Vision Sciences Society

9th Annual Meeting, May 8-13, 2009
Naples Grande Resort & Club, Naples, Florida

Program

Contents

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T-shirt and tote bag design

Keynote Address

Robert H. Wurtz

Laboratory of Sensorimotor Research
National Eye Institute, NIH, Bethesda, MD

Robert H. Wurtz is a NIH Distinguished Scientist and Chief of the Section on Visuomotor Integration at the National Eye Institute. He is a member of the National Academy of Sciences and the American Academy of Arts and Sciences, and has received many awards. His work is centered on the visual and oculomotor system of the primate brain that controls the generation of rapid or saccadic eye movements, and the use of the monkey as a model of human visual perception and the control of movement. His recent work has concentrated on the inputs to the cerebral cortex that underlie visual attention and the stability of visual perception.

Brain Circuits for Stable Visual Perception

Saturday, May 9, 7:30 pm
Royal Palm Ballroom 4-5

In the 19th century von Helmholtz detailed the need for signals in the brain that provide information about each impending eye movement. He argued that such signals could interact with the visual input from the eye to preserve stable visual perception in spite of the incessant saccadic eye movements that continually displace the image of the visual world on the retina. In the 20th century, Sperry as well as von Holst and Mittelstaedt provided experimental evidence in fish and flies for such signals for the internal monitoring of movement, signals they termed corollary discharge or efference copy, respectively. Experiments in the last decade (reviewed by Sommer and Wurtz, 2008) have established a corollary discharge pathway in the monkey brain that accompanies saccadic eye movements. This corollary activity originates in the superior colliculus and is transmitted to frontal cortex through the major thalamic nucleus related to frontal cortex, the medial dorsal nucleus. The corollary discharge has been demonstrated to contribute to the programming of saccades when visual guidance is not available. It might also provide the internal movement signal invoked by Helmholtz to produce stable visual perception. A specific neuronal mechanism for such stability was proposed by Duhamel, Colby, and Goldberg (1992) based upon their observation that neurons in monkey frontal cortex shifted the location of their maximal sensitivity with each impending saccade. Such shifting receptive fields must depend on input from a corollary discharge, and this is just the input to frontal cortex recently identified. Inactivating the corollary discharge to frontal cortex at its thalamic relay produced a reduction in the shift. This dependence of the shifting receptive fields on an identified corollary discharge provides direct experimental evidence for modulation of visual processing by a signal within the brain related to the generation of movement – an interaction proposed by Helmholtz for maintaining stable visual perception.

Meeting Schedule

Friday, May 8

9:00 am – 8:30 pm	Registration Open	Royal Palm Foyer
1:00 – 3:00 pm	Symposia Session 1	Royal Palm Ballrooms 1-3, 4-5 & 6-8
3:00 – 3:30 pm	Coffee Break	Royal Palm Foyer
3:30 – 5:30 pm	Symposia Session 2	Royal Palm Ballrooms 1-3, 4-5 & 6-8
5:30 – 7:30 pm	Opening Night Reception	Sunset Deck, Vista Deck
6:30 – 9:00 pm	Evening Poster Session	Vista Ballroom

Saturday, May 9

7:30 am – 7:30 pm	Registration Open	Royal Palm Foyer
8:00 – 8:30 am	Coffee	Royal Palm Foyer
8:30 – 10:00 am	Talk Sessions	Royal Palm Ballrooms 1-3 & 4-5
8:30 am – 12:30 pm	Poster Sessions	Royal Palm Ballroom 6-8, Orchid Ballroom, Vista Ballroom
8:30 am – 6:45 pm	Exhibits Open	Orchid Foyer
11:00 am – 12:45 pm	Talk Sessions	Royal Palm Ballrooms 1-3 & 4-5
12:45 – 2:45 pm	Lunch Break	Purchase a lunch at VSS Marketplace and head to the beach!*
1:30 – 2:30 pm	Funding Opportunities in Vision Research at NEI & NIH	Royal Palm Ballroom 1-3
2:45 – 4:15 pm	Talk Sessions	Royal Palm Ballrooms 1-3 & 4-5
2:45 – 6:45 pm	Poster Sessions	Royal Palm Ballroom 6-8, Orchid Ballroom, Vista Ballroom
4:30 – 5:00 pm	Coffee Break	Royal Palm Foyer
5:15 – 7:00 pm	Talk Sessions	Royal Palm Ballrooms 1-3 & 4-5
7:30 – 9:00 pm	Keynote Address and Awards Ceremony	Royal Palm Ballroom 4-5

Sunday, May 10

8:00 – 8:30 am	Coffee	Royal Palm Foyer
8:00 am – 6:45 pm	Registration Open	Royal Palm Foyer
8:30 – 10:00 am	Talk Sessions	Royal Palm Ballrooms 1-3 & 4-5
8:30 am – 12:30 pm	Poster Sessions	Royal Palm Ballroom 6-8, Orchid Ballroom, Vista Ballroom
8:30 am – 6:45 pm	Exhibits Open	Orchid Foyer
11:00 am – 12:45 pm	Talk Sessions	Royal Palm Ballrooms 1-3 & 4-5
12:45 – 2:45 pm	Lunch Break	Purchase a lunch at VSS Marketplace and head to the beach!*
1:00 – 2:30 pm	Python & Vizard User Group Meeting	Royal Palm Ballroom 1-3
2:45 – 4:15 pm	Talk Sessions	Royal Palm Ballrooms 1-3 & 4-5
2:45 – 6:45 pm	Poster Sessions	Royal Palm Ballroom 6-8, Orchid Ballroom, Vista Ballroom
4:30 – 5:00 pm	Coffee Break	Royal Palm Foyer
5:15 – 7:00 pm	Talk Sessions	Royal Palm Ballrooms 1-3 & 4-5
7:00 – 9:00 pm	The 5th Annual Best Visual Illusion Contest	Philharmonic Center for the Arts
10:00 pm – 1:00 am	VVRC-CVS Social	Vista Ballroom & Sunset Deck

Monday, May 11

8:00 – 8:30 am	Coffee	Royal Palm Foyer
8:00 am – 1:45 pm	Registration Open	Royal Palm Foyer
8:30 – 10:00 am	Talk Sessions	Royal Palm Ballrooms 1-3 & 4-5
8:30 am – 12:30 pm	Poster Sessions	Royal Palm Ballroom 6-8, Orchid Ballroom, Vista Ballroom
8:30 am – 1:00 pm	Exhibits Open	Orchid Foyer
11:00 am – 12:45 pm	Talk Sessions	Royal Palm Ballrooms 1-3 & 4-5
1:00 – 1:45 pm	Business Meeting	Royal Palm Ballroom 4-5
6:00 – 8:00 pm	Demo Night Dinner	Sunset Deck & Vista Deck
7:00 – 9:00 pm	Demo Night Demos	Royal Palm Ballroom 4-5 & Acacia Meeting Rooms

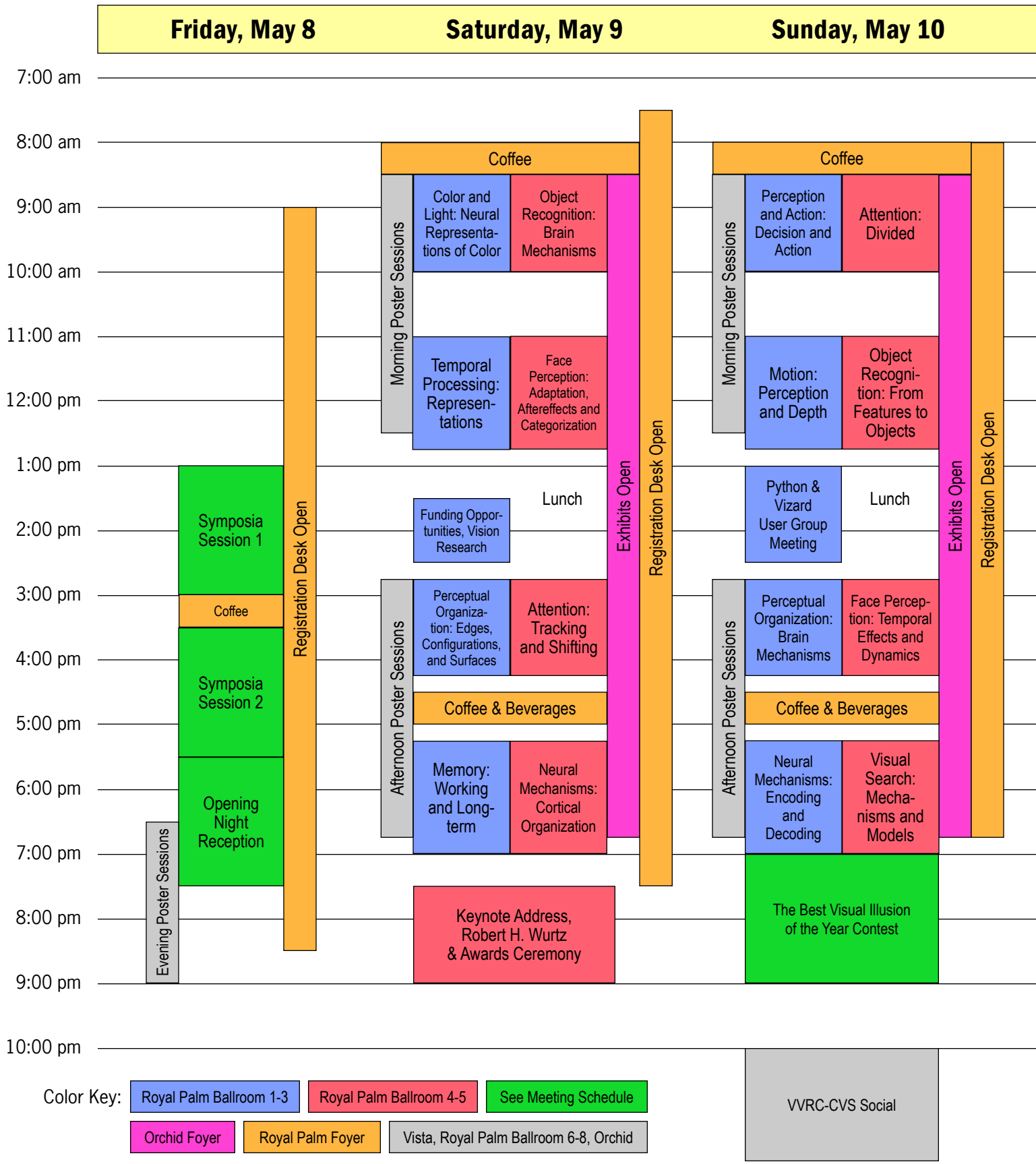
Tuesday, May 12

8:00 – 8:30 am	Coffee	Royal Palm Foyer
8:00 am – 6:45 pm	Registration Open	Royal Palm Foyer
8:30 – 10:00 am	Talk Sessions	Royal Palm Ballrooms 1-3 & 4-5
8:30 am – 12:30 pm	Poster Sessions	Royal Palm Ballroom 6-8, Orchid Ballroom, Vista Ballroom
8:30 am – 6:45 pm	Exhibits Open	Orchid Foyer
11:00 am – 12:45 pm	Talk Sessions	Royal Palm Ballrooms 1-3 & 4-5
12:45 – 2:45 pm	Lunch Break	Purchase a lunch at VSS Marketplace and head to the beach!*
2:45 – 4:30 pm	Talk Sessions	Royal Palm Ballrooms 1-3, & 4-5
2:45 – 6:45 pm	Poster Sessions	Royal Palm Ballroom 6-8, Orchid Ballroom, Vista Ballroom
4:30 – 5:00 pm	Coffee Break	Royal Palm Foyer
5:15 – 7:00 pm	Talk Sessions	Royal Palm Ballrooms 1-3 & 4-5
9:30 pm – 1:30 am	Club Vision Dance Party	Vista Ballroom, Sunset Deck & Vista Deck

Wednesday, May 13

8:00 – 8:30 am	Coffee	Royal Palm Foyer
8:00 am – 12:45 pm	Registration Open	Royal Palm Foyer
8:30 – 10:00 am	Talk Sessions	Royal Palm Ballrooms 1-3 & 4-5
8:30 am – 12:30 pm	Poster Sessions	Royal Palm Ballroom 6-8, Orchid Ballroom, Vista Ballroom
11:00 am – 12:45 pm	Talk Sessions	Royal Palm Ballrooms 1-3 & 4-5
12:45 pm	Meeting Ends	

* Salads, sandwiches, and snacks are available for purchase at the VSS Marketplace in the Aura Bar/Chill-out Lounge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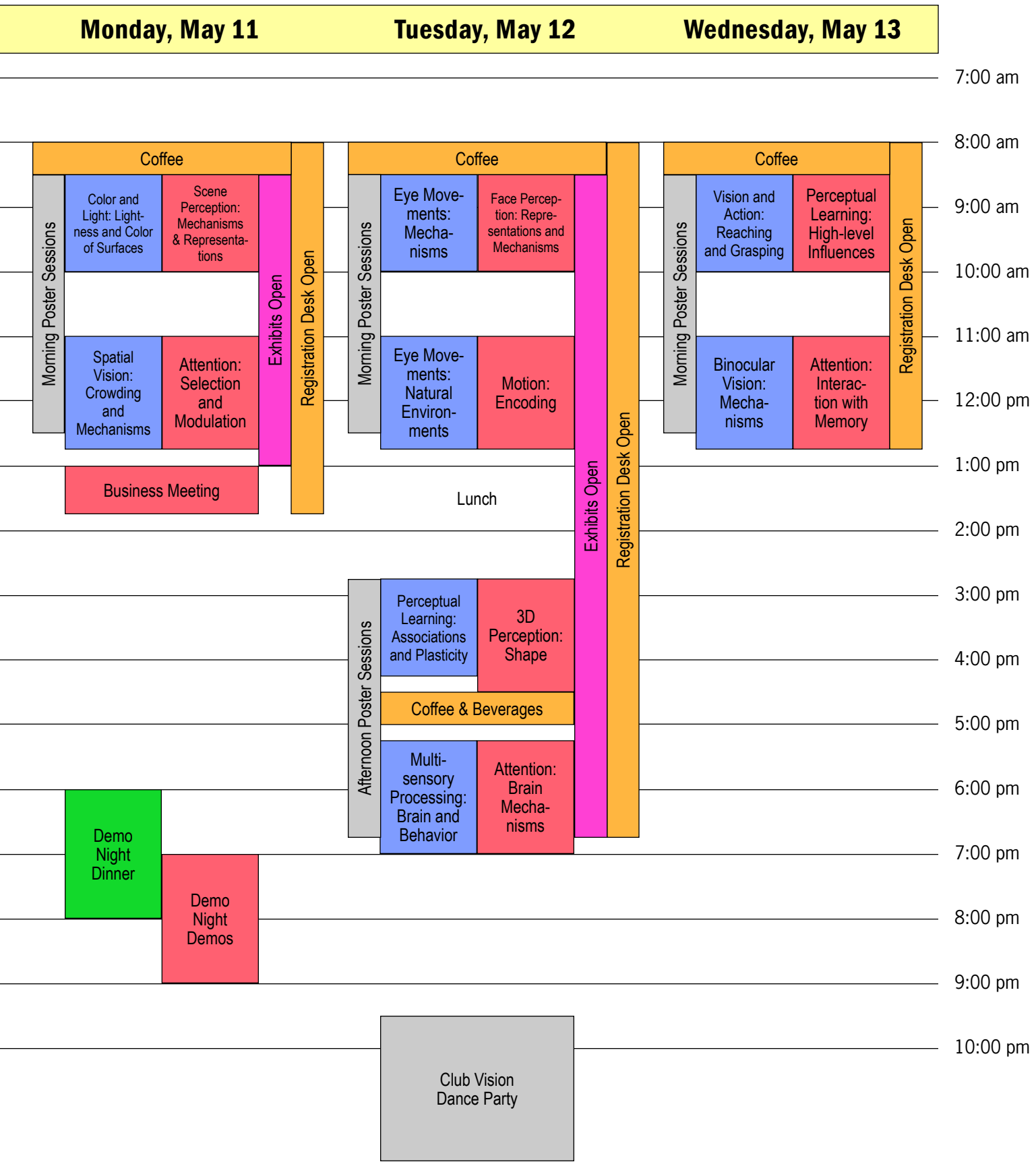
Symposia Session 1
Coffee
Symposia Session 2
Opening Night Reception
Evening Poster Sessions
Registration Desk Open
Coffee
Morning Poster Sessions
Color and Light: Neural Representations of Color
Object Recognition: Brain Mechanisms
Temporal Processing: Representations
Face Perception: Adaptation, Aftereffects and Categorization
Lunch
Funding Opportunities, Vision Research
Afternoon Poster Sessions
Perceptual Organization: Edges, Configurations, and Surfaces
Attention: Tracking and Shifting
Coffee & Beverages
Memory: Working and Long-term
Neural Mechanisms: Cortical Organization
Keynote Address, Robert H. Wurtz & Awards Ceremony
Exhibits Open
Registration Desk Open
Coffee
Morning Poster Sessions
Perception and Action: Decision and Action
Attention: Divided
Motion: Perception and Depth
Object Recognition: From Features to Objects
Lunch
Python & Vizard User Group Meeting
Afternoon Poster Sessions
Perceptual Organization: Brain Mechanisms
Face Perception: Temporal Effects and Dynamics
Coffee & Beverages
Neural Mechanisms: Encoding and Decoding
Visual Search: Mechanisms and Models
The Best Visual Illusion of the Year Contest
Exhibits Open
Registration Desk Open
VVRC-CVS Social
Color Key:
Royal Palm Ballroom 1-3
Royal Palm Ballroom 4-5
See Meeting Schedule
Orchid Foyer
Royal Palm Foyer
Vista, Royal Palm Ballroom 6-8, Orchid


Monday, May 11
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10:00 pm
Coffee
Morning Poster Sessions
Color and Light: Lightness and Color of Surfaces
Scene Perception: Mechanisms & Representations
Spatial Vision: Crowding and Mechanisms
Attention: Selection and Modulation
Exhibits Open
Registration Desk Open
Business Meeting
Coffee
Morning Poster Sessions
Eye Movements: Mechanisms
Face Perception: Representations and Mechanisms
Eye Movements: Natural Environments
Motion: Encoding
Lunch
Exhibits Open
Registration Desk Open
Coffee
Morning Poster Sessions
Vision and Action: Reaching and Grasping
Perceptual Learning: High-level Influences
Binocular Vision: Mechanisms
Attention: Interaction with Memory
Registration Desk Open
Afternoon Poster Sessions
Perceptual Learning: Associations and Plasticity
3D Perception: Shape
Coffee & Beverages
Multisensory Processing: Brain and Behavior
Attention: Brain Mechanisms
Demo Night Dinner
Demo Night Demos
Club Vision Dance Party

Poster Schedule

Poster Setup and Takedown

All poster sessions are held in the Royal Palm Ballrom 6-8 and Orchid Ballroom on the Ballroom level, and Vista Ballroom on the Lobby level. The last three digits of your poster number indicate the number of your poster board.

