2000–June 30, 2001, \$30,000. With Gavriel Salvendy, Industrial Engineering, Co-Principal Investigator, & Eugene Schultz, Computer Science, Consultant.
- Principal Investigator, 2000 Gerontology Program Pilot Grant, Purdue University. Title: "An Evaluation of Compatibility Effects as a Function of Age for Auditory and Visual Stimuli for Possible Use in Automobile Collision Warning Systems," May 1, 2000–April 30, 2001, \$8,000. With David F. Pick, Purdue Calumet.
- Co-Principal Investigator, Academic Reinvestment Grant, Development of Driver Performance laboratory. Awarded May, 2000. \$70,000 for two years. With Jon Fricker, Hong Tan, Mark Lehto, and James L. Mohler.

Research Grants and Funding (cont'd.)

- Principal Investigator, "Integrating Human-Usability Metrics into Information Security Models," grant awarded by Center for Education and Research in Information Assurance and Security, Purdue University, July 1, 1999–June 30, 2000, \$49,943. With Gavriel Salvendy, Industrial Engineering, Co-Principal Investigator, and Eugene Schultz, Computer Science, Consultant.
- Special Initiatives Fellowship for Kim-Phuong Vu, \$12,000 plus tuition and fees and \$590 as a medical insurance supplement. This award was spread over the 1999-2001 academic years to supplement a Jacob Javits four-year fellowship from the U.S. Dept. of Education she received.
- Budget for secretarial support and supplies from the Psychonomic Society for editorship of *Behavior Research Methods, Instruments, and Computers*, 1994–1999. Approximately \$13,000/year.
- Contract with General Motors Technical Education Program for Human Factors course sequence taught through Continuing Engineering Education, 1996. \$35,500 for course development.
- IBM RS/6000 workstation for G. Francis, R. Melara, and R. Proctor. IBM shared university research program equipment purchases, 1994.
- Principal investigator (with T. G. Reeve), "Stimulus-response compatibility effects in airborne systems design". Grant number AFOSR-88-0002 with the United States Air Force Office of Scientific Research, October 1, 1987–April 1, 1989. Budget of \$91,804.
- Budget for secretarial support and supplies from the Psychonomic Society for associate editorship of *Memory & Cognition*, 1986-1993. Approximately \$4,000/year.
- Inquiry Center, School of Education, Auburn University, Grant for the Development of Computerized Laboratory Routines for courses in Perception, Cognition, and Motor Skills, 1984 (with T. G. Reeve and J. D. Proctor).

Auburn University Grant-in-Aids for 1977, 1978, 1982, and 1985.

Inter-University and Interdisciplinary Activities

Visiting Faculty, Center for Research on Training, University of Colorado, Boulder, 2006-2018.

- Faculty Advisor, Purdue student chapter of the Human Factors and Ergonomics Society, School of Industrial Engineering, 1996-present.
- Member, Advisory Board, Center for Human Factors in Advanced Aeronautics Technologies, California State University Long Beach, 2009-2014.
- Cooperation Partner, Institut für Psychologie, RWTH Aachen University, Aachen, Germany. Dual Task Performance While Driving a Car: Age-related Differences in Critical Situations, German Science Foundation grant (DFG Mu 1298/5, SPP1084 "Altersdifferenzierte Arbeitssysteme"), Jochen Müsseler and Gisa Aschersleben, Administrators, 2006-2009.
- Collaborator with Phillip Dunston, School of Civil Engineering, on research concerning use of virtual reality simulators in the training of construction equipment operators.
- Collaborator with Ninghui Li, Department of Computer Science, on research concerning human judgment and choice relating to information security and privacy decisions.
- Collaborator with faculty from Aviation Technology, Computer Graphics Technology, and Industrial Engineering on projects in Human Factors in Aviation.

Inter-University and Interdisciplinary Activities (cont'd.)

Supervisor for visiting graduate students from University of Padua (Antonello Pellicano, 2003-2004; Giulia Baroni, 2010), RWTH Aachen University (Julia Seibold, 2014), and Wuhan University (Qi Zhong, 2016-2017), and Visiting Scholars from Shaanxi Normal University, Xi'an, China (Xiaolei Song, 2012-2013; Ming Chang, 2018-2019).

