

CURRICULUM VITAE
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Joel Lachter

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Degrees

University of Rochester — Ph.D. in Psychology and Computer Science, 1994
University of Rochester — M.A. in Psychology, 1992
Harvard College — A.B. in Mathematics, 1985

Other Education

International Computer Science Institute, UC Berkeley — January -June, 1990
Summer Linguistics Institute, Stanford — Summer, 1987

Honors, Grants and Awards

NASA Group Achievement Award, Air Space Ops and Flight Deck Display Research Lab — 2009
First Place, Toastmasters District 4 Humorous Speech Contest — 2006
NASA Ames Research Center, Directors Discretionary Fund (primary investigator)— 2004
NASA Ames Research Center, Directors Discretionary Fund (co-investigator)— 2002
NSF Pre-doctoral Fellowship — 1987 - 1990
University of Rochester Sproul Fellowship — 1986 - 87, 1990 - 91
Cum Laude in general studies — Harvard College, 1985

Employment

Senior Research Associate, NASA Ames Research Center/San Jose State University— 2003 - present
NRC Fellowship, NASA Ames Research Center — 2000 - 2003
Research Associate, University of Arizona — 1995 - 2000
McDonnell Foundation Postdoctoral Fellow, Princeton University — 1994 - 1995

Refereed Journal Articles

Lien, M.-C., Ruthruff, E., Kouchi, S., & Lachter, J. (2010). Even frequent and expected words are not identified without spatial attention. *Attention, Perception, and Psychophysics*, 72, 973-988.
Lachter, J., Remington, R. W., & Ruthruff, E. (2009). Space, object and task selection. *Attention, Perception & Psychophysics*, 71, 995-1014.
Lachter, J., Ruthruff, E., Lien, M.-C., & McCann, R. S. (2008). Is attention needed for word identification? Evidence from the Stroop paradigm. *Psychonomic Bulletin and Review*, 15, 950-955.
Lachter, J., Forster, K. I. & Ruthruff, E. (2004). Forty-five years after Broadbent: Still no identification without attention. *Psychological Review*, 111, 880-913.
Lachter, J., Durgin, F. & Washington, T. (2000). Disappearing percepts: Evidence for retention failure in metacontrast masking. *Visual Cognition*, 7, 269-279.

Refereed Journal Articles (cont.)

Lachter, J. and Durgin, F. (1999). Metacontrast masking functions: A question of speed? *Journal of Experimental Psychology: Human Perception and Performance* 25:936-947.
Lachter, J. & Hayhoe, M. (1995). Capacity limitations in memory for visual locations. *Perception*, 24, 1427-1441.

- Hayhoe, M., Lachter, J. & Feldman, J. (1991). Integration of form across saccadic eye movements. *Perception*, 20, 393-402.
- Lachter, J. & Bever, T. G. (1988). The relation between linguistic structure and associative theories of language learning—A constructive critique of some connectionist learning models. *Cognition*, 28, 195-247 (Reprinted in S. Pinker and J. Mehler, Eds., 1988. *Connections and Symbols*. Cambridge: MIT Press).

Book Chapters

- Hayhoe, M., Lachter, J. & Møller, P. (1992). Spatial memory and integration across saccadic eye movements. In K. Rayner (Ed.) *Eye Movements and Visual Cognition: Scene Perception and Reading*. New York: Springer.

Published Commentary

- Lachter, J. (2001). Object similarity, not identity: Getting at Bedford's core arguments. *Current Psychology of Cognition* 20: 231-236.
- Lachter, J. (1994). Consciousness in natural language and motor learning. *Behavioral and Brain Sciences* 17:409-410.
- Karn, K., Lachter, J., Møller, P. and Hayhoe, M. (1994). Task dependent spatial memory across saccades. *Behavioral and Brain Sciences* 17:267-268.