Posters should be put up at the beginning of a session and taken down at the end. Authors of even numbered posters are expected to be present at their posters during the entire "Even Author Presents" time; and authors of odd numbered posters during the entire "Odd Author Presents" time. Authors may be present longer if desired.

Please be courteous and take down your poster promptly at the end of the session, so that the board is empty when the next presenter arrives to put up his or her poster.

Push pins are available for your use and are located at the Meeting Registration Desk in the Royal Palm foyer.

Friday Afternoon, May 8

Setup: 6:00 – 6:30 pm
Session: 6:30 – 9:00 pm
Even Authors Present: 6:30 – 7:30 pm
Odd Authors Present: 7:30 – 8:30 pm
Room: Vista Ballroom
- Face Perception: Emotion
- Attention: Models
- Eye Movements: Cognitive Mechanisms
- Neural Mechanisms: Visual and Visuomotor Function

Take down: 9:00 – 9:15 pm

Saturday Morning, May 9

Setup: 8:00 – 8:30 am
Session: 8:30 am – 12:30 pm
Even Authors Present: 9:30 – 10:30am
Odd Authors Present: 10:30 – 11:30 am
Room: Royal Palm 6-8
- Motion: Local and Global Processing
- Perceptual Learning: Models and Mechanisms

Room: Orchid Ballroom
- Neural Mechanisms: Receptive Fields
- Perceptual Organization: Contours
- Spatial Vision: Crowding and Peripheral Vision
- Multisensory Processing: Visual and Auditory Perception

Room: Vista Ballroom
- Attention: Capture
- Attention: Temporal Selection and Modulation
- Spatial Vision: Natural Scenes
- Special Populations: Disorders and Disease

Take down: 12:30 – 1:00 pm

Saturday Afternoon, May 9

Setup: 2:00 – 2:45 pm
Session: 2:45 – 6:45 pm
Even Authors Present: 3:45 – 4:45 pm
Odd Authors Present: 4:45 – 5:45 pm
Room: Royal Palm 6-8
- Color and Light: Lightness and Brightness
- Eye Movements: Cognition and Social Cognition

Room: Orchid Ballroom
- Spatial Vision: Mechanisms
- Motion: Biological
- Face Perception: Development and Disorders

Room: Vista Ballroom
- 3D Perception: Shape, Shading and Contours
- Binocular Vision: Depth, Bistability, and Memory
- Attention: Spatial Selection and Modulation
- Visual Search: Attentional Mechanisms

Take down: 6:45 – 7:00 pm

Sunday Morning, May 10

Setup: 8:00 – 8:30 am
Session: 8:30 am – 12:30 pm
Even Authors Present: 9:30 – 10:30am
Odd Authors Present: 10:30 – 11:30 am
Room: Royal Palm 6-8
- Scene Perception: Categorization and Memory
- Face Perception: Wholes, Parts, Configurations and Features

Room: Orchid Ballroom
- Attention: Brain Mechanisms
- Perceptual Organization: Segmentation
- Memory: Visual Learning and Memory
- Object Recognition: Reading

Room: Vista Ballroom
- Vision and Action: Posture, Wayfinding, and Whacking
- Binocular Vision: Brain and Behavior
- Multisensory Processing: Cross-modal Perception

Take down: 12:30 – 1:00 pm

Sunday Afternoon, May 10

Setup: 2:00 – 2:45 pm
Session: 2:45 – 6:45 pm
Even Authors Present: 3:45 – 4:45 pm
Odd Authors Present: 4:45 – 5:45 pm
Room: Royal Palm 6-8
- 3D Perception: Space
- Memory: Working and Short-term Memory

Room: Orchid Ballroom
- Attention: Endogenous and Exogenous
- Object Recognition: Objects and Categories
- Color and Light: Color Appearance

Room: Vista Ballroom
- Motion: Depth and Optic Flow
- Vision and Action: Hand Movements
- Spatial Vision: Adaptation and Masking

Take down: 6:45 – 7:00 pm

Monday Morning, May 11

Setup: 8:00 – 8:30 am
Session: 8:30 am – 12:30 pm
Even Authors Present: 9:30 – 10:30am
Odd Authors Present: 10:30 – 11:30 am
Room: Royal Palm 6-8
- Perceptual Learning: Specificity and Transfer
- Motion: Representations

Room: Orchid Ballroom
- Eye Movements: Pursuit and Fixation
- Attention: Inattention and Blindness
- Attention: Linguistic, Motivational and Affective Factors
- Face Perception: Brain Mechanisms

Room: Vista Ballroom
- Vision and Action: Locomotion
- Vision and Action: Reaching
- Spatial Vision: Mechanisms and Special Populations

Take down: 12:30 – 1:00 pm

Tuesday Morning, May 12

Setup: 8:00 – 8:30 am
Session: 8:30 am – 12:30 pm
Even Authors Present: 9:30 – 10:30am
Odd Authors Present: 10:30 – 11:30 am
Room: Royal Palm 6-8
- Object Recognition: Objects and Visual features
- Binocular Vision: Rivalry and Bistability

Room: Orchid Ballroom
- Attention: Tracking
- Attention: Feature- and Object-based
- Eye Movements: Saccade Selection
- Perceptual Organization: Grouping

Room: Vista Ballroom
- Temporal Processing: Mechanisms
- Perception and Action: Decisions and Frames of Reference
- Visual Search: Context and Attention

Take down: 12:30 – 1:00 pm

Tuesday Afternoon, May 13

Setup: 2:00 – 2:45 pm
Session: 2:45 – 6:45 pm
Even Authors Present: 3:45 – 4:45 pm
Odd Authors Present: 4:45 – 5:45 pm
Room: Royal Palm 6-8
- Face Perception: Inversion and Viewpoint Effects
- Face Perception: Face Space, Categorization and Representation

Room: Orchid Ballroom
- Perceptual Organization: 2D Shape
- 3D Perception: Disparity and Other Depth Cues
- Scene Perception: Spatiotemporal Factors
- Color and Light: Chromatic Mechanisms

Room: Vista Ballroom
- Special Populations: Lifespan Development
- Motion: Mechanisms
- Attention: Interaction with Memory

Take down: 6:45 – 7:00 pm

Wednesday Morning, May 13

Setup: 8:00 – 8:30 am
Session: 8:30 am – 12:30 pm
Even Authors Present: 9:30 – 10:30am
Odd Authors Present: 10:30 – 11:30 am
Room: Royal Palm 6-8
- Neural Mechanisms: Visual Representations
- Face Perception: Experience, Learning and Expertise

Room: Orchid Ballroom
- Attention: Resource Competition
- Eye Movements: Mechanisms
- Visual Search: Mechanisms and Special Populations

Take down: 12:30 – 12:45 pm

Talk Schedule

Saturday, May 9

Time	Royal Palm 1-3	Royal Palm 4-5
8:30 – 10:00 am	Color and Light: Neural Representations of Color	Object Recognition: Brain Mechanisms
11:00 am – 12:45 pm	Temporal Processing: Representations	Face Perception: Adaptation, Aftereffects and Categorization
2:45 – 4:15 pm	Perceptual Organization: Edges, Configurations, and Surfaces	Attention: Tracking and Shifting
5:15 – 7:00 pm	Memory: Working and Long-term	Neural Mechanisms: Cortical Organization

Sunday, May 10

Time	Royal Palm 1-3	Royal Palm 4-5
8:30 – 10:00 am	Perception and Action: Decision and Action	Attention: Divided
11:00 am – 12:45 pm	Motion: Perception and Depth	Object Recognition: From Features to Objects
2:45 – 4:15 pm	Perceptual Organization: Brain Mechanisms	Face Perception: Temporal Effects and Dynamics
5:15 – 7:00 pm	Neural Mechanisms: Encoding and Decoding	Visual Search: Mechanisms and Models

Monday, May 11

Time	Royal Palm 1-3	Royal Palm 4-5
8:30 – 10:00 am	Color and Light: Lightness and Color of Surfaces	Scene Perception: Mechanisms and Representations
11:00 am – 12:45 pm	Spatial Vision: Crowding and Mechanisms	Attention: Selection and Modulation

Tuesday, May 12

Time	Royal Palm 1-3	Royal Palm 4-5
8:30 – 10:00 am	Eye Movements: Mechanisms	Face Perception: Representations and Mechanisms
11:00 am – 12:45 pm	Eye Movements: Natural Environments	Motion: Encoding
2:45 – 4:30 pm	Perceptual Learning: Associations and Plasticity	3D Perception: Shape
5:15 – 7:00 pm	Multisensory Processing: Brain and Behavior	Attention: Brain Mechanisms

Wednesday, May 13

Time	Royal Palm 1-3	Royal Palm 4-5
8:30 – 10:00 am	Vision and Action: Reaching and Grasping	Perceptual Learning: High-level Influences
11:00 am – 12:45 pm	Binocular Vision: Mechanisms	Attention: Interaction with Memory

Speaker Information

The meeting rooms are equipped with a data/video projector and a projection screen. Presentations can be made from your Mac or PC laptop. A technician will be present in each room to handle any technical problems that may arise.

Please arrive at the Ballroom no less than 30 minutes before the start of your session. Presenters are welcome to test their presentations between talk sessions. Please give priority to presenters whose talk is scheduled for the subsequent session.

Young Investigator Award

Dr. Frank Tong

Associate Professor of Psychology, Vanderbilt University

This year's winner of the VSS Young Investigator Award is Frank Tong, Associate Professor of Psychology at Vanderbilt University. In the nine years since receiving his PhD from Harvard, Frank has established himself as one of the most creative, productive young vision scientists in our field. His research artfully blends psychophysics and brain imaging to address important questions about the neural bases of awareness and object recognition. He has published highly influential papers that have been instrumental in shaping current thinking about the neural bases of multistable perception, including binocular rivalry. Moreover, Frank has played a central role in the development and refinement of powerful analytic technique for deriving reliable population signals from fMRI data, signals that can predict perceptual states currently being experienced by an individual. Using these pattern classification techniques, Frank and his students have identified brain areas that contain patterns of neural responses sufficient to support orientation perception, motion perception and working memory.

The YIA award will be presented at the Keynote Address and Awards Ceremony on Saturday, May 9, at 7:30 pm in the Royal Palm Ballroom 4-5.

Abstract Numbering System

Each abstract is assigned a unique 4 to 5 digit number based on when and where it is to be presented. The format of the abstract numbering is DT.RN (where D is the Day, T is the Time, R is the Room and N is the Presentation number).

First Digit - Day	Second Digit - Time Period	Third Digit - Room	Fourth/Fifth Digits - Number
1 Friday	1 Early AM talk session	1 Royal Palm Ballroom 1-3	1, 2, 3... For talks
2 Saturday	2 Late AM talk session	2 Royal Palm Ballroom 4-5	01, 02, 03... For posters
3 Sunday	3 AM poster session	3 Royal Palm Ballroom 6-8	
4 Monday	4 Early PM talk session	4 Orchid Ballroom	
5 Tuesday	5 Late PM talk session	5 Vista Ballroom	
6 Wednesday	6 PM poster session		

Examples:

21.16 Saturday, early AM talk in Royal Palm Ballroom 1-3, 6th talk
36.513 Sunday, PM poster in Vista Ballroom, poster board 513
53.306 Tuesday, AM poster in Royal Royal Palm Ballroom 6-8, poster board 306

Note: Two digits after the period indicates a talk, three digits indicates a poster (and is also the number of the poster board).

7th Annual VSS Dinner and Demo Night

Monday, May 11, 6:00 – 9:00 pm

Dinner: 6:00 – 8:00 pm
Vista Terrace and Sunset Deck

Demos: 7:00 – 9:00 pm
Royal Palm Ballroom 4-5 Ballroom and
Acacia Meeting Rooms

Please join us Monday evening for the 7th Annual VSS Demo Night, a spectacular night of imaginative demos solicited from VSS members, delectable food, and social interaction. This year's dinner theme is Caribbean Night!

The demos highlight the important role of visual displays in vision research and education. This year, Arthur Shapiro and Bart Anderson are co-curators for Demo Night, and Gideon Caplovitz is assistant curator.

The Caribbean-themed buffet dinner will be held on the Sunset Terrace and Vista Deck overlooking the Naples Grande main pool. Demos will be located upstairs on the ballroom level in the Royal 4-5 Ballroom and Acacia Meeting Rooms.

Demo Night is free for all registered VSS attendees. Meal tickets are not required, but you must wear your VSS badge for entry to the Dinner Buffet. Guests and family members of all ages are welcome to attend the demos, but must purchase a ticket for dinner. You can register your guests at any time during the meeting at the VSS Registration Desk located in the Royal Ballroom foyer. At 6:00 pm Monday, a desk will also be set up at the entrance to the dinner in the Vista Ballroom.

Guest prices

Adults: $25
Youth (6-12 years old): $10
Children under 6: free

Immersive Virtual Reality

Bryce Armstrong, Edzard Ulrichs and Matthias Pusch; WorldViz

We will use a 6DOF tracked environment to immerse users in virtual environments. Our goal is to show some of the VSS members experiments to demonstrate the relevance of using VR for vision science research.

Unbound Rivalry

Derek Arnold, Holly Erskine, Warrick Roseboom and Tom Wallis; The University of Queensland

We will demonstrate that exposure to a coherent moving stimulus can induce a dynamic competition for perceptual dominance involving illusory forms signaled by motion streaks and direction-sensitive mechanisms.

LITE Vision Demonstrations

Kenneth Brecher; Boston University

I will present the most recent Project LITE vision demonstrations (including ones not yet posted on the web) – both computer software and new physical objects.

The Bar Cross Ellipse Illusion

Gideon Caplovitz and Peter Tse; Princeton University and Dartmouth College

A quad-stable stimulus leading to drastically different percepts based on differential figure-ground segmentation, assignment and integration of motion sources.

Bypassing V1: Motion through depth from monocular pattern motions

Thaddeus B. Czuba, Bas Rokers, Lawrence K. Cormack and Alex C. Huk; The University of Texas at Austin

We show that percepts of motion through depth are supported by stimuli that effectively bypass significant binocular processing in primary visual cortex (V1).

Helmholtz/Zanforlin illusion

Peter Thompson and Rob Stone; University of York

Asked to make a pile of coins as high as it is wide, subjects make it up to 30% too low. Simple demo with no computer! Interactive for subject. Cheap.

Perceptual Conduits for Attentional Flow: Contour Interpolation Exerts Automatic Effects on Multiple Object Tracking

Brian P. Keane, Everett Mettler, Vicky Tsoi and Phil J. Kellman; UCLA

We explore multiple object tracking in which moving items do or do not form interpolated connections with one another. Our demonstrations show that the ability to track clearly depends on interpolation.