Graduate Student and Postdoctoral Researcher Supervision

Prior Doctoral Thesis and Postdoctoral Advisees

- Harvey D. Watson, 1980, The effects of objective and perceived size properties on visual form perception. Auburn University. Current position: Research Psychologist, Neurocognitive Assessment Branch, Rehabilitation and Reintegration Directorate, Health Policy and Services, Office of the Surgeon General, U.S. Army Medical Department, San Antonio, TX.
- 2. K. Venkata Rao, 1982-1984, Postdoctoral research associate in Prof. Robert W. Proctor's human performance lab, Auburn University. Current position: Independent business owner, Bangalore, India.
- 3. Brien N. Smith, 1989, The role of schematic knowledge in job evaluation. Current position: Dean, Scott College of Business, and Professor, Management, Indiana State University, Terre Haute, IN.
- Daniel J. Weeks, 1989, Processes involved in translating between orthogonal stimulus and response dimensions. Auburn University. Current position: Senior Project Manager, Algoma University, Sault Ste. Marie, Ontario, Canada; previously: President, University of Northern British Columbia, Prince George, Canada.
- 5. Michael A. Stadler, 1989, Chunking and implicit pattern learning in a serial reaction time task. Current position: Content Writer at American Psychological Association, Fort Myers, Florida, United States. (co-advisor with Henry L. Roediger III)
- 6. Kathryn C. Campbell, 1992, The role of response factors in the repetition effect with a spatialresponse task. Current position: Instructor, Dept. of Psychology, South Dakota State University, Brookings, SD.
- 7. Trisha Van Zandt, 1992, Modeling nonstationarity in perceptual matching. Current position: Professor, Dept. of Psychology, Ohio State University, Columbus, OH. (co-advisor with Hans Colonius)
- Addie Johnson (Dutta), 1993, Categorical learning in choice-reaction tasks. Current position: Former Professor, Faculty of Social and Behavioral Sciences, University of Groningen, Groningen, The Netherlands.
- Chen-Hui Lu, 1994, Effects of ideomotor compatibility and relative timing on the processing of multidimensional stimuli. Current position: Associate Professor, Department of Industrial Design, Shih Chien University, Taipei, Taiwan.
- 10. Mei-Ching Lien, 2001, An interactive conception of the psychological refractory period effect. Current position: Professor, Department of Psychology, Oregon State University, Corvallis, OR.
- 11. Julie G. Marble, 2001, Spatial compatibility and incidental sequence learning in the serial reaction time task. Current position: Visiting Research Scientist, Applied Research Laboratory for Intelligence and Security, University of Maryland, College Park, MD.
- 12. Todd E. Roswarski, 2001, Human decision-making in medicine: A study of professional characteristics and practices. Current position: Vice Chancellor of Academic Affairs, Ivy Tech College, Lafayette, IN.
- 13. Yang Seok Cho, 2002, Effects of stimulus-set location on orthogonal stimulus-response compatibility. Current position: Professor, Department of Psychology, Korea University, Seoul, Korea.
- Kim-Phuong L. Vu, 2003, Influences of a prior incompatible location mapping on tasks for which stimulus location is irrelevant. Current position: Professor, Department of Psychology, California State University Long Beach.

Graduate Student and Postdoctoral Researcher Supervision (cont'd.)

