

Vinuta Rau, Ph.D.
Scientist

Professional Profile

Dr. Rau's work involves the developmental, cognitive, perceptual, and psychophysical human factors associated with accidents and injuries. Her work focuses on developing and evaluating safety information, warnings, and instructions for consumer products. She applies her knowledge of child development and her studies of parenting behavior to analyze issues related to supervision, child-product interactions, and accident patterns unique to children.

Using large-scale incident and injury data, such as the Consumer Product Safety Commission's National Electronic Injury Surveillance System, Dr. Rau has assessed injuries associated with various children's products. She has also developed warnings and instructional literature for children's products, which included a review of labeling guidance contained in national standards for children's products as well as requirements reflected in federal regulations.

Prior to joining Exponent, Dr. Rau completed a Ph.D. in psychology at the University of California Los Angeles, specializing in behavioral neuroscience. Her research focused on stress effects on learning and memory. After completing her Ph.D., she conducted postdoctoral research at the University of California San Francisco studying how inhaled anesthetics provided during surgery produce amnesia. She has used a variety of experimental methods in her research including *in vivo* behavioral testing, neuropharmacology, genetic engineering and dose response modeling. She has also used data collection strategies involving telephone screening, survey design and analysis, and individual interviews.

Academic Credentials and Professional Honors

Ph.D., Psychology, Specialization in Behavioral Neuroscience, University of California, Los Angeles, 2005

M.A., Psychology, University of California, Los Angeles, 1998

B.A. Psychology, The Johns Hopkins University, 1996

Postdoctoral Fellow, University of California San Francisco

Publications

Ponomarev I, Rau V, Eger E, Harris A, Fanselow M. Amygdala transcriptome and cellular mechanisms underlying stress-enhanced fear learning, a rat model of posttraumatic stress disorder. *Neuropsychopharmacology* 2010; 35(36):1402–1411.

Rau V, Iyer SV, Oh I, Chandra D, Harrison N, Eger EI, 2nd, Fanselow MS, Homanics GE, Sonner JM. Gamma-aminobutyric acid type A receptor alpha 4 subunit knockout mice are resistant to the amnestic effect of isoflurane. *Anesth Analg* 2009; 109:1816–1822.

Stratmann G, Sall JW, May LD, Bell JS, Magnusson KR, Rau V, Visrodia KH, Alvi RS, Ku B, Lee MT, Dai R. Isoflurane differentially affects neurogenesis and long-term neurocognitive function in 60-day-old and 7-day-old rats. *Anesthesiology* 2009; 110:834–848.

Stratmann G, May LD, Sall JW, Alvi RS, Bell JS, Ormerod BK, Rau V, Hilton JF, Dai R, Lee MT, Visrodia KH, Ku B, Zusmer EJ, Guggenheim J, Firouzian A. Effect of hypercarbia and isoflurane on brain cell death and neurocognitive dysfunction in 7-day-old rats. *Anesthesiology* 2009; 110:849–861.

Rau V, Oh I, Laster M, Eger EI, 2nd, Fanselow MS. Isoflurane suppresses stress-enhanced fear learning in a rodent model of post-traumatic stress disorder. *Anesthesiology* 2009; 110:487–495.

Rau V, Fanselow MS. Exposure to a stressor produces a long lasting enhancement of fear learning in rats. *Stress* 2009; 12:125–133.

Rau V, DeCola JP, Fanselow MS. Stress-induced enhancement of fear learning: an animal model of posttraumatic stress disorder. *Neurosci Biobehav Rev* 2005; 29:1207–1223.

Rau V, Grijalva CV. Indomethacin attenuates hyperthermia produced by anterior coronal lateral hypothalamic knife cuts. *Brain Res Bull* 2004; 64:53–58.

Klein SL, Kriegsfeld LJ, Hairston JE, Rau V, Nelson RJ, Yarowsky PJ. Characterization of sensorimotor performance, reproductive and aggressive behaviors in segmental trisomic 16 (Ts65Dn) mice. *Physiol Behav* 1996; 60:1159–1164.

Prior Experience

Assistant Researcher, University of California San Francisco, 2008–2010

Postdoctoral Fellow, University of California San Francisco, 2006–2008

Counseling Assistant, University of California Los Angeles, 2000–2005

Teaching Assistant, University of California Los Angeles, 1998–2000

Research Trainee, The Devereux Foundation, 1996–1997

Professional Affiliations

Society for Neuroscience