Subjective disappearance of targets induced by flickering illumination

Sung-Ho Kim; Rutgers University

Under flickering illumination, peripherally presented target lines or dots disappear.

Failure of slope constancy

Zhi Li and Frank Durgin; Swarthmore College

Viewed from the top, the downward slope of a hill or ramp appears shallower when standing at the edge and steeper when standing back from the edge. The surface can appear to rotate upward as the observer approaches it.

Growing and Shrinking: The Body-Based Rescaling of Apparent Size

Sally Linkenauger and Jessica Witt; University of Virginia

We will demonstrate that apparent size is judged relative to one's body. Using magnification and minification goggles, we will show this using a newly discovered visual illusion to disrupt the relationship between physical object size and body size.

Marilyn-go-round: the moving hybrid-image

Takao Sato and Kenchi Hosokawa; University of Tokyo

Hybrid-images combine high and low spatial frequency components from two separate images. We remove the low spatial frequency content from hypbrid images by spinning them along a curved orbit. The demo is interactive and amusing.

Motion induces overestimation (MIO)

Maryam Vaziri Pashkam and Arash Afraz; Harvard University

We will demonstrate the motion-induced overestimation illusion. On a rotating spoked disk,as the rotation speed increases, the perceived number of spokes increases.

Binocular shape, unlike binocular space, is perceived veridically

Tadamasa Sawada, Yunfeng Li, Zygmunt Pizlo and Robert M. Steinman; Purdue University

It is widely believed that binocular space perception is inaccurate and unreliable. We will show that this applies only to depth perception, not to the perception of complex 3D shapes. The geometry responsible for this useful accomplishment will be explained.

Dynamic Object Formation: Perceptual Reality Combines the Visible and Recently Visible

Tandra Ghose, Evan Palmer, Brian P. Keane and Phil J. Kellman, UCLA

We demonstrate perceptual completion in dynamically occluded and illusory stimuli. We explore the conditions favoring spatiotemporal completion and demonstrate the effects of component processes leading to object formation, including illusions resulting from non-veridical updating of occluded object position.

The break of the curveball, rolling rolls, and other illusions

Arthur Shapiro; American University

I will demonstrate new visual effects involving "rotation from shading," differences between peripheral and foveal processing, and a variant of hybrid images.

Smooth pursuit suppresses motion processing

Peter Tse; Dartmouth College

When smoothly pursuing a moving fixation spot, real motion in the background is suppressed.

Slant stereomotion from modulation of interocular spatial frequency difference

Christopher Tyler and Lora Likova; Smith-Kettlewell Eye Research Institute

If gratings are presented with an interocular spatial-frequency difference (ISFD), modulating the ISFD over time generates strong percepts of slant stereomotion, even when orientation or velocity differences exclude the use of conventional binocular disparity cues.

Attendee Resources

Airport Transportation

VSS has arranged for discounted bidirectional transportation between Fort Meyers airport and the meeting hotels. Service is provided by Naples Transportation (1-800-592-0848), a professional transportation company, and is available 3 days prior to the start of the VSS meeting (Tuesday, May 5) through 3 days after the close of the meeting (Saturday, May 16), between 6:00 am and 10:00 pm each day.

The one-way VSS fare is $29 per person. Roundtrip purchase is not required. Tickets must be purchased a minimum of 3 days in advance. Individuals from VSS 2009 will be grouped together for transportation.

Transportation drop-offs and pick-ups will include The Naples Grande Resort & Club, the Hilton Naples, the Staybridge Hotel and the Park Shore Resort.

ATM

An ATM is located in the hotel's main lobby.

Baggage Check

Bags can be checked with the Bell hop in the main lobby.

Business Center

The Business Center is located in the Orchid Foyer.

Child Care

Daycare is available through the Naples Grande Kids Club. Half day, full day and evening programs are available. Reservations should be made in advance by calling 239.597.3232, ext. 5612.

Morning Session: 8:30 am – 1:00 pm

Morning session includes a trip through the winding mangrove forest for a visit to the secluded beach, a variety of activities and lunch at the beach. Cost is $44 per child.

Afternoon Session: 1:00 pm – 4:00 pm

Afternoon session includes swimming and activities at the Mangrove Mountain Pool, arts and crafts and a tasty treat. Bring a swimsuit for the afternoon session. Cost is $39 per child.

Full Day: 8:30 am – 4:00 pm

Cost is $69 per child.

Kids Night Out: 6:00 – 9:00 pm

Kids Night Out offers a themed evening party for kids 4-12, including dinner, games, activities and a movie. Cost is $49 per child.

Kids Club is available on the following days:

Friday, May 8

Afternoon session, 1:00 – 4:00 pm
Kids Night Out, 6:00 – 9:00 pm
Note: The Evening Poster Session and Reception is 5:30 – 9:00 pm

Saturday, May 9

Morning session, 8:30 am – 1:00 pm
Afternoon session, 1:00 – 4:00 pm
Full Day, 8:30 am – 4:00 pm
Kids Night Out, 6:00 – 9:00 pm
Note: The Keynote Address and Awards Ceremony is 7:30 – 9:00 pm

Sunday, May 10

Morning session, 8:30 am – 1:00 pm
Afternoon session, 1:00 – 4:00 pm
Full Day, 8:30 am – 4:00 pm

Monday, May 11

Morning session, 8:30 am – 1:00 pm

Tuesday, May 12

Morning session, 8:30 am – 1:00 pm
Afternoon session, 1:00 – 4:00 pm
Full Day, 8:30 am – 4:00 pm

Wednesday, May 13

Morning session, 8:30 am – 1:00 pm

Copying and Printing

Copying and printing can be done at the Hyatt Business Center, located near the reception desk in the upper lobby.

The nearest FedEx Kinko's is approximately 2.5 miles away at 890 Neapolitan Way (cross street Tamiami Trail).

A printer will be available in the Cyber Vision Internet Café located in the Banyan 1-2 meeting room.

Food Service

Complimentary coffee and tea will be available each morning in the Royal Palm Foyer. Coffee, tea, lemonade and sodas will also be served each afternoon between afternoon talk sessions.

The VSS schedule gives a generous two-hour lunch period to take advantage of the beautiful surroundings and amenities of the Naples Grande Resort. All Naples Grande facilities are open to all VSS attendees and their guests. Grab a lunch and walk down the path through the natural mangrove estuary to enjoy a break at the beach.

VSS Marketplace

The VSS Marketplace, located in the Aura Bar/Chill-out Lounge on the Lobby level, offers a selection of reasonably-priced breakfast, lunch and snack items. All items are between $1 and $6.

Open 11:00 am – 3:00 pm on Friday, May 8, 7:30 am – 3:00 pm on Saturday, May 9 - Tuesday, May 12, and 7:30 am – 9:00 am on Wednesday, May 13

Menu Sampling: Chips and fruit, $1; Granola bars, soup of the day, pastries, $2; Small salads, smoothies, $4; Large salads, specialty sandwiches, $6

Spressi

Located in the resort lobby, offering a selection of hot coffee drinks and teas, light breakfast and lunch fare to go. Open 6:00 am – 9:00 pm

Paradise Grill

Located at the beach, serving salads, sandwiches, snacks and refreshing beverages. Open 11:00 am – 5:00 pm for food, and 11:00 am to sunset for beverages.

Palm Terrace Pool Bar & Grill

Informal poolside bar serving salads, sandwiches, hamburgers and snacks. Open 11:00 am – 5:00 pm for food, and 11:00 am – 6:00 pm for beverages.

Aura Restaurant

Located in the resort lobby, featuring innovative and sumptuous menus for breakfast, lunch and dinner. Breakfast buffet, $15. Open 7:00 – 11:00 am for breakfast (Saturday and Sunday till 12:00 pm). Open 11:30 am – 2:30 pm for lunch (Open at 12:00 pm on Sunday). Open 6:00 – 10:00 pm for dinner.

Aura Bar

Open 12:00 pm – 12:00 am.

Guests

Guests are allowed complimentary entry into one VSS session (for the purposes of seeing the poster or talk of the person they are a guest of).

Guests are welcome at all social functions (Club Vision, Friday Night Reception and Demo Night). There are the following fees for guests to eat at Demo Night: Adults $25; Youth 6-12 $10; Children under 6 free.

Guests must register at the VSS Registration Desk upon arrival and must be accompanied by the VSS attendee. Guests must wear a badge for entrance into the session they are attending and for social events as well.

Internet Access

VSS provides free wired and wireless Internet access in the Cyber Vision Internet Café located in the Banyan 1-2 meeting room located on the Ballroom level. A limited number of laptop compters will also be available for those who did not bring their own computers.

Free wireless Internet access is provided by the Naples Grande Resort in the lobby and restaurant areas of the hotel. Internet access can be purchased in your hotel room for $10.95 per day. Internet access is not provided in the poster and talk meeting rooms.

Lost and Found

Lost and found is located at the Registration Desk in the Royal Palm Foyer.

Message Center

Messages for registrants can be left and retrieved at the Registration Desk. A bulletin board will be available in the Royal Palm Foyer for announcements and job postings.

Parking

Complimentary self-parking is available inside the garage of the Naples Grande Resort. Turn right off of the main entrance driveway, then look for the parking garage entrance on your left. Overflow parking is available on Seagate Drive.

Pool & Beach

All hotel facilities accessible without a room key are available to all VSS attendees and their guests. Clam Pass beach is a public beach available to everyone. Free electric carts run continuously from the hotel to the beach and back.

Shipping

To ship your poster or other items home from the meeting ask for the Concierge at the front desk of the Naples Grande.

VSS Evening Trolley

New this year, an evening trolley will run between the Naples Grande Resort and downtown Naples (with several stops in between). The trolley is complimentary to VSS attendees and will run approximately every 30 minutes from Saturday, May 9, through Tuesday, May 12. A schedule and map can be found in your tote bag or you can pick up a copy at the Registration Desk. Selected resaurants are offering a 10% discount to VSS attendees. You must wear your badge to receive free trolley transportation and restaurant discounts.

How to Contact Us

If you need to reach VSS meeting personnel while at the meeting, call ext. 6088 from a house phone, or from outside the hotel, call 239-597-3232, ext. 6088.

Exhibitors

VSS recognizes the following companies who are exhibiting at VSS 2009. Thank you for your participation and support.

Exhibit Hours

Saturday, May 9, 8:30 am – 6:45 pm
Sunday, May 10, 8:30 am – 6:45 pm
Monday, May 11, 8:30 am – 1:00 pm
Tuesday, May 12, 8:30 am – 6:45 pm

All exhibits are located in the Orchid Foyer.

Arrington Research, Inc.

Booth 7

230 Hz *ViewPoint EyeTracker*® systems from Arrington Research are now shipping. All systems include a Software Developers Kit (SDK), real-time Ethernet communication, built-in stimulus presentation, post-hoc data analysis tools, a MATLAB toolbox, many other 3rd Party product interfaces and examples. Great for both human and non-human primates and can be provided with Analog and TTL communication to ensure seamless communication with your existing equipment. *ViewPoint EyeTracker*® systems are the easiest and best value available and include light-weight head mounted, HMD and head fixed systems. Arrington Research has been providing reliable affordable eye trackers for the research market worldwide for almost 15 years.

Dimensional Imaging

Booth 6

Dimensional Imaging supplies high definition DI3D(tm) 3D surface image capture and 4D facial performance capture systems. DI3D(tm) 3D capture systems use an array of digital stills cameras at up to 21 mega-pixels to instantly capture the highest definition 3D images available. 4D systems capture full color hi-res facial performance at up to 60fps without markers, make-up or structured light and export to C3D and other formats. Both type of system are already in use at leading visual perception research centres. www.di3d.com

The MIT Press

Booth 11

The MIT Press publishes many books and journals dedicated to the vision sciences, visual neuroscience, cognitive science, perception and related fields. Please visit our booth to receive a 30% discount on our newest and most relative titles.

Motion Imaging Corporation

Booth 3

Motion Imaging Corporation (MIC) offers high-performance, cost effective and easy-to-use tracking systems. We do this by integrating software and hardware to create "World Class" digital imaging and motion analysis systems. Our tracking systems include: 3D motion analysis trackers, head trackers, markerless trackers and eye trackers.

Oxford University Press

Booth 2

Please visit our booth, where you can save 20% off all of Oxford University Press titles, including McCloskey: Visual Reflections, Carey: Origin of Concepts, Luck: Visual Memory, Shipley: Understanding Events, Wright: Orienting of Attention, Howard: Seeing in Depth, Bachmann: Experimental Phenomena of Consciousness, Peterson: In the Mind's Eye, Haggard: Sensorimotor Foundations of Higher Cognition, Driver: Mental Processes in the Human Brain, and many more.

Sensics, Inc.

Booth 5

Sensics offers lightweight professional head-mounted displays that combine panoramic field of view, high resolution and comfort. The unique Sensics technology delivers stunning image quality, unmatched immersion and realism, and is delivered either as lightweight, stereoscopic head-mounted displays, or as ultra-light display modules suitable for custom use. Commonly-used Sensics head-mounted displays offer a field of view of 120x45, 1920x1080 pixel resolution and are compatible with most motion and eye tracking systems. Higher-end models are also available. The level of immersion, field of view and resolution offered by Sensics products have made them the research tool of choice in leading universities worldwide.

SR Research Ltd.

Booth 13

SR Research, makers of the EyeLink Hi-Speed eye tracker line, have been developing advanced eye tracking technologies since 1992. Please visit our website at http://www.sr-research.com for details on our eye tracking hardware and software product range.

SensoMotoric Instruments: Eye & Gaze Tracking

Booth 4

SMI designs advanced video eye tracking systems that combine ease of use and flexibility with advanced technology. SMI products offer the ability to measure gaze position, saccades, fixations, pupil size, torsion, etc. This includes fully remote systems, binocular high-speed/high-precision, and fMRI/MEG compatible systems. Experiment Center 360° continues to serve researchers, corporations and consultants worldwide by offering a simple solution to stimulus presentation, data acquisition and analysis.

VPixx Technologies Inc.

Booth 8

VPixx Technologies welcomes the vision community to VSS 2009, and is excited to showcase our new DATAPixx product. The DATAPixx is an essential realtime hardware toolbox containing solutions to many of the technical challenges associated with stimulus presentation and data acquisition. DATAPixx features dual synchronized video outputs with 16-bit video DACs for presenting low-contrast stimuli, 16 simultaneously sampled ADC channels, 4 DAC outputs, stereo audio I/O, and digital I/O for triggers and response boxes. All data I/O is hardware synchronized to video refresh with microsecond precision! Visit our booth to discuss how VPixx Technologies can become your vision science solution.

Sinauer Associates, Inc.

Booth 12

Founded in 1969, Sinauer Associates, Inc. publishes college-level textbooks and educational multimedia in biology, psychology, neuroscience, and allied disciplines. The company strives to work with talented and knowledgeable authors, to create books and media that are beautifully designed and produced, and to communicate effectively with each title's intended audience.

Smart Eye AB

Booth 1

Smart Eye Pro has become one of the most advanced and easy to use eye tracking systems available today. Within a couple of seconds it is ready to deliver more than 200 different values in real time. With its flexible setup it can be used in any application were you need a remote eye tracking system. Smart Eye Pro gives you more than 200 degrees of visual field with a 6 camera setup and can be used in any lightning conditions. With its open architecture it's easy to do integration with other applications such as EGI's Net Station and E-prime for EEG measurements.

Tobii Technology

Booth 10

Tobii Technology is a world leader in hardware and software solutions for eye- tracking. Our products are used by researchers in developmental psychology, HCI, cognitive psychology, ophthalmology, neurophysiology, reading studies, usability and marketing research, and by disabled people as a primary way to communicate. Our remote eye tracking is non-intrusive and user friendly. We do not use head restraints or wearable devices. By not interfering with participants through restraints, our systems are able to capture a more natural response from test participants. Tobii Technology is based in Stockholm, Sweden, with branches in the US, Germany and Japan. Visit www.tobii.com.

WorldViz

Booth 9

WorldViz is an industry leader in interactive virtual reality solutions. The company's flagship products are VIZARD, the VR communities favored interactive 3D content creation software, and PPT X4, the most cost effective wide-area tracking system currently available. WorldViz provides high quality, low-cost immersive 3D products to researchers, educators, designers, manufacturers, and other professionals, integrating all common VR products on the market and delivering complete turnkey solutions.

Travel Awards

Elsevier/Vision Research Travel Awards

VSS congratulates this year's recipients of the 2009 Elsevier/Vision Research Travel Award. The Travel Awards will be presented at the Keynote Address and Awards Ceremony on Saturday, May 9, at 7:30 pm in Royal Palm Ballroom 4-5.