- 15. Antonello Pellicano, 2003-2004, Predoctoral research scholar from Italy in Prof. Robert W. Proctor's human performance lab. Current position: Postdoctoral Researcher, Section for Clinical and Cognitive Neurosciences, Department of Neurology, University Hospital Aachen, Aachen, Germany.
- 16. Lenore E. Read, 2004, Stimulus-response compatibility and negative priming without distractors: Implications for perception to action. Deceased. (coadvisor with Stuart Offenbach)
- Dongyuan (Debbie) Wang, 2004, A combined process in determining the direction and size of the Simon effect with wheel-rotation responses. Current position: Associate Professor, Department of Psychology, University of North Florida, Jacksonville, FL. (co-advisor with David Pick, Purdue Calumet)
- 18. Sufen Chen, 2007, Working memory modulates attentional control as revealed by sequential effects. Current position: Postdoctoral Researcher, Department of Cognitive and Neural Systems, Boston University, and Albert Einstein College of Medicine, Bronx, NY. (co-advisor with Robert D. Melara)
- Huijun Wang, 2007, Exploring response inhibition in adults with attention deficit hyperactivity disorder: An ERP study. Current position: Neurology Specialist, Christiana Care Health System, Newark, DE. (co-advisor with Robert D. Melara)
- 20. Huafei Liao, 2008, Content preparation for cross-cultural e-commerce for American and Chinese online consumers. Current position: Human Factors and Human Reliability, Sandia National Laboratories, Albuquerque, NM. (co-advisor with Gavriel Salvendy, Industrial Engineering)
- 21. Kyeong-Ah Jeong, 2009, Design and operation of smart homes in U.S.A. and Korea. Current position: Human Factors Engineer, Software Services Group, Developer Products Division, Intel Corporation, Hillsboro, OR. (co-advisor with Gavriel Salvendy, Industrial Engineering)
- 22. Yun Kyoung Shin, 2009, Examination of stimulus-response-effect structure in choice reaction tasks. Current position: Instructior, Ulsan National Institute of Science and Technology, Ulsan, Korea.
- 23. Cynthia Zdanczyk, 2009, The role of working memory in selective attention: Integrality of two speech dimensions across and within a category boundary. Current position: Continuing Lecturer of Psychology, Division of Social Sciences, Purdue University North Central, Westville, IN.
- 24. Chunhong Shao, 2009-2010, Postdoctoral research associate in Prof. Robert W. Proctor's human performance lab. Current position: Department of Psychiatry, Huashan Hospital, Fudan University, Shanghai, China.
- 25. Yinni Guo, 2010, Axiomatic evaluation method and content structure for information appliances. Current position: User Experience Researcher, Google, Mountain View, CA. (co-advisor with Gavriel Salvendy, Industrial Engineering)
- 26. Motonori Yamaguchi, 2010, Action-based selection across feature dimensions: Multidimensional vector models of stimulus-response compatibility. Current position: Reader, Department of Psychology, Edge Hill University, Ormskirk Lancashire, U. K.
- 27. Yanmin Zhang, 2010, Correspondence between stimulus, its reference, and response. Current position: Senior Research Analyst, Office of Institutional Research, Dartmouth College, Hanover, NH.
- 28. Giulia Baroni, January December 2010, Predoctoral research scholar from Italy in Prof. Robert W. Proctor's human performance lab. Current position: Research fellow, ROSSI project (www.rossiproject.eu), Department of Communication Studies, University of Bologna, Bologna, Italy.
- 29. Dongbin (Tobin) Cho, 2011, Mechanisms of judgments in perception-action relations: Representational affordance or holistic processing? Current position: Senior UX Researcher, Samsung Electronics, Korea.
- Kyungdoh Kim, 2011, Derivation and evaluation of 3D menu designs for smartphones. Current position: Assistant Professor, Industrial Engineering, Hongik University, Seoul, Korea. (co-advisor with Gavriel Salvendy, Industrial Engineering)

Graduate Student and Postdoctoral Researcher Supervision (cont'd.)

- Leon Zeng, 2011, Fostering creativity in product/service development: Validation in the domain of information technology. Current position: Senior Associate, Discover Financial Services. (co-advisor with Gavriel Salvendy, Industrial Engineering)
- 32. James D. Miles, 2008-2011, Postdoctoral research associate in Prof. Robert W. Proctor's human performance lab. Current position: Associate Professor, Department of Psychology, California State University Long Beach.
- Joey Chung-Yin So, 2014, Acquisition, retention, and transfer heavy equipment operator skills through simulator training. Current position: UX Research Lead at Dell Computer Corporation (co-advisor with Phillip S. Dunston, Civil Engineering)
- 34. Jing Chen, 2015, Selection versus rejection: The role of task framing in decision making. Current position: Assistant Professor, Department of Psychology, Old Dominion University, Norfolk, VA.
- 35. Nicole M. Murchison, 2016, Understanding the mechanism for response selection in compatibility tasks: Referential coding contrasted with biological properties of the hands. Current position: Systems Research and Analysis: Human Factors, Sandia National Laboratories, Albuquerque, NM.
- 36. Aiping Xiong, 2017, Roles of time perception and expected action effects in selecting delayed outcomes from description and experience. Current position: Assistant Professor, College of Information Sciences and Technology, Penn State University, University Park, Pennsylvania.
- 37. Courtney J. Griffin-Oliver, 2018, More than meets the eye: Stimulus-response compatibility effects in eye movements. Current position: Human Factors Scientist, Exponent (Engineering and Scientific Consultants), Philadelphia, PA.
- Isis Chong De La Cruz, 2020, Toward an understanding of automatic grasping responses in the absence of left-right correspondence. Current position: Human Factors Engineer II, Abbott Laboratories, Los Angeles, CA.

Master's Thesis Advisees (current positions listed for those not listed under Ph.D. degrees)