Conference Presentations

- Wu, S.-C., Lachter, J., Johnson, W. W. & Battiste, V. (2010, September). Assessment of the use of electronic flight bags for displaying enhanced traffic and weather information. Paper to be presented at the International Council of the Aeronautical Sciences. Nice, France.
- Dao, A.-Q. V., Lachter, J., Battiste, V., Brandt, S. L., Vu, K.-P., Strybel, T. Z., Ho, N., Martin, P. & Johnson, W. W. (2010, September). Automated spacing support tools for interval management operations during continuous descent approaches. Talk to be presented at the Human Factors and Ergonomics Society 54th Annual Meeting, San Francisco, CA.
- Kouchi, S., Lien, M.-C., Ruthruff, E. & Lachter, J. (2009, November). Does frequent repetition of a word enable automatic word processing? Poster presented at the 50th annual meeting of the Psychonomic Society. Boston, Massachusetts.
- Johnson, W. W. & Lachter, J. (2009, November). TOOWiLDx: Trajectory oriented operations with limited delegation and weather. Presented at the NASA Aviation Safety Program Technical Interchange Meeting. Tyson's Corners, VA.
- Lachter, J., Johnston, J. C., Corrado, G. & McClelland, J. L. (2009, November) Toward online measurement of decision state. Poster presented at the 50th annual meeting of the Psychonomic Society. Boston, Massachusetts.
- Ligda, S. V., Johnson, N., Lachter, J. & Johnson, W. W. (2009, July). *Pilot confidence with ATC automation using cockpit situation display tools in a distributed traffic management environment*. Talk presented at the 13th International Conference on Human-Computer Interaction. San Diego, California.
- Wu, S.-C., Lachter, J., Johnson, W. W., Battiste, V., Mogford, R., Brandt, S. L., Dao, A.-Q. V., Johnson, N. & Ligola, S. (2009, April). *Eye-tracking in a mid-fidelity Boeing 777 flight simulator to advance new operational concepts*. Talk presented at the 15th International Symposium on Aviation Psychology. Dayton, Ohio.
- Lachter, J., Johnson, W. W., Wu, S.-C., Homola, J. R., Battiste, V. & Johnston, J. C. (2008, May). *Lowlighting on an ATC display: Effects of traffic density and brightness*. Poster presented at the 2008 meeting Human Factors Ergonomics Society Aerospace Technical Group. Arlington, Texas.
- Scott, A., Lien, M.-C., Ruthruff, E., & Lachter, J. (2008, April). *Is spatial attention needed to extract meaning from words? Evidence from electrophysiology*. Poster presented at the Cognitive

- Neuroscience Society conference. San Francisco, California.
- Cornett, L., Lien, M.-C., Ruthruff, E. & Lachter, J. (2007, November). *Electrophysiological evidence that semantic visual word processing requires spatial attention*. Poster presented at the annual meeting of the Psychonomic Society. Long Beach, California.
- Hayashi, M., Huemer, V., Lachter, J., Liston, D., Elkins, S., Renema, F., Beutter, B. McCandless, J. W., McCann, R. S., & Sprikovska, L. (2006, October). *Evaluation of an advanced fault management system display for next generation crewed space vehicles*. Talk presented at the 50th Annual Meeting of the Human Factors and Ergonomics Society. San Francisco, California.
- Lachter, J., & Ruthruff, E. (2005, November). *Letter processing in the absence of attention*. Poster presented at the annual meeting of the Psychonomic Society. Toronto, Ontario.
- Ruthruff, E., Lachter, J., and Lien, M.-C. (2005, January). *Is spatial attention needed for object identification? Evidence from the Stroop paradigm*. Talk presented at the International Conference on Attentional Control, National Chung-Cheng University, Taiwan.
- Lachter, J., Ruthruff, E., & Remington, R. W. (2003, November). *Attention capture: Shifting or spreading?* Poster presented at the annual meeting of the Psychonomic Society. Vancouver, British Columbia.
- Lachter, J., Ruthruff, E., & Remington, R. W. (2003, August). *Measuring the allocation of attention*. Paper presented at the annual meeting of the Cognitive Science Association for Interdisciplinary Learning. Hood River, Oregon.
- Lachter, J., Ruthruff, E., & Forster, K. I. (2002, November). *Attention and reading of non-fixated words*. Poster presented at the annual meeting of the Psychonomic Society. Kansas City, MO.
- Lachter, J., & Ruthruff, E. (2001, November). *Attentional capture explains reading of irrelevant words*. Poster presented at the annual meeting of the Psychonomic Society. Orlando, Florida.
- Remington, R. W., Ruthruff, E., & Lachter, J. (2001, November). *Attention without selection: Shallow processing of attended non-targets*. Paper presented at the annual meeting of the Psychonomic Society. Orlando, Florida.
- Lachter, J., Forster, K. I., & Ruthruff, E. (2000, November). *Unattended words are not identified*. Poster presented at the annual meeting of the Psychonomic Society. New Orleans, Louisiana.
- Remington, R. W., Lachter, J., & Ruthruff, E. (2000, November). *Selective processing during brief attentional fixations*. Poster presented at the annual meeting of the Psychonomic Society. New Orleans, Louisiana.
- Lachter, J., & Forster, K. I. (2000, May). *Attention shifts and the reading of irrelevant words*. Poster presented at the annual meeting of The Association for Research in Vision and Ophthalmology. Fort Lauderdale, Florida.
- Lachter, J., & Durgin, F. (1998, May). *The development of metacontrast masking*. Poster presented at the annual meeting of The Association for Research in Vision and Ophthalmology. Fort Lauderdale, Florida.
- Lachter, J. and Durgin, F. (1997, November). *Reduction in metacontrast with fast responding*. Poster presented at the annual meeting of the Psychonomic Society. Philadelphia, Pennsylvania.
- Hameroff, S. R., Novak, S. L., Yang, S., & Lachter, J. (1997, October). *Subjective time flow: Effects of pre-operative medication and general anesthesia*. Poster presented at the 27th annual meeting of the Society for Neuroscience. New Orleans, Louisiana.
- Lachter, J., & Durgin, F. (1997, June). *Fleeting awareness in metacontrast*. Paper presented at the first conference of the Association for the Scientific Study of Consciousness. Claremont, CA.
- Lachter, J., & Durgin, F. (1996, October). *Metacontrast detection task shows anomalous speed-accuracy tradeoff*. Poster presented at the annual meeting of the Psychonomic Society. Chicago, Illinois.
- Lachter, J. (1995, May). *Processing of unattended stimuli: Detection not identification*. Poster presented at the annual meeting of The Association for Research in Vision and Ophthalmology.