Tracey Brandwood
Cardiff University, School of Psychology
Advisor: Simon Rushton

Jason Fischer
University of California Davis,
Center for Mind and Brain and Department of Psychology
Advisor: David Whitney

Stephenie Harrison
Vanderbilt University
Advisor: Frank Tong

Elizabeth Huber
University of Washington
Advisor: Ione Fine

Farhan Khawaja
McGill University Montreal Neurological Institute
Advisor: Christopher Pack

Jeffrey Lin
University of Washington, Department of Psychology
Advisors: Geoffrey Boynton, Scott Murray

Kyle Mathewson
University of Illinois at Urbana-Champaign,
Beckman Institute for Advanced Science and Technology
Advisors: Gabriele Gratton, Monica Fabiani

Vani Pariyadath
Baylor College of Medicine
Advisor: David M. Eagleman

Joshua Susskind
University of Toronto, Department of Psychology
Advisor: Adam K. Anderson

Kevin Weiner
Stanford University
Advisor: Kalanit Grill-Spector

Krista Ehinger
Massachusetts Institute of Technology,
Department of Brain and Cognitive Sciences
Advisor: Aude Oliva

Tao Gao
Yale University
Advisor: Brian Scholl

Robert Held
UCSF / UC Berkeley,
Joint Graduate Group in Bioengineering
Advisor: Marty Banks

Walter Jermakowicz
Vanderbilt Vision Research Center
Advisor: Vivien Casagrande

Maria Lev
Tel-Aviv University
Advisor: Uri Polat

Tomer Livne
Weizmann Institute of Science
Advisor: Dov Sagi

Marieke Mur
Maastricht University,
Department of Cognitive Neuroscience
Advisor: Nikolaus Kriegeskorte

Karen Schloss
University of California Berkeley,
Department of Psychology
Advisor: Stephen E. Palmer

Katie Wagner
University of California, San Diego
Advisor: Karen Dobkins

Mariko Yamaguchi
Johns Hopkins University
Advisor: Lisa Feigenson

Satellite Events

Funding Opportunities in Vision Research

Saturday, May 9, 1:30 – 2:30 pm, Royal Ballroom 1-3

Michael Oberdorfor, National Eye Institute/NIH/HHS

Michael Oberdorfor of the National Eye Institute will give a brief presentation and answer questions on current funding opportunities in vision research at the National Eye Institute and the NIH. Bring your questions!

Python & Vizard User Group Meeting

Sunday, May 10, 1:00 – 2:30 pm, Royal Ballroom 1-3

Organizer: Ben Backus, SUNY

Many psychophysicists and neuroscientists have migrated to Python as a platform for conducting experiments and for data analysis. Python is extensible like Matlab, has a large user base, comes pre-installed on many systems, and is widely taught as a first programming language. Unlike Matlab, Python is open source and freely available. We will hear from adopters about their experience using open-source Python tools (e.g. Vision Egg, PsychoPy) and commercial Python-based packages that add significant functionality (e.g. Vizard). During discussion we will share tips and identify issues of importance to users.

The Best Visual Illusion of the Year Contest

Sunday, May 10, 7:00 – 9:00 pm, Naples Philharmonic Center for the Arts

Organizer: Susana Martinez-Conde, Neural Correlate Society

The Best Visual Illusion of the Year Contest is a celebration of the ingenuity and creativity of the world's premier visual illusion research community. Contestants from all around the world have submitted novel visual illusions (unpublished or published no earlier than 2008) and an international panel of judges has rated them and narrowed them to the Top Ten. At the Contest Gala at the Naples Philharmonic Center for the Arts, the top ten illusionists will present their creations and attendees of the event (that means you!) will vote to pick the Top Three Winners! The 2009 Contest Gala is hosted by Peter Thompson. For more information, go to www.neuralcorrelate.com.

VVRC-CVS Social at VSS

Sunday, May 10, 10:00 pm – 1:00 am, Vista Ballroom and Sunset Deck

Organizers: Duje Tadin, University of Rochester and Jeff Schall, Vanderbilt University

Continuing the long tradition of social events organized by the University of Rochester's Center for Visual Science (CVS) and the Vanderbilt Vision Research Center (VVRC), we invite all VSS attendees to the VVRC-CVS social at VSS. The event will be held on Sunday, May 10th from 10pm to 1am in the Vista Ballroom at the Naples Grande Resort. First 150 guests will receive a free drink ticket.

Member-Initiated Symposia

Symposium summaries are presented below. See the Abstracts book for the full text of each presentation. Pre-registration is not necessary to attend a symposium, but rooms will fill up quickly, so plan to arrive early.

Schedule Overview

Friday, May 8, 1:00 – 3:00 pm

S1 Common Mechanisms in Time and Space Perception, Royal Palm Ballroom 1-3

S2 ARVO@VSS: Advances in Understanding the Structure and and Function of the Retina, Royal Palm Ballroom 4-5

S3 Is number visual? Is vision numerical? Investigating the relationship between visual representations and the property of magnitude, Royal Palm Ballroom 6-8

Friday, May 8, 3:30 – 5:30 pm

S4 Retinotopic and Non-retinotopic Information Representation and Processing in Human Vision, Royal Palm Ballroom 1-3

S5 Dynamic Processes in Vision, Royal Palm Ballroom 4-5

S6 Modern Approaches to Modeling Visual Data, Royal Palm Ballroom 6-8

S1

Common Mechanisms in Time and Space Perception

Friday, May 9, 1:00 – 3:00 pm, Royal Palm Ballroom 1-3

Organizer: David Eagleman (Baylor College of Medicine)

Presenters: David Eagleman (Baylor College of Medicine), Concetta Morrone (Università di Pisa, Pisa, Italy), Jonathan Kennedy (University of Cardiff), Alex Holcombe (University of Sydney)

Symposium Summary

Most of the actions we carry out on a daily basis require timing on the scale of tens to hundreds of milliseconds. We must judge time to speak, to walk, to predict the interval between our actions and their effects, to determine causality and to decode information from our sensory receptors. However, the neural bases of time perception are largely unknown. Scattered confederacies of investigators have been interested in time for decades, but only in the past few years have new techniques been applied to old problems. Experimental psychology is discovering how animals perceive and encode temporal intervals, while physiology, fMRI and EEG unmask how neurons and brain regions underlie these computations in time. This symposium will capitalize on new breakthroughs, outlining the emerging picture and highlighting the remaining confusions about time in the brain. How do we encode and decode temporal information? How is information coming into different brain regions at different times synchronized? How plastic is time perception? How is it related to space perception? The experimental work of the speakers in this symposium will be shored together to understand how neural signals in different brain regions come together for a temporally unified picture of the world, and how this is related to the mechanisms of space perception. The speakers in this symposium are engaged in experiments at complementary levels of exploring sub-second timing and its relation to space.

Presentations

A neural model for temporal order judgments and their active recalibration: a common mechanism for space and time?
David M. Eagleman, Mingbo Cai, Chess Stetson

Space-time in the brain
Concetta Morrone, David Burr

Adaptation to space and to time
Jonathan Kennedy, M.J. Buehner, S.K. Rushton

A temporal limit on judgments of the position of a moving object
Alex Holcombe, Daniel Linares, Alex L. White

S2

ARVO@VSS: Advances in Understanding the Structure and Function of the Retina

Friday, May 9, 1:00 – 3:00 pm, Royal Palm Ballroom 4-5

Organizer: Donald Hood (Columbia University)

Presenters: Dennis Dacey (University of Washington), Paul R Martin (National Vision Research Institute of Australia & Department of Optometry and Vision Sciences & University of Melbourne, Australia.), Austin Roorda (University of California, Berkeley), Donald C Hood (Columbia University)

Symposium Summary

This symposium was designed in conjunction with Steve Shevell to bring the latest advances presented at ARVO to the VSS audience. There will be four talks covering the following topics. I will moderate it and speak last on. "Advances in structural imaging of the human retina." Before me the speakers and topics will be: D. Darcy (Advances in retinal anatomy); P. Martin (Advances in retinal physiology); and A. Roorda (Advances in optical imaging of the human retina). The speakers are all experienced researchers and lectures use to speaking to diverse audiences. Thus the level should be appropriate for all attendees at VSS from students to experts in vision or cognition.

Presentations

Advances and challenges in understanding the normal retina
Dennis Dacey

Advances in understanding circuits serving colour vision
Paul R Martin, Ulrike Grunert, Sammy CS Lee, Patricia R Jusuf

Advances in optical imaging of the human retina
Austin Roorda

Advances in structural imaging of the human retina
Donald C Hood

S3

Is number visual? Is vision numerical? Investigating the relationship between visual representations and the property of magnitude

Friday, May 9, 1:00 – 3:00 pm, Royal Palm Ballroom 6-8

Organizer: Michael C. Frank (Massachusetts Institute of Technology)

Presenters: David Burr (Dipartimento di Psicologia, Università Degli Studi di Firenze and Department of Psychology, University of Western Australia), Michael C. Frank (Massachusetts Institute of Technology), Steven Franconeri (Northwestern University), David Barner (University of California, San Diego), Justin Halberda (Johns Hopkins University)

Symposium Summary

The ability to manipulate exact numbers is a signature human achievement, supporting activities like building bridges, designing computers, and conducting economic transactions. Underlying this ability and supporting its acquisition is an evolutionarily-conserved mechanism for the manipulation of approximate quantity: the analog magnitude system. The behavioral and neural signatures of magnitude representations have been extensively characterized but how these representations interact with other aspects of cognitive and visual processing is still largely unknown. Do magnitude features attach to objects, scenes, or surfaces? Is approximate magnitude representation maintained even for sets for which exact quantity is known? Is magnitude estimation ability altered by experience?

The goal of our symposium is to look for answers to these questions by asking both how number is integrated into visual processing and how visual processing in turn forms a basis for the acquisition and processing of exact number. We address these questions through talks on three issues: 1) the basic psychophysical properties of numerical representations (Halberda, Burr), 2) how visual mechanisms integrate representations of number (Franconeri & Alvarez), and 3) how these representations support exact computation, both in standard linguistic representations (Frank) and via alternative representations (Barner).

The issues addressed by our symposium have been a focus of intense recent interest. Within the last four years there have been a wide variety of high-profile reports from developmental, neuroscientific, comparative, and cross-linguistic/cross-cultural studies of number. Research on number is one of the fastest moving fields in cognitive science, due both to the well-defined questions that motivate research in this field and to the wide variety of methods that can be brought to bear on these questions.

The target audience of our symposium is a broad group of vision scientists, both students and faculty, who are interested in connecting serious vision science with cognitive issues of broad relevance to a wide range of communities in psychology, neuroscience, and education. In addition, the study of number provides an opportunity to link innovations in vision research methods—including psychophysical-style experimental designs, precise neuroimaging methods, and detailed computational data analysis—with deep cognitive questions about the nature of human knowledge. We anticipate that attendees of our symposium will come away with a good grasp of the current state of the art and the outstanding issues in the interface of visual and numerical processing.

Presentations

A visual sense of number
David Burr

Language as a link between exact number and approximate magnitude
Michael C. Frank

Rapid enumeration is based on a segmented visual scene
Steve Franconeri, George Alvarez

Constructing exact number approximately: a case study of mental abacus representations
David Barner

An interface between vision and numerical cognition
Justin Halberda

S4

Retinotopic and Non-retinotopic Information Representation and Processing in Human Vision

Friday, May 8, 3:30 – 5:30 pm, Royal Palm Ballroom 1-3

Organizers: Haluk Ogmen (University of Houston) and Michael H. Herzog (Laboratory of Psychophysics, BMI, EPFL, Switzerland)

Presenters: Doug Crawford (Centre for Vision Research, York University, Toronto, Ontario, Canada), David Melcher (Center for Mind/Brain Sciences and Department of Cognitive Sciences University of Trento, Italy), Patrick Cavanagh (LPP, Université Paris Descartes, Paris, France), Shin'ya Nishida (NTT Communication Science Labs, Atsugi, Japan), Michael H. Herzog (Laboratory of Psychophysics, BMI, EPFL, Switzerland)

Symposium Summary

Due to the movements of the eyes and those of the objects in the environment, natural vision is highly dynamic. An understanding of how the visual system can cope with such complex inputs requires an understanding of reference frames, used in the computations of various stimulus attributes. It is well known that the early visual system has a retinotopic organization. It is generally thought that the retinotopic organization of the early visual system is insufficient to support the fusion of visual images viewed at different eye positions. Moreover, metacontrast masking and anorthoscopic perception show that a retinotopic image is neither sufficient nor necessary for the perception of spatially extended form. How retinotopic representations are transformed into more complex non-retinotopic representations has been long-standing and often controversial question. The classical paradigm to study this question has been the study of memory across eye movements. As we shift our gaze from one fixation to another one, the retinotopic representation of the environment undergoes drastic shifts, yet phenomenally our environment appears stable. How is this phenomenal stability achieved? Does the visual system integrate information across eye movements and if so how? A variety of theories ranging from purely retinotopic representations without information integration to detailed spatiotopic representations with point-by-point information integration have been proposed. Talks in this symposium (Crawford, Melcher, Cavanagh) will address the nature of trans-saccadic memory, the role of extra-retinal signals, retinotopic, spatiotopic, and objectopic representations for information processing and integration during and across eye

movements. In addition to the challenge posed by eye movements on purely retinotopic representations, recent studies suggest that, even under steady fixation, computation of moving form requires non-retinotopic representations. This is because objects in the environment often move with complex trajectories and do not stimulate sufficiently retinotopically anchored receptive fields. Moreover, occlusions can "blank out" retinotopic information for a significant time period. These failures to activate sufficiently retinotopically anchored neurons, in turn, suggest that some form of non-retinotopic information analysis and integration should take place. Talks in this symposium (Nishida, Herzog) will present recent findings that show how shape and color information for moving objects can be integrated according to non-retinotopic reference frames. Taken together, the talks at the symposium aim to provide a recent perspective to the fundamental problem of reference frames utilized by the visual system and present techniques to study these representations during both eye movement and fixation periods. The recent convergence of a variety of techniques and stimulus paradigms in elucidating the roles of non-retinotopic representations provides timeliness for the proposed symposium. Since non-retinotopic representations have implications for a broad range of visual functions, we expect our symposium to be of interest to the general VSS audience including students and faculty.

Presentations

Cortical Mechanisms for Trans-Saccadic Memory of Multiple Objects
Doug Crawford, Steven Prime

Trans-Saccadic Perception: "Object-otopy" across Space and Time
David Melcher

Spatiotopic Apparent Motion
Patrick Cavanagh, Martin Szinte

Trajectory Integration of Shape and Color of Moving Object
Shin'ya Nishida, Masahiko Terao, Junji Watanabe

A Litmus Test for Retino- vs. Non-retinotopic Processing
Michael Herzog, Marc Boi, Thomas Otto, Haluk Ogmen

S5
Dynamic Processes in Vision

Friday, May 9, 3:30 – 5:30 pm, Royal Palm Ballroom 4-5

Organizer: Jonathan D. Victor (Weill Medical College of Cornell University)

Presenters: Sheila Nirenberg (Dept. of Physiology and Biophysics, Weill Medical College of Cornell University), Diego Contreras (Dept. of Neuroscience, University of Pennsylvania School of Medicine), Charles E. Connor (Dept. of Neuroscience, The Johns Hopkins University School of Medicine), Jeffrey D. Schall (Department of Psychology, Vanderbilt University)

Symposium Summary

The theme of the symposium is the importance of analyzing the time course of neural activity for understanding behavior. Given the very obviously spatial nature of vision, it is often tempting to ignore dynamics, and to focus on spatial processing and maps. As the speakers in this symposium will show, dynamics are in fact crucial: even for processes that appear to be intrinsically spatial, the underlying mechanism often resides in the time course of neural activity. The symposium brings together prominent scientists who will present recent studies that exemplify this unifying theme. Their topics will cover the spectrum of VSS, both anatomically and functionally (retinal ganglion cell population coding, striate cortical mechanisms of contrast sensitivity regulation, extrastriate cortical analysis of shape, and frontal and collicular gaze control mechanisms). Their work utilizes sophisticated physiological techniques, ranging from large-scale multineuronal ex-vivo recording to intracellular in vivo recording, and employs a breadth of analytical approaches, ranging from information theory to dynamical systems.

Because of the mechanistic importance of dynamics and the broad range of the specific topics and approaches, it is anticipated that the symposium will be of interest to physiologists and non-physiologists alike, and that many VSS members will find specific relevance to their own research.