- 1. Larry P. Wiley, 1988, The use of static-image media in land-navigation simulation: An evaluation of cycloramic and conventional image-projection systems. Auburn University. Current position: Emeritus Professor, Department of Psychology and Counseling, Valdosta State University, Valdosta, GA.
- 2. Harriet Ann Marsh Lee, 1989, Response times of schizophrenic, non-schizophrenic, and normal subjects on a test for response competition. Auburn University. Received her Ph.D. from Auburn University in 1997. Current position: retired, Branford, Florida.
- 3. Chen-Hui Lu, 1992, The relationships among stimulus-response compatibility, the Simon effect and the Stroop effect.
- Huifang Wang, 1995, Two types of set-level S-R compatibility and their relations with element level S-R compatibility. Current position: Senior Manager of User Experience Design at SAS Institute, Cary, NC.
- 5. Julie G. Marble, 1998, Emergent features, instruction and graphic enhancement in display design.
- 6. Todd E. Roswarski, 1998, Auditory stimulus-response compatibility: Is there a role for a motor code?
- 7. Kim-Phuong L. Vu, 2000, Two-dimensional stimulus-response compatibility effects: Manipulating the salience of stimulus and response sets.
- 8. Dongyuan (Debbie) Wang, 2001, Stimulus-response compatibility with wheel-rotation responses.
- 9. Dongbin (Tobin) Cho, 2009, Within- and between-hand correspondence effects for objects with protruding left and right components.
- 10. Roslizawaty Mohd Rosli, 2009, Manufacturing engineer. CSDL, Alexandria Virginia (co-advisor with Hong Tan, Electrical and Computer Engineering)

Graduate Student and Postdoctoral Researcher Supervision (cont'd.)

- 11. Bessy Nohemy Lopez-Santamaria, 2011, Evaluating skill acquisition and transfer in heavy machinery operation using a simulation-based approach. Current position: St. Louis, MO.
- 12. Nicole M. Murchison, 2013, How hand posture modulates interference from extraneous Information in an Eriksen flanker task.
- 13. Aiping Xiong, 2014, Influence of referential coding in a choice task performed in a simulated driving cockpit. (co-advisor with Vincent Duffy, Industrial Engineering).
- 14. Julia C. Seibold, fall semester, 2014, Exploring handedness asymmetries in the Simon effect. Visiting Master's degree student from RWTH Aachen University, Germany. Current position: Graduate student at RWTH Aachen (advisor in Germany: Iring Koch).
- 15. Courtney Griffin-Oliver, 2015, Set- and element-level compatibility of eye-movement responses with spatial and verbal stimuli: Comparison to vocal and keypress responses.
- 16. Ding Ding. 2017. Interactions between design factors of airplane artificial horizon displays. Current position is with GE-AVIC Civil Avionics Systems Company Limited, Shanghai, China (research conducted in completing non-thesis option Master's degree in Industrial Engineering)
- 17. Scott R. Moore, 2017. Cybersecurity for Android applications. Current position: Engineer, Ford Motor Company, Dearborn, MI. (Master's degree in Industrial Engineering)
- 18. Tianfang Han, 2020. Revisiting variable-foreperiod effects: Evaluating the repetition priming account.

Other Advisees with Whom I Worked Closely

- 1. Lanie Dornier, 1986, Master's thesis: Advanced programming of arm and direction parameters: the effect of stimulus-response arrangement, Auburn University. Current position: Department Head, Department of Kinesiology, and Roger Thomas Luffy Endowed Professor, Louisiana Tech University, Rushton, LA.
- 2. Gene W. Fober, 1986, Effects of advanced planning on the performance of unimanual and bimanual movements, Auburn University. Current position: Program Manager, Engility Corporation (contractor for U.S. Army), Ft. Benning, GA.
- Elizabeth. A. Franz, 1992, Orthogonal oscillators in the bimanual coupling of different spatial forms. Current position: Associate Professor, Department of Psychology, University of Otago, Otago, New Zealand.
- 4. M. Athar Ali, 2006, Master's, Computer Technology. Current position: IT Program Manager, Novartis (a company that develops healthcare products), Bangalore, India.
- 5. Abhilasha Bhargav-Spantzel, 2007, Computer Science. Current position: Security Specialist, Intel, San Francisco, CA.
- 6. Gaojian Huang, 2020, Master's Psychology; 2021, Ph.D. Industrial Engineering. Current position: Assistant Professor, San Jose State University.

Graduate Committee Memberships

- 1. From 2001 to present: Served on 5 Master's thesis and 12 Ph.D. dissertation committees in Psychological Sciences and 15 Master's thesis and 32 dissertation committees in other departments.
- 2. Non-thesis Interdisciplinary Engineering Committees for Engineering Professional Education: estimated total of 600 since 1989.
- 3. Currently advising 4 Ph.D. students. Also, member of 6 Ph.D. and 2 Master's thesis committees.

Books

Duffy, V., Lehto, M. J., Yih, Y., & Proctor, R. W. (Eds.). (in press). *Human-automation interaction: Manufacturing, services & user experience.* Springer.