Fort Lauderdale, Florida.

Lachter, J. (1994, May). *Iconic memory for overlapping and non-overlapping stimuli*. Poster presented at Converging Operations in the Study of Visual Selective Attention. University of Illinois, Urbana, Illinois.

Lachter, J., Hayhoe, M., & Feldman, J. (1991, May). *Capacity limitations in the integration of information across saccades*. Paper presented at the annual meeting of The Association for Research in Vision and Ophthalmology. Sarasota, Florida.

Lachter, J., Hayhoe, M., & Feldman, J. (1989, May). *Integrating form across saccades*. Paper presented at the annual meeting of The Association for Research in Vision and Ophthalmology. Sarasota, Florida.

Invited Presentations

Lachter, J. (2003, March). *Where did Broadbent go wrong? Measuring the allocation of processing resources*. University of Arizona, Tucson, Arizona.

Lachter, J. (1999, December). *Cognition About Perception: Some Thoughts About What We See*. Lewis and Clark College, Portland, Oregon.

Lachter, J. (1999, May). *Cognition About Perception: Some Thoughts About What We See*. University of Southwestern Louisiana, Lafayette, Louisiana.

Lachter, J. (1998, April). *Seeing and Unseeing: A case study in unconscious perception*. University of Central Arkansas, Conway, Arkansas.

Lachter, J. (1996, October). *The development of a percept*. University of Colorado, Boulder, Colorado.

Lachter, J. (1996, September). *A reverse speed-accuracy tradeoff*. University of Arizona, Tucson, Arizona.

Lachter, J. (1995, November). *Processing of unattended stimuli in vision*. Princeton University, Princeton, New Jersey.

Lachter, J. (1994, January). *Processing of unattended stimuli*. Tufts University, Medford, Massachusetts.

Teaching Experience

Instructor, Psych. Measurement and Statistics (Psy 230), U. of Arizona, Summer 1999

Co-Instructor (w/ Dr. Nicol), Cognitive Psychology (Psy 235), U. of Arizona, Spring 1997

Teaching Assistant, Learning and Memory (Psy 231), U. of Rochester, Spring 1993

Teaching Assistant, Intro. to Cognitive Science (Cog Sci 101), U. of Rochester, Spring 1992

Instructor, Philosophy of Cognitive Science (Cog Sci 271), U. of Rochester, Spring 1989

Grader, Analysis (Math 110), Harvard College, Fall 1984

Departmental Service

Prehealth Professions Committee, 1997, 1998

Interviewed and evaluated undergraduates applying for medical school

Consciousness Summer Institute, 1997

Workshop to set objectives for the University of Arizona Center for Consciousness Studies

Cognitive Science Curriculum Committee, 1991 - 1992

Ad hoc committee set up to reorganize the Cognitive Science Program's curriculum

Psychology Department Speakers Committee, 1989 - 1990

Arranged visits for outside speakers

Cognitive Science Speakers Committee, 1987 - 1988

Arranged visits for outside speakers

Psychology Computing Committee, 1987 - 1988

Decided policy regarding shared computing resources (servers and printers)
Organized Cognitive Science Happy Hours, 1986 - 1988
Monthly gatherings to encourage interdepartmental interaction

Professional Organizations

Psychonomic Society
Association for Psychological Science
Human Factors Ergonomics Society
Toastmasters International