Presentations

How neural systems adjust to different environments: an intriguing role for gap junction coupling
Sheila Nirenberg

Cortical network dynamics and response gain
Diego Contreras

Dynamic integration of object structure information in primate visual cortex
Charles E. Connor

Timing of selection for the guidance of gaze
Jeffrey D. Schall

S6
Modern Approaches to Modeling Visual Data

Friday, May 9, 3:30 – 5:30 pm, Royal Palm Ballroom 6-8

Organizer: Kenneth Knoblauch (Inserm, U846, Stem Cell and Brain Research Institute, Bron, France)

Presenters: Kenneth Knoblauch (Inserm, U846, Bron, France), David H. Foster (University of Manchester, UK), Jakob H Macke (Max-Planck-Institut für biologische Kybernetik, Tübingen), Felix A. Wichmann (Technische Universität Berlin & Bernstein Center for Computational Neuroscience Berlin, Germany), Laurence T. Maloney (NYU)

Symposium Summary

A key step in vision research is comparison of experimental data to models intended to predict the data. Until recently, limitations on computer power and lack of availability of appropriate software meant that the researcher's tool kit was limited to a few generic techniques such as fitting individual psychometric functions. Use of these models entails assumptions such as the exact form of the psychometric function that are rarely tested. It is not always obvious how to compare competing models, to show that one describes the data better than another or to estimate what percentage of 'variability' in the responses of the observers is really captured by the model. Limitations on the models that researchers are able to fit translate into limitations on the questions they can ask and, ultimately, the perceptual phenomena that can be understood. Because of recent advances in statistical algorithms and the increased computer power available to all researchers, it is now possible to make use of a wide range of computer-intensive para-

metric and nonparametric approaches based on modern statistical methods. These approaches allow the experimenter to make more efficient use of perceptual data, to fit a wider range of perceptual data, to avoid unwarranted assumptions, and potentially to consider more complex experimental designs with the assurance that the resulting data can be analyzed. Researchers are likely familiar with nonparametric resampling methods such as bootstrapping (Efron, 1979; Efron & Tibshirani, 1993). We review a wider range of recent developments in statistics in the past twenty years including results from the machine learning and model selection literatures. Knoblauch introduces the symposium and describes how a wide range of psychophysical procedures (including fitting psychophysical functions, estimating classification images, and estimating the parameters of signal detection theory) share a common mathematical structure that can be readily addressed by modern statistical approaches. He also shows how to extend these methods to model more complex experimental designs and also discusses modern approaches to smoothing data. Foster describes how to relax the typical assumptions made in fitting psychometric functions and instead use the data itself to guide fitting of psychometric functions. Macke describes a technique---decision-images--- for extracting critical stimulus features based on logistic regression and how to use the extracted critical features to generate optimized stimuli for subsequent psychophysical experiments. Wichmann describes how to use "inverse" machine learning techniques to model visual saliency given eye movement data. Maloney discusses the measurement and modeling of super-threshold differences to model appearance and gives several examples of recent applications to surface material perception, surface lightness perception, and image quality. The presentations will outline how these approaches have been adapted to specific psychophysical tasks, including psychometric-function fitting, classification, visual saliency, difference scaling, and conjoint measurement. They show how these modern methods allow experimenters to make better use of data to gain insight into the operation of the visual system than hitherto possible.

Presentations

Generalized linear and additive models for psychophysical data
Kenneth Knoblauch

Model-free estimation of the psychometric function
David H. Foster, K. Zychaluk

Estimating Critical Stimulus Features from Psychophysical Data: The Decision-Image Technique Applied to Human Faces
Jakob H. Macke, Felix A. Wichmann

Non-linear System Identification: Visual Saliency Inferred from Eye-Movement Data
Felix A. Wichmann, Wolf Kienzle, Bernhard Schölkopf, Matthias Franz

Measuring and modeling visual appearance of surfaces
Laurence T. Maloney

Club Vision Dance Party

Tuesday, May 12, 9:30 pm – 1:30 am, Vista Ballroom and Sunset Deck

The highlight of the VSS social program takes place on the last night of the conference when VSS hosts the Club Vision Dance Party, featuring a DJ with a professional sound system and special lighting effects. A cash bar is available for drink purchases.

The wearing of glowing or flashing accessories has become a tradition for this event and we will again be distributing free glow-in-the-dark necklaces and bracelets at the event. We encourage you to also bring your own creative accessories.

Please come to dance and party with us until 1:30 am.

Friday Sessions

Face Perception: Emotion

Friday, May 8, 6:30 – 9:00 pm
Poster Session, Vista Ballroom

16.501 **Emotional expression perception in facial parts.** Sayako Ueda, Takamasa Koyama

16.502 **Discriminating fleeting facial expressions using featural and configural information** Timothy D. Sweeny, Marcia Grabowecky, Ken A. Paller, Satoru Suzuki

16.503 **Different Mechanism for processing Emotional Faces at the Segregation Level from the Background** Mehrdad Seirafi, Beatrice de Gelder

16.504 **Varieties of perceptual independence in the processing of facial identity and expression** Daniel Fitousi, Michael Wenger, Rebecca Von Der Heide, Jennifer Bittner

16.505 **Mixed emotions: Holistic and analytic perception of facial expressions** Sean Butler, James Tanaka, Martha Kaiser, Richard Le Grand

16.506 **How efficient are the recognition of dynamic and static facial expressions?** Zakia Hammal, Frédéric Gosselin, Isabelle Fortin

16.507 **Individual differences in attentional distraction and facilitation by emotional faces** Reiko Graham, Janine Harlow, Roque Mendez

16.508 **Visual search for emotional faces in neurodevelopmental disorders** Christine Deruelle, Andreia Santos, Delphine Rosset, David Da Fonseca

16.509 **Increasing variance in emotional expression in a crowd of faces reduces sensitivity to the average face** Ashley Dziuk, Jason Haberman, David Whitney

16.510 **Modulating observer's pain by manipulating the diagnosticity of face stimuli for the recognition of the expression of pain** Cynthia Roy, Vincent Taschereau-Dumouchel, Daniel Fiset, Pierre Rainville, Frédéric Gosselin

16.511 **Early, rapid processing of fearful facial expression in a patient with bilateral amygdala lesions.** Farshad Moradi, Naotsugu Tsuchiya , Ralph Adolphs

16.512 **Deciding to approach other people: The influence of face and body expressions** Megan Willis, Romina Palermo, Darren Burke

16.513 **The role of the amygdala in orienting attention to eyes within complex social scenes** Elina Birmingham, Moran Cerf, Ralph Adolphs

16.514 **MDMA ('Ecstasy') impairs categorization of brief fearful expressions** Matthew Baggott, Gantt Galloway, Hossein Pournajafi-Nazarloo, C. Sue Carter, Ryne Didier, Margie Jang, Jeremy Coyle, John Mendelson

Attention: Models

Friday, May 8, 6:30 – 9:00 pm
Poster Session, Vista Ballroom

16.515 **Spatially cued visual attention for precise discriminations may narrow the template as well as excluding external noise: An elaborated perceptual template model** Shiau-Hua Liu, Barbara Anne Dosher, Zhong-Lin Lu

16.516 **Attending to a Feature Results in Neighboring Within-Feature Suppression** Xin Chen, John Tsotsos

16.517 **The influence of target discriminability on the time course of attentional selection** Srivas Chennu, Patrick Craston, Brad Wyble, Howard Bowman

16.518 **Modelling of Attentional Dwell Time** Anders Petersen, Søren Kyllingsbæk, Claus Bundesen

16.519 **A model of performance in whole and partial report experiments** Tobias Andersen

16.520 **Modulation of Auditory and Visual Motion Aftereffects by Selective Attention to Opposite-Moving Spectral Components: Psychophysics and Computational Models** Thomas Papathomas, Anshul Jain

16.521 **Gist Based Top-Down Templates for Gaze Prediction** Zhicheng Li, Laurent Itti

16.522 **What the Searchlight saw: revealing the extent of natural image information that passes through bottom-up visual attention mechanisms to higher visual processing.** Terrell Mundhenk, Wolfgang Einhäuser, Laurent Itti

16.523 **Attention Prioritization as a Mechanism Underlying Context-Guided Learning in Visual Search** Yuan-Chi Tseng, Chiang-Shan Ray Li

16.524 **Visual Routines for Sketches: A Computational Model** Andrew Lovett, Kenneth Forbus

16.525 **The effect of experience on visual capture in a virtual environment** Katherine Snyder, Brian Sullivan, Richard Revia, Mary Hayhoe

16.526 **Investigating the Link Between Visual Attention and Emotion: A TVA-Based Computational Approach** Daniel Barratt

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Eye Movements: Cognitive Mechanisms

Friday, May 8, 6:30 – 9:00 pm
Poster Session, Vista Ballroom

16.527 **Stability of Eccentric Attention** Linh Dang, Laura Walker Renninger, Donald Fletcher

16.528 **Simulation of human eyes in three dimensions** Dinesh Pai, Qi Wei

16.529 **Latency/accuracy trade-offs during sequences of saccades** Chia-Chien Wu, Brian Schnitzer, Eileen Kowler, Zygmunt Pizlo, Manish Singh

16.530 **Cognitive expectation and repetitive priming contribute to probabilistic encoding in frontal cortex** Stephen Heinen, Joel Ford, Shun-nan Yang

16.531 **Differential Effects of Partial Foreknowledge on Efficiency and Switch Costs of Saccadic Eye Movements** Mathias Abegg, Jason Barton

16.532 **The influence of prior experience and task-demands on visual search for a pop-out target** Brian Sullivan, Mary Hayhoe

16.533 **Task-driven Saliency Using Natural Statistics (SUN)** Matthew Tong, Christopher Kanan, Lingyun Zhang, Garrison Cottrell

16.534 **The role of visual saliency and subjective-value in rapid decision making** Milica Milosavljevic, Vidhya Navalpakkam, Christof Koch, Antonio Rangel

16.535 **I like what I see: Using eye-movement statistics to detect image preference** Tim Holmes, Johannes Zanker

16.536 **What eye-movements tell us about online learning of the structure of scenes** Maolong Cui, Gergõ Orbán, Máté Lengyel, József Fiser

16.537 **Looking away from faces: Influence of high level visual processes on saccade programming** Stephanie M Morand, Marie-Helene Grosbras, Roberto Caldara, Monika Harvey

16.538 **Tracking the Visual Attention of Novice and Experienced Drivers** D. Alfred Owens, Jennifer Stevenson, Andrew Osborn, James Geer

Neural Mechanisms: Visual and Visuomotor Function

Friday, May 8, 6:30 – 9:00 pm
Poster Session, Vista Ballroom

16.539 **Insect visual learning: Drosophila melanogaster can discriminate and generalize the shapes of a circle and a cross** Jen-Chao Chen, Sarina Hui-Lin Chien, Wei-Yong Lin

16.540 **Spatial representation during saccade adaptation in macaque areas V1 and V4** Steffen Klingenhoefer, Markus Wittenberg, Thomas Wachtler, Frank Bremmer

16.541 **Frontal eye field activity before form visual search errors** Jeremiah Y. Cohen, Richard P. Heitz, Geoffrey F. Woodman, Jeffrey D. Schall

16.542 **Frontal Eye Field modulation of Parieto-Occipital visual processing; an online TMS EEG study** Marie-Helene Grosbras, Jason Lauder, Nienke Hoogenboom

16.543 **Illuminating Awareness: Investigating the temporal and spatial neural dynamics of metacontrast masking using the event-related optical signal** Kyle Mathewson, Diane Beck, Tony Ro, Monica Fabiani, Gabriele Gratton

16.544 **Theta-burst transcranial magnetic stimulation to the prefrontal cortex impairs metacognitive visual awareness** Brian Maniscalco, Elisabeth Rounis, John C. Rothwell, Richard E. Passingham, Hakwan Lau

16.545 **Alteration of Visuomotor Processing Following Left-right Prism Adaptation** Brian Barton, Ling Lin, Christian Herrera, Alyssa A. Brewer

16.546 **Visual Field Mapping of Visuomotor Adaptation to Prisms** Ling Lin, Brian Barton, Christian Herrera, Alyssa A. Brewer

16.547 **Dissociation of feature-based motion and 'objectless' motion energy for direction discrimination within the sighted and blindsighted visual fields of a hemianope.** Paul Azzopardi, Howard S. Hock

Saturday Sessions

Color and Light: Neural Representations of Color

Saturday, May 9, 8:30 – 10:00 am
Talk Session, Royal Ballroom 1-3
Moderator: Sophie Wuerger

8:30 am
21.11, *8:30 am* **Decoding and reconstructing color from responses in human visual cortex** Gijs Joost Brouwer, David Heeger

8:45 am
21.12 **Multivoxel Pattern Analysis of chromatic responses in LGN and V1** Sophie Wuerger, Laura Parkes, Jan-Bernard C Marsman, David C Oxley, Yannis Goulermas

9:00 am
21.13 **The significance of Whittle's experiments on luminance discrimination and brightness scaling for the multiplicative-versus-additive contrast-noise question** Frederick Kingdom

9:15 am
21.14 **Producing non-Hering Hue Combinations Using Complementary Chromatic Induction** Gennady Livitz, Arash Yazdanbakhsh, Rhea Eskew, Ennio Mingolla

9:30 am
21.15 **Both Monocular and Binocular Mechanisms Underlie Perceived Temporal Modulation of Color** Anthony D'Antona, Jens Christiansen, Steven Shevell

9:45 am
21.16 **Visual search for colors as a test of the Sapir-Whorf hypothesis** Angela M Brown, Delwin T Lindsey, Renee S Rambeau, Heather A Shamp

Object Recognition: Brain Mechanisms

Saturday, May 9, 8:30 – 10:00 am
Talk Session, Royal Ballroom 4-5
Moderator: Nikolaus Kriegeskorte

8:30 am
21.21 **Heads, Shoulders, Knees and Toes: Body Representations in Human Extrastriate Visual Cortex** Annie Chan, Dwight Kravitz, Sandra Truong, Chris Baker

8:45 am
21.22 **Relating neural object representations to perceptual judgments with representational similarity analysis** Marieke Mur, Mirjam Meys, Jerzy Bodurka, Peter Bandettini, Nikolaus Kriegeskorte

9:00 am
21.23 **Decoding top-down information: imaging prior knowledge in the visual system** Scott Gorlin, Ming Meng, Jitendra Sharma, Hiroki Sugihara, Mriganka Sur, Pawan Sinha

9:15 am
21.24 **Reading the mind's eye: Decoding object information during mental imagery from fMRI patterns** Thomas Serre, Leila Reddy, Naotsugu Tsuchyia, Tomaso Poggio, Michele Fabre-Thorpe, Christof Koch

9:30 am
21.25 **The sum of its parts? Decoding the representation of multiple simultaneous stimuli objects in the human brain using fMRI** Sean MacEvoy, Russell Epstein

9:45 am
21.26 **Where do objects become scenes?** Jiye Kim, Irving Biederman

Temporal Processing: Representations

Saturday, May 9, 11:00 am – 12:45 pm
Talk Session, Royal Ballroom 1-3
Moderator: Shin'ya Nishida

11:00 am
22.11 **The Visual System Discounts Temporal Artifacts Introduced by its Eye Movements During Reading** Peter Bex, Keith Langley

11:15 am
22.12 **Age-related changes in the temporal modulation transfer function (TMTF) assessed with a novel optical device in the fovea and parafovea** Lisa Renzi, Billy Wooten, Billy Hammond

11:30 am
22.13 **Dissociating motion-induced position illusions by the velocity dependence of both their magnitude and their variability** Alex Holcombe, Daniel Linares

11:45 am
22.14 **Perceptual ambiguity of bistable stimuli has little effects on perceptual latency** Shin'ya Nishida, Shigekazu Takei

12:00 pm
22.15 **Separate central temporal limits of cross-attribute processing revealed by binding and synchrony judgments** Waka Fujisaki, Shin'ya Nishida

12:15 pm
22.16 **Using the proliferation effect to study subjective duration at brief timescales** Vani Pariyadath, David Eagleman

12:30 pm
22.17 **Probabilistic nature of time perception** Mehrdad Jazayeri, Michael N. Shadlen

Face Perception: Adaptation, Aftereffects and Categorization

Saturday, May 9, 11:00 am – 12:45 pm
Talk Session, Royal Ballroom 4-5
Moderator: Adam Anderson

11:00 am
22.21 **The face aftereffect spreads over changes in position, orientation and size in retinotopic, not space- or object-based coordinates** Arash S.R. Afraz, Patrick Cavanagh

11:15 am
22.22 **Solving the upside-down puzzle: Inverted face aftereffects derive from shape-generic rather than face-specific mechanisms** Tirta Susilo, Elinor McKone, Mark Edwards

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11:30 am
22.23 **Cross-category adaptation of faces** Avniel Ghuman, Jonathan McDaniel, Alex Martin

11:45 am
22.24 **A contrast-based adaptation study of the contribution of gender to face representations.** Ipek Oruc, Xiaoyue M Guo, Jason J S Barton

12:00 pm
22.25 **Emotional anti-faces reveal contrastive coding of facial expressions** Joshua Susskind, Melissa Ellamil, Adam Anderson