- Proctor, R. W., & Vu, K.-P. L. (in press). *Attention: Selection and control in Human Information Processing*. American Psychological Association.
- Woo, S. E., Tay, L., & Proctor, R. W. (Eds.). (2020). *Big data in psychological research*. American Psychological Association.
- Proctor, R. W., & Van Zandt, T. (2018). *Human factors in simple and complex systems* (3rd ed.). CRC Press.
- Johnson, A., & Proctor, R. W. (2017). Skill acquisition and training: Achieving expertise in simple and complex tasks. Routledge.
- Proctor, R. W. (Ed.) (2015). *Higher mental processes: Selections from <u>The American Journal of</u> <u>Psychology</u>. University of Illinois Press.*
- Healy, A. F., & Proctor, R. W. (Eds.) (2013). *Experimental psychology*. Volume 4 in I. B. Weiner (Editor-in-Chief), *Handbook of psychology* (2nd ed.). John Wiley.
- Johnson, A., & Proctor, R. W. (Eds.) (2013). *Neuroergonomics: A cognitive neuroscience approach to human factors and ergonomics.* Palgrave Macmillan.
- Proctor, R. W., & Capaldi, E. J. (Eds.) (2012). *Psychology of science: Implicit and explicit processes.* Oxford University Press.
- Proctor, R. W., Nof, S., & Yih, Y. (Eds.). (2012). Cultural factors in systems design: Decision making and action. CRC Press.
- Vu, K.-P. L., & Proctor, R. W. (Eds.) (2011). *Handbook of human factors in Web design* (2nd ed.). CRC Press.
- Proctor, R. W., & Read, L. E. (Eds.) (2009). *Attention* (Vols. 1-4). Sage Library in Cognitive and Experimental Psychology. Sage Publications.
- Proctor, R. W., & Van Zandt, T. (2008). *Human factors in simple and complex systems* (2nd ed.). CRC Press.
- Proctor, R. W., & Capaldi, E. J. (2006). Why science matters: Understanding the methods of psychological research. Blackwell Publishing.
- Proctor, R. W., & Vu, K.-P. L. (2006). Stimulus-response compatibility principles: Data, theory, and application. CRC Press.
- Proctor, R. W., & Vu, K.-P. L. (Eds.) (2005). *Handbook of human factors in Web design*. Lawrence Erlbaum Associates.
- Johnson, A., & Proctor, R. W. (2004). *Attention: Theory and practice*. Sage. [Spanish translation (2015), *Atención: Teoría y práctica*. Madrid, Spain: Editorial Universitaria Ramón Areces.]
- Healy, A. F., & Proctor, R. W. (Eds.) (2003). *Experimental psychology*. Volume 4 in I. B. Weiner (Editor-in-Chief), *Handbook of psychology*. John Wiley.
- Capaldi, E. J., & Proctor, R. W. (1999). *Contextualism in psychological research? A critical review*. Sage.

- Proctor, R. W., & Dutta, A. (1995). Skill acquisition and human performance. Sage.
- Proctor, R. W., & Van Zandt, T. (1994). *Human factors in simple and complex systems*. Allyn and Bacon.
- Dutta, A., Campbell, K., & Proctor, R. W. (1994). Workbook for human factors in simple and complex systems. Allyn & Bacon.
- Proctor, R. W., & Reeve, T. G. (Eds.) (1990). *Stimulus-response compatibility: An integrated perspective*. North-Holland.
- Proctor, R. W., & Weeks, D. J. (1990). *The goal of B. F. Skinner and behavior analysis*. New York, NY: Springer-Verlag.

Book Chapters

- Cao, Y., & Proctor, R. W. (in press). Neuroergonomics webpage attention research: Topics, tools, and WAR framework. In V. Duffy, M. J. Lehto, Y. Yih, & R. W. Proctor (Eds.), *Human-automation interaction: Manufacturing, services & user experience.* Springer.
- Healy, A. F., Kole, J. A., & Proctor, R. W. (in press). Principles of expertise for skill learning. In M. J. Kahana & A. Wagner (Eds.), Oxford handbook of human memory: Foundations and applications. Oxford University Press.
- Proctor, R. W., Thomas, B. S.*, & Dunston, P. S. (in press). Human interactions with an excavator simulator: Assessing two patterns of joystick control mappings. In M. J. Lehto, Y. Yih, & R. W. Proctor (Eds.), *Human-automation interaction: Manufacturing, services & user experience*. Springer.
- Proctor, R. W., Zeng, L., & Vu, K.-P. L. (2022). Human factors research and user-centered design. In L. Kahle, T. M. Lowrey, & J. Huber (Eds.), APA handbook of consumer psychology (pp. 693-706). American Psychological Association.
- Proctor, R. W., & Chong, I. (2021). Experiencing embodied cognition from the outside. In M. Robinson & L. Thomas (Eds.) *Embodied psychology: thinking, feeling, and acting* (pp. 573-595). Springer.
- Proctor, R. W., & Proctor, J. D. (2021). Sensation and perception. In G. Salvendy & W. Karwowski (Eds.), *Handbook of Human Factors and Ergonomics* (5th ed., pp. 57-90). John Wiley.
- Proctor, R. W., & Vu, K.-P. (2021). Location and arrangement of displays and control actuators. In W. Karwowski, A. Szopa, & M. M. Soares (Eds.), Handbook of standards and guidelines in human factors and ergonomics (2nd ed., pp. 513-524). CRC Press.
- Proctor, R. W., & Vu, K.-P. L. (2021). Selection and control of action. In G. Salvendy & W. Karwowski (Eds.), *Handbook of Human Factors and Ergonomics* (5th ed., pp. 92-113). John Wiley.
- Vu, K.-P. L., Proctor, R. W., & Hung, Y.-H. (2021) Website design and evaluation. In G. Salvendy & W. Karwowski (Eds.), *Handbook of human factors and ergonomics* (5th ed., pp. 1016-1036). John Wiley.

