

THIRTY-SEVENTH ANNUAL INTERDISCIPLINARY CONFERENCE

The Village at Breckenridge, Colorado

January 29 – February 3, 2012

Organizer: George Sperling, University of California, Irvine

Proceedings

Sunday, January 29: 5:00 - 5:30 pm *****Reception******Registration, Snacks, and Refreshments.*

Sunday, January 29: 5:30 - 8:00 pm **Sunday Night Miscellany**

Rich Shiffrin, *Indiana U.* Infomercial on back-country skiing.
Shaw Ketels, *U. Colorado, Boulder.* Attentional focus and complex motor skill acquisition: Snowboarding.
Erica Okada, *U. Hawaii.* The private and public benefits of green products and the price/quality tradeoff.
Jeff Mulligan, *NASA Ames Research Center.* Cognitive engineering for next generation air traffic control towers.
Beau Watson, *NASA Ames Research Center.* Video acuity: A metric to quantify the effective performance of video systems.
Misha Pavel, *NSF.* Fundamental scientific challenges in transforming health care: Model-based approaches.

Monday, January 30: 4:00 – 8:00 pm **Visual Neuroscience** (Organizer: Bill Geisler)

Farran Briggs, *Dartmouth Medical School.* Synaptic and circuit mechanisms for spatial attentional modulation.
John Reynolds, *Salk Institute.* Neural mechanisms of attention.
Eyal Seidemann, *U. Texas, Austin.* Top-down attentional modulations in primate V1.
Bill Geisler, *U. Texas, Austin.* Toward a neurophysiology-based model of detectability in natural images.
Alex Huk, *U. Texas, Austin.* Encoding and decoding of signals for perceptual decisions in posterior parietal cortex.
Adam Kohn, *Albert Einstein College of Medicine.* Adaptation in the primate motion processing stream.

Tuesday, January 31: 4:00 – 8:00 pm **Higher-Level Vision I** (Organizer: Zygmunt Pizlo)

Zygmunt Pizlo, *Purdue U.* Definition of shape.
Larry Cormack, *U. Texas, Austin.* The binocular processing of three-dimensional motion.
Casper Erkelens, *Utrecht U.* Perceptual rivalry in monocular and binocular vision.
Steve Shevell, *U. Chicago.* Beware your inner chromatic compass: Binding errors of color and motion-direction.
Zhong-Lin Lu, *Ohio State U.* Functions and mechanisms of perceptual learning.
Tom Landauer, *U. Colorado, Boulder.* The new word maturity metric: How words develop their meanings by exposure to language.

Wednesday, February 1: 4:00 – 8:00 pm **Higher-Level Vision II**

Cory Miller, *UCSD.* Responses of marmoset prefrontal cortex neurons during natural vocal communication.
Nicholas Port, *Indiana U.* The development of microsaccades from toddling to retiring.
David Knill, *U. Rochester.* Learning scene statistics for perception and action.
Ben Backus, *SUNY.* Motion from structure.
Deyue Yu, *Ohio State U.* Crowding in peripheral reading.
Bosco Tjan, *USC.* Object identification in the periphery -- a case of mistaken priors.

Thursday, February 2: 4:00 – 8:00 pm **Cognition**

Roger Ratcliff and Gail McKoon, *Ohio State U.* Diffusion decision model assumptions and using the model to map stimulus properties.
Rich Shiffrin, *Indiana U.* Modeling recognition memory with dynamical activation.
Barbara Doshier, *UC Irvine.* Visual working memory and attention.
James Elder, *York U.* Ecological relevance of exogenous attention.
John Tsotsos, *York U.* Revisiting Ullman's visual routines: Towards an executive controller for visual attention.
George Sperling, *UC Irvine.* The computational architecture of visual selective attention: A review.

**Brief Business Meeting

Friday, February 3: 4:00 – 8:00 pm **Friday Miscellany**

Justin Halberda, *Johns Hopkins U.* An ensemble group is selected and processed as a single item.
Xiaoping Hu, *Emory U.* Time-frequency dynamics of brain resting state effective connectivity.
Michael Lee, *UCI.* Two misuses of probability theory in cognitive modeling.
Wolfgang Pauli, *U. Colorado, Boulder.* Changepoint detection versus reinforcement learning.
Holly Jimison, *OHSU.* Big data: The modeling and inference challenges of monitoring health behaviors in the home.
Patricia Cheng, *UCLA.* A causal explanation of functional basic-level categories.

Poster: Feb 2-3. Howard Yang, Peng Sun, Charles Chubb, George Sperling, *UCI.* Deriving the attention filters in two selective attention tasks.

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Tom Busey, *Indiana U.*
Jonye Feldman, *Los Angeles*
Eric Mais, *U. Hawaii*
Bennet Murdock, *U. Toronto*

Katherine Phelps, *U. Colorado, Boulder*
Keith Schneider, *York U.*
Laurie Wilcox, *York U.*