12:15 pm
22.26 **Neural basis of contextual modulation on categorical face perception** Ming Meng, Tharian Cherian, Pawan Sinha

12:30 pm
22.27 **Where is kinship information in the child's face? Signal detection study finds no evidence for lateralization** Laurence Maloney, Maria Dal Martello

Motion: Local and Global Processing

Saturday, May 9, 8:30 am – 12:30 pm
Poster Session, Royal Ballroom 6-8

23.301 **Interaction of first- and second-order signals in global one-dimensional motion pooling.** Carlos Cassanello, Mark Edwards, David Badcock, Shin'ya Nishida

23.302 **Pooling of one dimensional motion signal across different spatial frequencies** Kazushi Maruya, Shin'ya Nishida

23.303 **Extracting motion contours with simultaneous local and global processing mechanisms** Andrew Meso, Andrew Shaw, Szonya Durant, Johannes Zanker

23.304 **Global not local motion direction tuning of curvature encoding mechanisms** Elena Gheorghiu, Frederick Kingdom, Rickul Varshney

23.305 **Motion-induced position shifts are based on global motion estimates.** Andy Rider, Alan Johnston

23.306 **Motion drag induced by global motion Gabor arrays** Peter Scarfe, Alan Johnston

23.307 **Impairment of peripheral motion perception in the elderly** Lia E. Tsotsos, Allison B. Sekuler, Patrick J. Bennett

23.308 **Repulsion of Perceived Direction in Superimposed Surfaces** Carolyn Perry, Mazyar Fallah

23.309 **Direction repulsion facilitates motion segregation** William Curran, Christopher Benton

23.310 **Temporal integration and segmentation in perceived speed.** Christopher Benton, William Curran

23.311 **Grouping impairs motion direction perception** Pascal Mamassian

23.312 **The Whole Moves More than the Spin of its Parts** Peter J. Kohler, Gideon P. Caplovitz, Peter U. Tse

23.313 **Motion detection sensitivity modulated by a task-irrelevant illusory motion in an orthogonal direction: a population decoding model** Satohiro Tajima, Hiromasa Takemura, Ikuya Murakami, Masato Okada

23.314 **Active manipulation disambiguates local but not global motion perception** Bo Hu, David Knill

23.315 **Distinct visual motion integration for high and low spatial frequency stimuli revealed by manual following response** Hiroaki Gomi, Naotoshi Abekawa

23.316 **Do surface features help? How the visual system disambiguates ambiguous motion** Elisabeth Hein, Cathleen M. Moore

23.317 **The effect of speed on the typical and atypical development of motion-defined form perception** Deborah Giaschi, Rajinder Cheema, Cindy Ho, Brandy Vanderbyl, Danny Kim, Alan Yau, John Secen

23.318 **Aging, retinal eccentricity, and global motion perception** Jeffrey Bower, Zheng Bian, John Andersen

Perceptual Learning: Models and Mechanisms

Saturday, May 9, 8:30 am – 12:30 pm
Poster Session, Royal Ballroom 6-8

23.319 **Perceptual learning can increase feed-forward neural response in early visual cortex** Min Bao, Bin He, Lin Yang, Cristina Rios, Stephen Engel

23.320 **An fMRI study of motion perceptual learning with suppressed and un-suppressed MT** Zili Liu, Benjamin Thompson, Bosco Tjan

23.321 **Reward facilitates hemodynamic responses in higher visual areas** Rimona Weil, Nicholas Furl, Christian Ruff, Ben Seymour, Guillaume Flandin, Ray Dolan, Jon Driver, Geraint Rees

23.322 **Where in the motion pathway does task-irrelevant perceptual learning occur?** Praveen Pilly, Aaron Seitz, Stephen Grossberg

23.323 **Perceptual learning for speed discrimination in optical flow** Stefan Ringbauer, Florian Raudies, Heiko Neumann

23.324 **Relating changes in processing capacity to changes in electrophysiological variables in visual perceptual learning** Rebecca Von Der Heide, Michael Wenger, Jennifer Bittner, Daniel Fitousi

23.325 **Perceptual learning of texture segmentation is specific for retinal location but not first-order orientation channel.** Nicolaas Prins, Kurt Streeter

23.326 **Aging and Perceptual Learning** Yuko Yotsumoto, Rui Ni, Li-Hung Chang, Yuka Sasaki, Takeo Watanabe, George Andersen

23.327 **Concrete and Abstract Perceptual Learning without Conscious Awareness** Everett Mettler, Philip Kellman

23.328 **Playing Action Video Games Leads to Better Perceptual Templates** Renjie Li, Vikranth R. Bejjanki, Zhonglin Lu, Alexandre Pouget , Daphne Bavelier

23.329 **Orientation thresholds and perceptual learning: An elaborated perceptual template model** Barbara Dosher, Wilson Chu, Zhong-Lin Lu

23.330 **Modeling perceptual learning in external noise with Hebbian reweighting** Zhong-Lin Lu, Jiajuan Liu, Barbara Dosher

23.331 **Coarse-to-fine learning in scene perception: Bayes trumps Hebb** József Fiser, Gergõ Orbán, Máté Lengyel, Richard Aslin

Neural Mechanisms: Receptive Fields

Saturday, May 9, 8:30 am – 12:30 pm
Poster Session, Orchid Ballroom

23.402 **The representation of transparent motion in the non-Fourier responses of LGN Y-cells** Ari Rosenberg, T. Robert Husson, Naoum P. Issa

23.403 **Variability in the responses of primary visual cortical neurons to natural movies** Shih-Cheng Yen, Jonathan Baker, Jean-Philippe Lachaux, Charles M. Gray

23.404 **Differences in spatial signal processing between neurons in the input and output layers of the macaque primary visual cortex, V1.** Chun-I Yeh, Dajun Xing, Robert M. Shapley

23.405 **Image discontinuity changes LFP gamma-band activity in primary visual cortex V1** Dajun Xing, Chun-I Yeh, Patrick Williams, Andy Henrie, Robert Shapley

23.406 **Orientation detection and discrimination domains in the primary visual cortex** Gopathy Purushothaman, Ilya Khaytin, Roan Marion, Walter Jermakowicz, Vivien Casagrande

23.407 **Neurons in primary visual cortex show dramatic changes in filtering properties when high-order correlations are present** Jonathan Victor, Ferenc Mechler, Ifije Ohiorhenuan, Anita Schmid, Keith Purpura

23.408 **Orientation change detection and orientation pooling in space and time performed by two subpopulations of neurons in V2** Anita M. Schmid, Jonathan D. Victor

23.409 **Visual response properties of striate cortical neurons projecting to V2 in macaque** Yasmine El-Shamayleh, Romesh D. Kumbhani, Neel T. Dhruv, J. Anthony Movshon

23.410 **Cortical origin of contrast response function contextual modulation in V1 population activity measured with voltage-sensitive dye imaging.** Alexandre Reynaud, Guillaume Masson, Frédéric Chavane

23.411 **Inferring monkey ocular following responses from V1 population dynamics using a probabilistic model of motion integration** Perrinet Laurent, Reynaud Alexandre, Chavane Frédéric, Masson Guillaume S.

23.412 **Neuronal activity in area MT during perceptual stabilization of ambiguous structure-from-motion** Naotsugu Tsuchiya, Alexander Maier, Nikos Logothetis, David Leopold

23.413 **An information theory approach to linking neuronal and behavioral temporal precision reveals sparse encoding and decoding underlying a rapid perceptual judgment** Ghose Geoffrey, Harrison Ian

23.414 **Pharmacological enhancement of cortical inhibition affects lateral interactions in human vision** Anna Sterkin, Oren Yehezkel, Ativ Zomet, Maria Lev , Uri Polat

Perceptual Organization: Contours

Saturday, May 9, 8:30 am – 12:30 pm
Poster Session, Orchid Ballroom

23.416 **Recovering metric object properties through spatiotemporal interpolation: What is the size of an object that is never present in the stimulus?** Tandra Ghose, Janelle Liu, Philip Kellman

23.417 **The Plot Thickens: Exploring Illusory Contours:** D. Alan Stubbs, Simone Gori, Constance S. Stubbs

23.418 **Developmental onset of illusory form perception in pigtailed macaque monkeys** Kimberly Feltner, Lynne Kiorpes

23.419 **Filling in the Gaps: The Development of Contour Interpolation** Batsheva Hadad, Daphne Maurer, Terri L. Lewis

23.420 **An fMRI Examination of Contour Integration in Schizophrenia** Steven Silverstein, Sarah Berten , Brian Essex, Ilona Kovács, Teresa Susmaras, Deborah Little

23.421 **Perturbations of Element Orientations Reveal Grouping Processes in Contour Integration** James Dannemiller, Melanie Hamel

23.422 **Prediction by the human visual system: extrapolation of complex curves** Thomas Tanner

23.423 **Strength of Contour Interpolation Behind a Moving Occluder Revealed by a Dot Localization Task** Hideyuki Unuma, Hisa Hasegawa, Philip J Kellman

23.424 **Implementing curve detectors for contour integration** Keith May, Robert Hess

Spatial Vision: Crowding and Peripheral Vision

Saturday, May 9, 8:30 am – 12:30 pm
Poster Session, Orchid Ballroom

23.425 **Response-Triggered Covariance Analysis of Letter Features** Susana Chung, Bosco Tjan

23.426 **Positional averaging within and without contours explains crowding between letter-like stimuli** Steven Dakin, John Greenwood, Peter Bex, John Cass

23.427 **A new technique for measuring the critical spacing of crowding** Sarah Rosen

23.428 **Crowding by invisible flankers** Arielle Veenemans, Patrick Cavanagh, Ramakrishna Chakravarthi

23.429 **Crowding without visual awareness.** Joey Cham, Sing-Hang Cheung

23.430 **The fine spatial structure of crowding zones** Anirvan Nandy, Bosco Tjan

23.431 **Crowding acts beyond the locus of binocular suppression** Pik Ki Ho, Sing-Hang Cheung

23.432 **The effects of transient attention and target contrast on crowding at different eccentricities** Einat Rashal, Yaffa Yeshurun

23.433 **Texture processing model visualizes perception of Pinna-Gregory illusion** Alvin Raj, Ruth Rosenholtz, Benjamin Balas

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23.434 **Radial line bisection biases in the periphery** Jason Forte, Mike Nicholls, Michele Hervatin

23.435 **Does semantic information survive crowding?** Paul F. Bulakowski, David W. Bressler, Robert B. Post, David Whitney

23.436 **The limit of spatial resolution varies at isoeccentric locations in the visual field** Leila Montaser-Kouhsari, Jared Abrams, Marisa Carrasco

23.437 **Increasing time compression with eccentricity: A magnocellular property?** Felipe Aedo-Jury, Delphine Pins

23.438 **The Letter in the Crowd: Developmental Trajectory of Single Letter Acuity and Foveal Crowding** Seong Taek Jeon, Joshua Hamid, Daphne Maurer, Terri Lewis

23.439 **Towards an easier way to measure the visual span** Denis G. Pelli

Multisensory Processing: Visual and Auditory Perception

Saturday, May 9, 8:30 am – 12:30 pm
Poster Session, Orchid Ballroom

23.440 **Cross-modal transfer of motion processing from audition to vision** Zachary Ernst, Geoffrey Boynton

23.441 **Synesthetic colors for phonetic Japanese characters depend on frequency and sound qualities** Michiko Asano, Kazuhiko Yokosawa

23.442 **Synesthetic colors for logographic Japanese characters depend on the meaning** Kazuhiko Yokosawa, Michiko Asano

23.443 **Perception-based responses in a sub-region of multisensory superior temporal sulcus: Distinct BOLD responses with perceived-synchronous and perceived-asynchronous audiovisual speech** Ryan Stevenson, Ross VanDerKlok, Sunah Kim, Thomas James

23.444 **Perceived Temporal Synchrony: Interactions Between a Continuous Audiovisual Stream and a Discrete Audiovisual Event.** Eric Hiris, Christopher Lewis

23.445 **Timing the sound-induced flash illusion** Catherine Éthier-Majcher, Caroline Blais, Frédéric Gosselin

23.446 **Sensory and decisional factors in the resolution of stream/bounce displays** Philip Grove, Jessica Ashton, Yousuke Kawachi, Kenzo Sakurai

23.447 **Auditory-visual integration in texture perception mediated by tactile exploration** Emmanuel Guzman-Martinez, Laura Ortega-Torres, Marcia Grabowecky, Julia Mossbridge, Satoru Suzuki

23.448 **Veridical auditory information enhances visual sensitivity to biological motion.** James Thomas, Maggie Shiffrar

23.449 **Multisensory Cue Integration in Audiovisual Spatial Localization** Yamaya Sosa, Aaron Clarke, Mark E. McCourt

23.450 **See an object, hear an object file: Object correspondence transcends sensory modality** Kerry Jordan, Kait Clark, Stephen Mitroff

23.451 **Visual, auditory and bimodal recognition of people and cars** Adria E N Hoover, Jennifer K E Steeves

23.452 **Characteristic sounds make you look at the targets faster in visual search** Lucica Iordanescu, Marcia Grabowecky, Steven Franconeri, Jan Theeuwes, Satoru Suzuki

23.453 **Multisensory Benefits of Playing Video Games** Sarah E. Donohue, Marty G. Woldorff, Stephen R. Mitroff

Attention: Capture

Saturday, May 9, 8:30 am – 12:30 pm
Poster Session, Vista Ballroom

23.501 **Informative cues attenuate attentional capture by irrelevant distractors** Jeff Moher, Howard Egeth

23.502 **Top-Down Control of Attention Capture Takes Time: Evidence From Trial By Trial Analyses of Capture by Abrupt Onsets** Joshua Cosman, Shaun Vecera

23.503 **Attentional capture by a salient non-target improves target selection** Joy Geng, Nick DiQuattro

23.504 **Bridging attentional capture and control: Evidence from a partial report paradigm with color singletons** Maria Nordfang, Søren Kyllingsbæk, Claus Bundesen

23.505 **Catch me if you can: The need to switch between attentional sets enhances contingent attentional capture effects** Katherine Sledge Moore, Amanda Lai, Marshall B. O'Moore, Patricia Chen, Daniel H. Weissman

23.506 **Attentional Capture is Modulated by Object-based Representations** Sarah Shomstein, Sarah Mayer-Brown

23.507 **What Causes IOR and Contingent Capture?** William Prinzmetal, Ruby Ha

23.508 **On the ability to overcome attention capture in visual search** Adrian von Muhlenen, Markus Conci

23.509 **Previewing inoculates against attentional capture** Fook K. Chua

23.510 **Fear Factor: Attention capture by fearfully expressive faces in an RSVP task** Caitlin Mullin, Krista Kelly, Jennifer Steeves

23.511 **Attentional Capture by Emotional Faces in Adolescence** Jill Grose-Fifer, Steven Hoover, Andrea Rodrigues, Tina Zottoli

23.512 **Individual difference in "release time" from attentional capture** Keisuke Fukuda, Edward Vogel

23.513 **Video game playing improves recovery from attentional capture** Joseph Chisholm, Clayton Hickey, Jan Theeuwes, Alan Kingstone

Attention: Temporal Selection and Modulation

Saturday, May 9, 8:30 am – 12:30 pm
Poster Session, Vista Ballroom

23.514 **Spatiotemporal dynamics of attentional updating across saccades** Alexandria Marino, Julie Golomb, Marvin Chun, James Mazer

23.515 **The time-course of covert cuing using spatial frequency targets** Aisha P. Siddiqui, Shruti Narang, Benjamin A. Guenther, James M. Brown

23.516 **The size of the cued area does not affect scaling of attentional focus on temporal order judgment task.** Mikael Cavallet, Cesar Galera, Michael von Grunau, Afroditi Panagopoulos, Eduardo Leão

23.517 **Early and late modulation of attentional selection by multiple attentional control sets: ERP evidence** Maha Adamo, Carson Pun, Susanne Ferber

23.518 **How is the spatial attention focused on object?** Ryosuke Niimi, Manabu Tanifuji

23.519 **Cooccurrence binding errors: Are people bound to the chairs they are sitting on?** Ekaterina Pechenkova, Mary C. Potter, Brad Wyble, Jennifer Olejarczyk

23.520 **Non-Retinotopic Feature Integration is Pre-Attentive** Thomas U. Otto, Haluk Ögmen, Michael H. Herzog

23.521 **Attention processes in action video game players** Matthew S. Cain, Ayelet N. Landau, William Prinzmetal, Lynn C. Robertson, Arthur P. Shimamura

Spatial Vision: Natural Scenes

Saturday, May 9, 8:30 am – 12:30 pm
Poster Session, Vista Ballroom

23.522 **The Effect of Color Saturation and Luminance Contrast on Color Naturalness** Lisa Nakano, Tatsuto Takeuchi, Isamu Motoyoshi, Yuanzhen Li, Edward Adelson, Shin'ya Nishida