- Proctor, R. W., & Xiong, A. (2020). From small-scale experiments to big data: Challenges and opportunities for experimental psychologists. In S. E. Woo, L, Tay, & R. W. Proctor (Eds.). *Big data in psychological research* (pp. 35-57). American Psychological Association.
- Xiong, A., Proctor, R. W., & Li, N. (2020). Evolution of phishing attacks: Challenges and opportunities for humans to adapt to the ubiquitous connected world. In M. Mouloua & P. A. (Eds.), *Human performance in automated and autonomous systems: Emerging issues and practical perspectives* (pp. 237-257). CRC Press.
- Proctor, R. W., & Xiong, A. (2018). Experience, skill acquisition, and deliberate practice. In D. Z. Hambrick, G. Campitelli, & B. N. Macnamara (Eds.). *The science of expertise: Behavioral, neural, and genetic approaches to complex skill* (pp. 235-243). New York: Routledge.
- Xiong, A., & Proctor, R. W. (2018). The role of task space in action control: Evidence from research on instructions. In K. D. Federmeier (Ed.), *The psychology of learning and motivation* (Vol. 69; pp. 325-364). Academic Press.
- Vu, K.-P. L., & Proctor, R. W. (2016). Human factors in organizations. In H. L. Miller (Ed.), *The Sage encyclopedia of theory in psychology* (pp. 430-431). Sage.
- Vu, K.-P. L., & Proctor, R. W. (2016). User privacy concerns for E-commerce. In I. Lee (Ed.), Encyclopedia of E-commerce development, implementation, and management (Vol. III; pp. 1798-1805). IGA Global.
- Yamaguchi, M., & Proctor, R. W. (2015). Perception and attention: A multidimensional approach to human performance modeling. In R. R. Hoffman, P. A. Hancock, M. W. Scerbo, R. Parasuraman, & J. L. Szalma, (Eds.), *The Cambridge handbook of applied perception research* (Vol. 1; pp. 107-125). Cambridge University Press.
- Proctor, R. W., & Miles, J. D. (2014). Does the concept of affordance add anything to explanations of stimulus-response compatibility effects? In B. H. Ross (Ed.), *The psychology of learning and motivation* (Vol. 60; pp. 227-266). Academic Press.
- Capaldi, E. J., & Proctor, R. W. (2013). Implications of postmodernism and its variants for the psychology of science. In G. Feist & M. Gorman (Eds.), *Handbook of the psychology of science* (pp. 329-350). Springer.
- Jolij, J., Johnson, A., & Proctor, R. W. (2013). The cognitive neuroergonomics of perception. In A. Johnson & R. W. Proctor, R. W. (Eds.), *Neuroergonomics: A cognitive neuroscience approach to human factors and ergonomics* (pp. 26-50). Palgrave Macmillan.
- Proctor, R. W., & Vu, K.-P. L. (2013). Action selection. In A. F. Healy & R. W. Proctor (Eds.), *Experimental psychology* (2nd ed., pp. 295-319). Volume 4 in I. B. Weiner (Editor-in-Chief), *Handbook of psychology*. John Wiley.
- Capaldi, E. J., & Proctor, R. W. (2012). Psychology of science: Influence on the philosophy of science. In R. W. Proctor & E. J. Capaldi (Eds.), *Psychology of science: Implicit and explicit* processes (pp. 40-56). Oxford University Press.
- Proctor, R. W., & Capaldi, E. J. (2012). Introduction: Implicit and explicit processes in the psychology of science. In R. W. Proctor & E. J. Capaldi (Eds.), *Psychology of science: Implicit* and explicit processes (pp. 1-10). Oxford University Press.