23.523 **Effect of Retinal Ganglion Cell Sampling on the Local Power Spectra of Natural Images** Brian McCann, Wilson Geisler, Mary Hayhoe

23.524 **Contrast Perception and Contrast Variance in Natural Scenes** Catheine Vishton, Steven Dakin, Peter Bex

23.525 **Crowding effects in central and peripheral vision when viewing natural scenes** Michelle P. S. To, Iain D. Gilchrist, Tom Troscianko, P. George Lovell, David J. Tolhurst

23.526 **Boundary segmentation of naturalistic textures: roles of sparseness and local phase structure** Elizabeth Arsenault, Ahmad Yoonessi, Curtis Baker

23.528 **Image Features Predict Edge Causation in Natural Images** Jonathon George, Ganesh Padmanabhan, Mark Brady

23.529 **Optimal "multiplicative" interactions between local and long-range contour cues: where natural image statistics meets single neuron computation** Chaithanya Ramachandra, Bardia Behabadi, Rishabh Jain, Bartlett Mel

23.530 **Human Estimation of Local Contrast Orientation In Natural Images** Garrett Hoff, Mark Brady

23.531 **A walk through the woods explains the space variant oblique effect** Constantin Rothkopf, Thomas Weisswange, Jochen Triesch

23.532 **Comparing image structure with local motion structure in real life optic flow** Szonya Durant, Johannes Zanker

23.533 **Prior expectations in line orientation perception** Ahna R. Girshick, Eero P. Simoncelli, Michael S. Landy

23.534 **Visual gist of natural scenes derived from image statistics parameters** H.Steven Scholte, Sennay Gebreab, Arnold Smeulders, Victor Lamme

23.535 **Visual discomfort and natural image statistics** Leah Land, Igor Juricevic, Arnold Wilkins, Michael Webster

23.536 **ImageNet: Constructing a Large-Scale Image Database** Li Fei-Fei, Jia Deng, Kai Li

Special Populations: Disorders and Disease

Saturday, May 9, 8:30 am – 12:30 pm
Poster Session, Vista Ballroom

23.537 **Brightness as a function of current amplitude in human retinal electrical stimulation** Scott Greenwald, Alan Horsager, Mark Humayun, Robert Greenberg, Matthew McMahon, Ione Fine

23.538 **Visual attributes following an acute optic neuritis episode – a longitudinal study** Noa Raz, Shlomo Dotan , Tal Ben-Oliel, David Arkadir , Adi Vaknin, Sylvie Chokron, Netta Levin

23.539 **Visual Development in Preterm Infants: Assessing the Impact of Transient Thyroid Hormone Deficiencies** Nevena Simic, Joanne Rovet

23.540 **Efficacy of NeuroVision's NVC™ Technology Treatment on Unaided Visual Acuity in Moderate Myopes** Sheng Tong Lin, Adeline Yang, Jolene Ong, Gerard Nah, Lionel Lee , Donald Tan

23.541 **The mapping of spatial frequency across amblyopic visual cortex** Robert Hess, Benjamin Thompson, Xingfeng Li, Bruce Hansen

23.542 **The roles of contrast and luminance in amblyopic suppression** Goro Maehara, Benjamin Thompson, Behzad Mansouri, Robert Hess

23.543 **Motion direction discrimination in strabismic amblyopia: effects of stimulus contrast and size** Alby Richard, Benjamin Thompson, Robert Hess, Craig Aaen-Stockdale, Christopher Pack

23.544 **Compensatory changes in activity in effector circuitries during visually guided behavior following V1 damage in humans** Anasuya Das, Tim Martin, Krystel R. Huxlin

23.546 **Neurovisual disorder underlying learning disability? Neurological anomaly in two children diagnosed with a learning disability.** Marc Vilayphonh, Céline Cavézian, Françoise Héran, Sylvie Chokron

23.547 **Combined effects of semantic and visual proximity on visual object identification in Alzheimer 's Disease and Mild Cognitive Impairment.** Genevieve Desmarais, Mike Dixon, Kathleen Myles

Perceptual Organization: Edges, Configurations, and Surfaces

Saturday, May 9, 2:45 – 4:15 pm
Talk Session, Royal Ballroom 1-3
Moderator: Jacqueline M. Fulvio

2:45 pm
24.11 **A Configural Shape Illusion** Stephen Palmer, Karen Schloss

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3:00 pm
24.12 **Filling-in regions influence real and interpolated shape via lightness induction** Philip J. Kellman, Brian P. Keane, Hongjing Lu

3:15 pm
24.13 **Contour integration under slit-viewing** Shu-Guang Kuai, Wu Li, Cong Yu

3:30 pm
24.14 **Change detection for objects on surfaces slanted in depth** Kerem Ozkan, Myron Braunstein

3:45 pm
24.15 **Reduced sampling of dynamic trajectories does not increase extrapolation bias.** Jacqueline M. Fulvio, Paul R. Schrater, Laurence T. Maloney

4:00 pm
24.16 **Why features defined purely by color need not be represented at early stages of visual analysis** Maria Michela Del Viva, Giovanni Punzi, Steven Shevell

Attention: Tracking and Shifting

Saturday, May 9, 2:45 – 4:15 pm
Talk Session, Royal Ballroom 4-5
Moderator: Julie Golomb

2:45 pm
24.21 **Targets in RSVP Sentences: Attentional Blinks in Whole versus Partial Report** Mary C. Potter, Jennifer Olejarczyk, Brad Wyble

3:00 pm
24.22 **Distractors in Multiple Object Tracking can be suppressed early or late in processing: Evidence from ERPs** Matthew Doran, James Hoffman

3:15 pm
24.23 **The functional nature of motion-induced blindness: Further explorations of the 'perceptual scotoma' hypothesis** Joshua J. New, Brian J. Scholl

3:30 pm
24.24 **Attentional updating across saccades in retinotopic visual cortex** Julie Golomb, James Mazer, Marvin Chun

3:45 pm
24.25 **Speed of vision depends on temporal expectancy** Signe Vangkilde, Claus Bundesen

4:00 pm
24.26 **Binding into sequence: temporal dynamics of sequential movements modulate the attentional pre-selection of subsequent goals** Daniel Baldauf

Memory: Working and Long-term

Saturday, May 9, 5:15 – 7:00 pm
Talk Session, Royal Ballroom 1-3
Moderator: George Alvarez

5:15 pm
25.11 **Perception, not Working Memory, is All-or-None** Liqiang Huang

5:30 pm
25.12 **Adults store up to 3 featurally-overlapping sets in working memory** Mariko Yamaguchi, Arin Tuerk, Lisa Feigenson

5:45 pm
25.13 **Comparing the Fidelity of Perception, Short-term Memory, and Long-term Memory: Evidence for Highly Detailed Long-term Memory Representations** George Alvarez, Talia Konkle, Timothy Brady, Jonathan Gill, Aude Oliva

6:00 pm
25.14 **The high fidelity of scene representation in visual long-term memory** Aude Oliva, Talia Konkle, Timothy F. Brady, George A. Alvarez

6:15 pm
25.15 **Evidence for the Role of Visual Short-Term Memory in Conscious Object Recognition** Stephen Emrich, Susanne Ferber

6:30 pm
25.16 **Decoding the contents of visual working memory from activity in the human visual cortex** Stephenie A. Harrison, Frank Tong

6:45 pm
25.17 **Expecting the unexpected: Dissociating visual similarity from perceptual expectation in neural repetition attenuation** Nicholas B. Turk-Browne, Harrison A. Korn, Marvin M. Chun

Neural Mechanisms: Cortical Organization

Saturday, May 9, 5:15 – 7:00 pm
Talk Session, Royal Ballroom 4-5
Moderator: Andy Smith

5:15 pm
25.21 **Peripheral Information in Foveal Cortex: Generalizing across Task and Stimuli** Won Mok Shim, Jason Webster, Nancy Kanwisher

5:30 pm
25.22 **Reorganization of visual processing in macular degeneration is not specific to the "preferred retinal locus"** Daniel D. Dilks, Chris I. Baker, Eli Peli, Nancy Kanwisher

5:45 pm
25.23 **Large-scale cortical reorganization is absent in both juvenile and age-related macular degeneration** Heidi Baseler, Andre Gouws, Michael Crossland, Adnan Tufail, Gary Rubin, Chris Racey, Antony Morland

6:00 pm
25.24 **Spatial organization of spontaneous activities in the human visual cortex** Pinglei Bao, Bosco S. Tjan

6:15 pm
25.25 **Functional connectivity among cortical regions is shaped by associative experiences** Yiying Song, Moqian Tian, Yong Bu, Jia Liu

6:30 pm
25.26 **Population receptive field measurements in human ventral category-selective cortex** Rory Sayres, Kevin Weiner, Serge Dumoulin, Brian Wandell, Kalanit Grill-Spector

6:45 pm
25.27 **Localisation of the human V6 complex and parietal visual areas using egomotion-consistent stimuli** Velia Cardin, Andy Smith

Color and Light: Lightness and Brightness

Saturday, May 9, 2:45 – 6:45 pm
Poster Session, Royal Ballroom 6-8

26.301 **A high resolution, high dynamic range display for vision research** James Ferwerda, Stefan Luka

26.302 **Inferring characteristics of stimulus encoding mechanisms using rippled noise stimuli** Tom Putzeys, Robbe Goris, Johan Wagemans, Matthias Bethge

26.303 **An ideal observer model predicts lightness matches** Sarah Allred, Vanessa Troiani, Lynn Lohnas, Li Jiang, Ana Radonjic, Alan Gilchrist, David Brainard

26.304 **Color provides leverage to assess theories of lightness** Byung-Geun Khang, Barton L. Anderson

26.305 **Perception of the highest luminance under extremely low illumination levels.** Stephen Ivory, Alan Gilchrist

26.306 **Lightness constancy and illumination contrast discounting** Alexander Logvinenko, Rumi Tokunaga

26.307 **Simultaneous contrast is size dependent but does not scale with eccentricity** François X. Sezikeye, Rick Gurnsey

26.308 **Long-range argyles and spatial-scale models of brightness** Arthur Shapiro, Zhong-Lin Lu

26.309 **Effects of global and local stimulus configurations on brightness perception within articulated surrounds** Masataka Sawayama, Eiji Kimura

26.310 **The effects of contrast on the achromatic watercolor illusion** Bo Cao, Arash Yazdanbakhsh, Ennio Mingolla

26.311 **Illusory contours in a White's display** Pablo Barrionuevo, Elisa Colombo, Luis Issolio

26.312 **Craik-O'Brien Cornsweet effect occurs after binocular fusion** Ayako Masuda, Masahiko Terao, Junji Watanabe, Kazushi Maruya, Masataka Watanabe, Akihiro Yagi

26.313 **Illusory Brightness Priming Occurs Without Awareness** Marjan Persuh, Tony Ro

26.314 **Invisible context modulates conscious perception** Julia Harris, Bahador Bahrami, Geraint Rees

Eye Movements: Cognition and Social Cognition

Saturday, May 9, 2:45 – 6:45 pm
Poster Session, Royal Ballroom 6-8

26.315 **The effect of theta TMS over the FEF on fMRI activations** Martijn van Koningsbruggen, Paul Downing, Robert Rafal

26.316 **Gaze orienting, and novelty vs. familiarity preference** Hsin-I Liao, Junghyun Park, Eiko Shimojo, Junko Ishizaki, Su-Ling Yeh, Shinsuke Shimojo

26.317 **An Oculomotor Simon Effect** Kwesi Sullivan, Jay Edelman

26.318 **Conscious perception of intrasaccadic displacements is deficient in a patient with a focal thalamic lesion** Florian Ostendorf, Daniela Liebermann, Christoph Ploner

26.319 **Objective characterization of square-wave jerks differentiates progressive supranuclear palsy patients from healthy volunteers** Jorge Otero-Millan, R. John Leigh, Alessandro Serra, Xoana Troncoso, Stephen L. Macknik, Susana Martinez-Conde

26.320 **Screening Attentional-related Diseases based on Correlation between Salience and Gaze** Po-He Tseng, Ian Cameron, Doug Munoz, Laurent Itti

26.321 **Simulated low vision with young and old adults: How do they see?** Rong Zhou, Michael von Grünau, Aaron Johnson, Rick Gurnsey

26.322 **The different effects of a visual target in the blind hemifield of hemidecorticate patients on the latency of antisaccades.** Olga Savina, Daniel Guitton

26.323 **The effects of a distractor on the visual gaze behavior of children at signalized road crossings.** Christopher Egan, Alexandra Willis, Joanna Wincenciak

26.324 **The power of eyes: the eye region is explored even when there are no eyes in faces** Roxane Itier, Jennifer Ryan

26.325 **Following the masters: Viewer gaze is directed by relative detail in painted portraits** Caitlin Riebe, Steve DiPaola, James Enns

26.326 **Emotion Affects Oculomotor Action** Jay Pratt, Greg West, Tim Welsh, Adam Anderson

26.327 **Social experience does not abolish cultural diversity in eye movements for faces** Emanuele De Luca, David J. Kelly, Sebastien Miellet, Kay Foreman , Roberto Caldara

26.328 **Cultural Diversity in Eye Movements Extends Across Biological and Artificial Visual Categories** David J. Kelly, Sebastien Miellet, Roberto Caldara

Spatial Vision: Mechanisms

Saturday, May 9, 2:45 – 6:45 pm
Poster Session, Orchid Ballroom

26.401 **Confidence in crowded stimuli** Simon Barthelmé, Pascal Mamassian

26.402 **Crowding in multi-element arrays: regularity of spacing** Toni Saarela, Michael Herzog

26.403 **Perceptual estimation of variance in orientation and its dependence on sample size** Steven A. Cholewiak, Manish Singh

26.404 **Orientation integration in complex visual processing** Henry Galperin, Peter Bex, Jozsef Fiser

26.405 **Perception of global textures based on joint-orientation statistics** Isamu Motoyoshi, Fred Kingdom

26.407 **The role of divisive inhibition in Glass pattern discrimination** Chien-Chung Chen

26.408 **A Neurophysiologically Plausible Population-Code Model for Human Contrast Discrimination** Robbe Goris, Felix Wichmann, Bruce Henning

26.409 **A comparison of the pedestal effects in the 1st- and 2nd-order patterns** Pi-Chun Huang, Chien-Chung Chen

26.410 **Parameterization of Contrast Detection and Discrimination in 1/f Noise** Andrew Haun, Edward Essock

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26.411 **Two modes of hiding suprathreshold stimuli in complex patterns** Michael Levine, Jennifer Anderson, Jason McAnany

26.412 **Cause of asymmetries in center-surround and surround-center masking.** Patrick J. Hibbeler, Dave Ellemberg, Aaron Johnson, Lynn A. Olzak

26.413 **Overlay and Surround Suppression Both Show a Horizontal Effect Anisotropy** Yeon Jin Kim, Andrew M Haun, Edward A Essock

26.414 **Processing cues to discrimination in center-surround stimuli.** Lynn A. Olzak, Patrick J. Hibbeler, Thomas D. Wickens

26.415 **Lateral facilitation demonstrated dichoptically for luminance- and contrast-modulated stimuli.** M Izzuddin Hairol, Sarah J Waugh

26.416 **Reduced Second-Order Contrast Discrimination Under Dichoptic Viewing** Gayathri Srinivasan, Erwin Wong

26.417 **Binocular summation for luminance- and contrast-modulated noise stimuli.** Sarah J Waugh, Sarah J H Lalor, M Izzuddin Hairol

26.418 **Dichoptic and Monoptic Spatial Integration of Second-Order Contrast** Erwin Wong, Jenna Kryder

Motion: Biological

Saturday, May 9, 2:45 – 6:45 pm
Poster Session, Orchid Ballroom

26.419 **Depth ambiguities and adaptation aftereffects in perception of point-light biological motion** Stuart Jackson, Randolph Blake

26.420 **Adaptation of early ERP responses to biological motion by both form and motion** Wendy Baccus, Olga Mozgova, James Thompson

26.421 **The effects of retroreflectivity and biological motion on the visibility of pedestrians at night** Justin S. Graving, Richard A. Tyrrell, Stacy A. Balk, Jeremy Mendel, Nathan M. Braly, Lynna Sinakhonerath, Liam H. O'Hara, Kristin S. Moore

26.422 **Dances with Gabors: Contour integration and form in biological motion** Martin Thirkettle, N.E. Scott-Samuel, C.P. Benton

26.423 **Spatio-temporal "Bubbles" reveal diagnostic information for perceiving point-light and fully illuminated biological motion** Steven Thurman, Emily Grossman

26.424 **Spatial pattern analysis in biological motion** Hongjing Lu, Alan Lee, Brian P. Keane