- Proctor, R. W., & Proctor, J. D. (2012). Sensation and perception. In G. Salvendy (Ed.), *Handbook of human factors and ergonomics* (4th ed.; pp. 59-94). John Wiley.
- Proctor, R. W., & Vu, K.-P. L. (2012). Human information processing. In N. M. Seel (Ed.) *Encyclopedia of the sciences of learning, Part 8* (pp. 1458-1460). Springer Verlag.
- Proctor, R. W., & Vu, K.-P. L. (2012). Human information processing: An overview for humancomputer interaction. In J. Jacko (Ed.), *The human-computer interaction handbook* (3rd ed.; pp. 21-40). CRC Press.
- Proctor, R. W., & Vu, K.-P. L. (2012). Selection and control of action. In G. Salvendy (Ed.), Handbook of human factors and ergonomics (4th ed.; pp. 95-116). John Wiley.
- Proctor, R. W., Vu, K.-P. L., & Salvendy, G. (2012). Cross-cultural decision making and action: Issues, challenges, and prospects. In R. W. Proctor, S. Nof, & Y. Yih, (Eds.), *Cultural factors in systems design: Decision making and action* (pp. 305-319). CRC Press.
- Proctor, R. W., Yamaguchi, M., & Miles, J. D. (2012). Acquisition and transfer of basic skill components. In A. F. Healy & L. E. Bourne, Jr., *Training cognition: Optimizing efficiency, durability, and generalizability* (pp. 89-111). Psychology Press.
- Vu, K.-P. L., Proctor, R. W., & Garcia, F. G. (2012). Web site design and evaluation. In G. Salvendy (Ed.), *Handbook of human factors and ergonomics* (4th ed.; pp. 1323-1353). John Wiley.
- Vu, K.-P. L, Zhu, W., & Proctor, R. W. (2011). Evaluating Web usability. In K.-P. L. Vu & R. Proctor (Eds.), *Handbook of human factors in Web design* (pp. 439-460). CRC Press.
- Proctor, R. W., & Vu, K.-P. L. (2010). Action selection. In I. B. Weiner & E. Craighead (Eds.), *The Corsini encyclopedia of psychology* (Vol. 1, pp. 20-22). John Wiley.
- Proctor, R. W., & Vu, K.-P. L. (2010). Human sensation and perception. In J. G. Voeller (Ed.), *Wiley handbook of science and technology for homeland security* (article 293, pp. 1-17).: John Wiley.
- Proctor, R. W., & Vu, K.-P. L. (2010). Human factors and ergonomics. In H. Bidgoli (Ed.), *Handbook of technology management* (Vol. 1: Core concepts, financial tools and techniques, operations and innovation management; pp. 1057-1067). John Wiley.
- Proctor, R. W., & Yamaguchi, M. (2010). Factors affecting speed and accuracy of response selection in operational environments. In D. H. Andrews, R. P. Herz, & M. B. Wolf (Eds.), *Human factors issues in combat identification* (pp. 31-47). Ashgate.
- Proctor, R. W., & Read, L. E. (2009). Editors' introduction. In R. W. Proctor & L. E. Read (Eds.), *Attention* (Vol. 1, pp. xxi-xl). Sage Library in Cognitive and Experimental Psychology. Sage Publications.
- Proctor, R. W., Vu, K.-P. L., & Schultz, E. (2009). Human factors in information security and privacy. In J. N. D. Gupta & S. K. Sharma (Eds.), *Handbook of research on information security* and assurance (pp. 402-414). Information Science Reference.
- Yamaguchi, M., & Proctor, R. W. (2009). Modeling response times for digital humans. In V. Duffy (Ed.), Handbook of digital human modeling: Research for applied ergonomics and human factors engineering (pp. 15-1 – 15-11). CRC Press.

- Proctor, R. W., & Vu, K.-P. L. (2008). Human information processing: An overview for human-computer interaction. In A. Sears & J. Jacko (Eds.), *The human-computer interaction handbook: Fundamentals, evolving technologies, and emerging applications* (2nd ed.; pp. 43-62). Boca Raton, FL: CRC Press. [Also in A. Sears & J. Jacko (Eds.), *Human-computer interaction fundamentals* (pp. 19-38). CRC Press.]
- Proctor, R. W., & Proctor, J. D. (2006). Sensation and perception. In G. Salvendy (Ed.), *Handbook of human factors and ergonomics* (3rd ed., pp. 53-88). John Wiley.
- Proctor, R. W., & Read, L. E. (2006). Models of attention. In W. Karwowski (Ed.), *International encyclopedia of ergonomics and human factors* (2nd ed.; 439-444). CRC Press.
- Proctor, R. W., & Vu, K.-P. L. (2006). Laboratory studies of training, skill acquisition, and retention of performance. In K. A. Ericsson, N. Charness, P. J. Feltovich, & R. R. Hoffman (Eds.), *Cambridge handbook of expertise and expert performance* (pp. 265-286). Cambridge University Press.
- Proctor, R. W., & Vu, K.-P. L. (2006). Location and arrangement of displays and control actuators. In W. Karwowski (Ed.), *Handbook of standards and guidelines in ergonomics and human factors* (pp. 399-409). Lawrence Erlbaum Associates.
- Proctor, R. W., & Vu, K.-P. L. (2006). Selection and control of action. In G. Salvendy (Ed.), Handbook of human factors and ergonomics (3rd ed., pp. 89-110). John Wiley.
- Proctor, R. W., & Vu, K.-P. L. (2006). Stimulus-response compatibility. In W. Karwowski (Ed.), International encyclopedia of ergonomics and human factors (2nd ed.; 941-945). CRC Press.
- Vu, K.-P. L., & Proctor, R. W. (2006). Human information processing: Implications for human factors and human-computer interaction. In W. Karwowski (Ed.), *International encyclopedia of ergonomics and human factors* (2nd ed.; 1130-1134). CRC Press.
- Vu, K.-P. L., & Proctor, R. W. (2006). Web site design and evaluation. In G. Salvendy (Ed.), *Handbook of human factors and ergonomics* (3rd ed., pp. 1317-1343). John Wiley.
- Proctor, R. W., & Vu, K.-P. L. (2005). Roles of task-defined associations and reference frames in spatial stimulus-response compatibility. In A. F. Healy (Ed.), *Experimental cognitive psychology* and its applications (pp. 141-153). American Psychological Association.
- Zhu, W., Vu, K.-P. L, & Proctor, R. W. (2005). Evaluating Web usability. In R. W. Proctor & K.-P. L. Vu (Eds.), *Handbook of human factors in Web design* (pp. 321-337). Lawrence Erlbaum Associates.
- Proctor, R. W., & Capaldi, E. J. (2004). Teaching scientific methodology. In B. Perlman, L. I. McCann, & S. H. McFadden (Eds.), *Lessons learned: Practical advice for the teaching of psychology* (Vol. 2, pp. 211-220). American Psychological Society. [Reprinted from APS Observer, 16 (No. 1).]
- Proctor, R. W., & Vu, K.-P. L. (2004). Human factors and ergonomics for the Internet. In H. Bidgoli (Ed.), *The Internet encyclopedia* (Vol. 2, pp. 141-149). John Wiley.
- Capaldi, E. J., & Proctor, R. W. (2003). Current and future trends in experimental psychology. In S. F. Davis (Ed.), *Handbook of research methods in experimental psychology* (pp. 24-38). Blackwell.

- Proctor, R. W., Capaldi, E. J., & Vu, K.-P. (2003). Experimental methods in psychological research. In L. Nadel (Ed.-in-Chief), *Encyclopedia of Cognitive Science* (pp. 794-799). Nature Gp.
- Proctor, R. W., & Vu, K.-P. L. (2003). Action selection. In A. F. Healy & R. W. Proctor (Eds.), *Experimental psychology* (pp. 293-316). Volume 4 in I. B. Weiner (Editor-in-Chief) *Handbook of psychology*. John Wiley.
- Proctor, R. W., & Vu, K.-P. L. (2003). Human information processing: An overview for humancomputer interaction. In J. A. Jacko & A. Sears (Eds.), *The human-computer interaction handbook: Fundamentals, evolving technologies, and emerging applications* (pp. 35-51). Lawrence Erlbaum Associates.
- Proctor, R. W., & Vu, K.-P. L. (2002). Eliminating, magnifying, and reversing spatial compatibility effects with mixed location-relevant and irrelevant trials. In W. Prinz & B. Hommel (Eds.), *Common mechanisms in perception and action: Attention and Performance, Vol. XIX* (pp. 443-473). Oxford University Press.
- Proctor, R. W. (2001). Stimulus-response compatibility. In W. Karwowski (Ed.), *International encyclopedia of ergonomics and human factors* (Vol. 1, pp. 486-489). Taylor & Francis.
- Proctor, R. W., & Read, L. (2001). Models of attention. In W. Karwowski (Ed.), *International encyclopedia of ergonomics and human factors* (Vol. 1, pp. 266-270). Taylor and Francis.
- Proctor, R. W., & Proctor, J. D. (1997). Sensation and perception. In G. Salvendy (Ed.), *Handbook of human factors and ergonomics* (2nd ed.; pp. 43-88). John Wiley.
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