26.425 **Correlation between neural decoding and perceptual performance in visual processing of human body postures: generic views, inversion effect and biomechanical constraint** Michiteru Kitazaki, Shinichiro Hariyama, Yasuyuki Inoue, Shigeki Nakauchi

26.426 **Automatic attention to local life motion signals** Yi Jiang, Yang Zhang, Sheng He

26.427 **Identification of point light walkers exhibits an attentional blink** Brad Wyble, Mary Potter, Thomas Serre, Martin Giese

26.428 **Peripheral Sensitivity to Biological Motion is Unaffected by Dividing Attention** Gabrielle Roddy, Nikolaus Troje, Rick Gurnsey

26.429 **Selective attention to superimposed biological and tool motion: a combined fMRI and ERP study** Ashley Safford, Elizabeth Hussey, Raja Parasuraman, James Thompson

26.430 **Feature integration and sensitivity to synchronicity for biological motion impaired by amblyopia** Jennifer Luu, Dennis Levi

26.431 **Aging disrupts the processing of point-light walkers presented in noise** Karin Pilz, Patrick Bennett, Allison Sekuler

26.432 **Biological motion targets have to be further away in virtual space for older versus younger adults to maintain good performance** Isabelle Legault, Nikolaus F. Troje, Jocelyn Faubert

26.433 **Intact biological motion processing in adults with autism** N. F. Troje, M. D. Rutherford

26.434 **Stimulus magnification compensates for eccentricity dependent sensitivity loss for first and second order biological motion stimuli** Rick Gurnsey, Nikolaus Troje

26.435 **Relationship between sexual dimorphism and perceived attractiveness in the perception of biological motion** Martin A Giese, Isabel Arend, Claire Roether, Robin Kramer, Rob Ward

26.436 **Learning to anticipate the actions of others: The goal-keeper problem** Gabriel Diaz, Brett Fajen, Dennis Ehlinger

26.437 **Influence of spatial and temporal congruency between executed and observed movements on the recognition of biological motion** Andrea Christensen, Winfried Ilg, Hans-Otto Karnath, Martin A. Giese

26.438 **Evidence for object-centered coding of biological motion.** James Thompson, Elizabeth Hussey

Face Perception: Development and Disorders

Saturday, May 9, 2:45 – 6:45 pm
Poster Session, Orchid Ballroom

26.439 **Using innate visual biases to guide face learning in natural scenes: A computational investigation** Benjamin Balas

26.440 **Support for an exogenous account of left visual field biases in infants** Andrea Wheeler, Kang Lee

26.441 **Do infants recognize the Arcimboldo images as faces? Behavioral and Near-infrared spectroscopic study** Megumi Kobayashi, Yumiko Otsuka, Emi Nakato, So Kanazawa, Masami K. Yamaguchi, Ryusuke Kakigi

26.442 **Sensitivity to Posed versus Genuine Expressions: Are Children Easily Fooled?** Danielle Longfield, Kendra Thomson, Catherine Mondloch

26.443 **The role of experience during childhood in shaping the other-race effect** Adelaide de Heering, Claire de Liedekerke, Malorie Deboni, Bruno Rossion

26.444 **Face discrimination in infants and adults: the role of contrast polarity of the eyes** Yumiko Otsuka, Isamu Motoyoshi, Megumi Kobayashi, Harold Hill, So Kanazawa, Masami K. Yamaguchi

26.445 **Deficits in face and object processing manifest differently in normal aging and developmental prosopagnosia** Yunjo Lee, Meera Paleja, Cheryl Grady, Morris Moscovitch

26.446 **Probing the face-space of individuals with prosopagnosia.** Mayu Nishimura, Jaime Doyle, Marlene Behrmann

26.447 **Non-face visual memory impairments in developmental prosopagnosia** Garga Chatterjee, Richard Russell, Ken Nakayama

26.448 **Structural differences in developmental prosopagnosia** Lúcia Garrido, Nicholas Furl, Raka Tavashmi, Jon Driver, Ray Dolan, Brad Duchaine

26.449 **Disconnection of cortical face network in prosopagnosia revealed by diffusion tensor imaging** Linda J. Lanyon, Michael Scheel, Christopher J. Fox, Giuseppe Iaria, Jason J. S. Barton

26.450 **Use of a Correlative Training Method in the Rehabilitation of Acquired Prosopagnosia** Ann Grbavec, Christopher Fox, Jason Barton

26.451 **Holistic processing of diagnostic 3D face shape as compared to 2D surface reflectance: evidence from face inversion and acquired prosopagnosia** Fang Jiang, Volker Blanz, Bruno Rossion

26.452 **Effects of face inversion and noise in persons with schizophrenia** Justine Spencer, Jelena P. King, Patrick J. Bennett, Allison B. Sekuler, Bruce Christensen

26.453 **fMRI activation during face processing: Differential effects of spatial frequency manipulation in healthy controls and people with schizophrenia** Sherrie All, Deborah Little, Teresa Susmaras, Sarah Berten, Brian Essex, Kira Lathrop, Steven Silverstein

26.454 **Perceptual Reversal Patterns in Individuals with Asperger Syndrome** Brenda M. Stoesz, Lorna S. Jakobson

3D Perception: Shape, Shading and Contours

Saturday, May 9, 2:45 – 6:45 pm
Poster Session, Vista Ballroom

26.501 **Spatial patterns of cortical responses to shape from shading: a steady-state VEP study.** Tomoko Imura, Nobu Shirai, Deirdre Birtles, Shirley Anker, John Wattam-Bell, Janette Atkinson, Oliver Braddick

26.502 **Infants' ability to perceive 3D shape from pictorial cues: Transfer-across-depth-cues study** Aki Tsuruhara, Tadamasa Sawada, So Kanazawa, Masami K. Yamaguchi, Albert Yonas

26.503 **The perception of 3-D shape from shadows cast onto curved surfaces** J. Farley Norman, Young-lim Lee, Flip Phillips, Hideko F. Norman, L. RaShae Jennings, T. Ryan McBride

26.504 **Contextual lighting cues can override the light-from-above prior** Yaniv Morgenstern, Richard F. Murray

26.505 **The role of second-order vision in discriminating shading versus material changes.** Andrew Schofield, Rock Paul, Sun Peng, Mark Georgeson

26.506 **Interaction of Contour, Shading and Texture in Natural Images** Chetan Nandakumar, Antonio Torralba, Jitendra Malik

26.507 **The dependence of perceived 3D relief of 2D shaded figures on the shape of their 1D bounding contours** Dejan Todorovic

26.508 **Perceptual asynchrony between sinusoidally modulated luminance and depth** Arash Yazdanbakhsh, Shigeaki Nishina, Takeo Watanabe

26.509 **Orientation effects in the horizontal-vertical illusion** Marie de Montalembert, Pascal Mamassian

26.510 **Figure Contour Binds the Depth-After-Effect** Katinka van der Kooij, Susan te Pas

26.511 **Three-dimensional shape from second-order orientation flows** Carole Filangieri, Andrea Li

26.512 **Line Junctures Create a Powerful Illusion of Moving Surfaces** Albert Yonas, Sherryse Mayo, Alyssa Ferrie

26.513 **A computational model on 3D shape recovery** Yunfeng Li

26.514 **Recovering symmetric and asymmetric 3D shapes from a single 2D image** Tadamasa Sawada

26.515 **Processing of 3-D Illusions influences Preferences for Symmetry** Susan Davis, Carolyn Mingione, Justin Ericson

Binocular Vision: Depth, Bistability, and Memory

Saturday, May 9, 2:45 – 6:45 pm
Poster Session, Vista Ballroom

26.516 **Neural modulations during perceptual bi-stability away from equi-dominance are common to two different ambiguous displays** Yulia Lerner, Nava Rubin

26.517 **Even in continuous displays, multistable perception depends on history** Alexander Pastukhov, Jochen Braun

26.518 **Effects of inter-ocular contrast difference and decorrelation noise on disparity discrimination** Ross Goutcher, Lisa M. O'Kane, Paul B. Hibbard

26.519 **Perceptual Memory influences both continuous and intermittent Ambiguous Perception, but in opposite ways** Maartje Cathelijne de Jong, Raymond van Ee

26.520 **Unconscious numerical priming despite interocular suppression** Bahador Bahrami, Petra Vetter, Eva Spolaore, Silvia Pagano, Brian Butterworth, Geraint Rees

26.521 **Size of vertical disparity pooling and the induced effect** Ignacio Serrano-Pedraza, Graeme Phillipson, Jenny C. A. Read

26.522 **Identifying discontinuities in depth: A role for monocular occlusions** Inna Tsirlin, Laurie Wilcox, Robert Allison

26.523 **Binocular Combination in Amblyopic Vision** Jian Ding, Stanley Klein, Dennis Levi

26.524 **Oculomotor endurance therapy for convergence insufficiency increases duration of near task performance** Dennis Ireland, Barclay Bakkum, Robert Donati

26.525 **Amodal spatial facilitation resolves local ambiguities of kinetic depth** Chris Klink, André Noest, Richard van Wezel

26.526 **Comparison of local and global stereopsis in children with microstrabismus** Mariline Pageau, Danielle de Guise, Dave Saint-Amour

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26.527 **Stereopsis and Aging** Cory L. Burton, Ashley N. Bartholomew, Charles E. Crabtree, Amy E. Craft, J. Farley Norman

26.528 **A display with multiple focal planes can stimulate continuous variations in accommodation.** Kevin J. MacKenzie, Simon J. Watt

26.529 **Ability to use stereo predicts recruitment of a correlated artificial cue** Kelly Chajka, Benjamin Backus, Jeremy Wilmer

Attention: Spatial Selection and Modulation

Saturday, May 9, 2:45 – 6:45 pm
Poster Session, Vista Ballroom

26.530 **Quantifying Attention: Attention Filtering in Centroid Estimations** Stefanie Drew, Charles Chubb, George Sperling

26.531 **Attention to hierarchical level influences attentional selection of spatial scale** Anastasia Flevaris, Shlomo Bentin, Lynn Robertson

26.532 **Attentional Color Hierarchy for Pursuit Target Selection** Mazyar Fallah, Illia Tchernikov

26.533 **Central fixation task activates ventral LOC and dorsal hMT in human visual cortex** Betina Ip , Holly Bridge, Andrew Parker

26.534 **Diluting the burden of load: Perceptual load effects are simply dilution effects** Hanna Benoni, Yehoshua Tsal

26.535 **Exploring the causes of object effects on location-based inhibition of return when using spatial frequency specific cues and targets** Benjamin A. Guenther, Shruti Narang, Aisha P. Siddiqui, James M. Brown

26.536 **Attentional Filtering Modulates the Induced Roelofs Effect, but Shifts of Attention Do Not Cause It** Benjamin Lester, Paul Dassonville

26.537 **Spatial Attention in Conscious and Nonconscious Visual Processing** Bruno G. Breitmeyer, Evelina Tapia, Elizabeth C. Broyles

26.538 **Attention to the location of an invisible face can induce adaptation.** Kilho Shin, Sang Chul Chong

26.539 **Beware the Watcher: The effects of direct gaze on attention to human faces** Carmela Gottesman, Amy Williams

Visual Search: Attentional Mechanisms

Saturday, May 9, 2:45 – 6:45 pm
Poster Session, Vista Ballroom

26.540 **The effect of context on rapid animal detection** Jan Drewes, Julia Trommershaeuser, Karl R. Gegenfurtner

26.541 **Non-retinotopic visual search** Marco Boi, Haluk Ogmen, Krummenacher Joseph, Michael Herzog

26.542 **Amodal completion does not require attention** Ester Reijnen, Riccardo Pedersini, Yair Pinto, Todd Horowitz, Yoana Kuzmova, Jeremy Wolfe

26.543 **Order effects determine whether irrelevant stimuli are scrutinized in preview and conjunction search.** Hengqing Chu, Alejandro Lleras

26.544 **Expected value of stimuli enhances visual search but does not affect rapid resumption** Julia Gomez-Cuerva, James Enns, Jane Raymond

26.545 **Cortical What and Where Streams Interact to Regulate Contextual Cueing during Visual Search** Tsung-Ren Huang, Stephen Grossberg

26.546 **Visual marking survives graphical change without semantic change** Takayuki Osugi, Takatsune Kumada, Jun-ichiro Kawahara

26.547 **Learning in an attentionally-demanding triple-conjunction task** Farhan Baluch, Laurent Itti

26.548 **A calm eye is associated with the passive advantage in visual search** M. R. Watson, A. A. Brennan, A. Kingstone, J. T. Enns

26.549 **The prevlanece effect is imbalanced: it is stronger for high target presentation rates, than for low.** Hayward J. Godwin, Tammy Menneer, Kyle R. Cave, Victoria Cutler, Nick Donnelly

26.550 **Conjunction search following progressive feature disclosure** Elizabeth Olds, Timothy Graham, Jeffery Jones, Wafa Saoud

Sunday Sessions

Perception and Action: Decision and Action

Sunday, May 10, 8:30 – 10:00 am
Talk Session, Royal Ballroom 1-3
Moderator: John Wann

8:30 am
31.11 **Awareness and decision in monkey with blindsight** Masatoshi Yoshida, Kana Takaura, Tadashi Isa

8:45 am
31.12 **Decisions on "when" and "what" are biased by different temporal spans of past incidences** Dongho Kim, Shigeaki Nishina, Takeo Watanabe

9:00 am
31.13 **Structure Learning in sequential decision making** Paul Schrater, Daniel Acuna

9:15 am
31.14 **Optic Flow and Steering: Beyond MT+** John Wann, Jac Billington, David Field, Richard Wilkie

9:30 am
31.15 **Exposure to displaced optic flow results in adaptation of visual straight ahead.** Tracey Brandwood, Simon Rushton, Cyril Charron

9:45 am
31.16 **Stepping in the Right Direction: Control and Adaptation of Walking from Optic Flow** Hugo Bruggeman, William Warren, Jr.

Attention: Divided

Sunday, May 10, 8:30 – 10:00 am
Talk Session, Royal Ballroom 4-5
Moderator: David Carmel

8:30 am
31.21 **Afterimage duration and its modulation by attention and consciousness** Jeroen J.A. van Boxtel, Christof Koch

8:45 am
31.22 **A distinction between perceptual blindness and attentional blindness (I): low-contrast versus attentional distraction** Ryota Kanai, Chia-huei Tseng, Shih-wen Wang, Vincent Walsh

9:00 am
31.23 **Bright and dark attention: Distinct effect of divided attention at attended and unattended locations** David Carmel, Marisa Carrasco

9:15 am
31.24 **Both exogenous and endogenous target salience manipulations support resource depletion accounts of the attentional blink** Paul E. Dux, Christopher L. Asplund, René Marois

9:30 am
31.25 **Temporal dynamics of dividing spatial attention** Lisa N. Jefferies, James T. Enns, Vincent Di Lollo

9:45 am
31.26 **Neural decoding of semantic processing during the attentional blink** Barry Giesbrecht, Miguel P. Eckstein, Craig K. Abbey

Motion: Perception and Depth

Sunday, May 10, 11:00 am – 12:45 pm
Talk Session, Royal Ballroom 1-3
Moderator: Sergei Gepshtein

11:00 am
32.11 **Motion adaptation as a redistribution of visual sensitivity** Sergei Gepshtein, Luis Lesmes, Thomas Albright

11:15 am
32.12 **The coordinate system of the motion aftereffect is retinotopic** Tomas Knapen, Martin Rolfs, Patrick Cavanagh

11:30 am
32.13 **Asymmetric interaction between motion and stereopsis revealed by concurrent adaptation** Wonyeong Sohn, Sang-Hun Lee

11:45 am
32.14 **3D motion perception depends on eye-specific signals outside V1** Bas Rokers, Larry Cormack, Alex Huk

12:00 pm
32.15 **Cortical regions for the processing of stereoscopic motion in depth as revealed by fMRI in the alert rhesus monkey** Paul Gamlin, Matthew Ward, Lora Likova, Mark Bolding, Christopher Tyler

12:15 pm
32.16 **Vestibular input to human MST but not MT** Andrew T Smith, Matthew B Wall, Kai V Thilo

12:30 pm
32.17 **'Directionality' as an especially powerful cue to perceived animacy: Evidence from 'wolfpack' manipulations** Tao Gao, Gregory McCarthy, Brian J. Scholl

Object Recognition: From Features to Objects

Sunday, May 10, 11:00 am – 12:45 pm
Talk Session, Royal Ballroom 4-5
Moderator: Anya Hurlbert

11:00 am
32.21 **Features used or features available?** Ramakrishna Chakravarthi, Katharine A. Tillman, Denis G. Pelli

11:15 am
32.22 **Material Perception: What can you see in a brief glance?** Lavanya Sharan, Ruth Rosenholtz, Edward Adelson

11:30 am
32.23 **The interaction of colour and texture in an object classification task** Yazhu Ling, Ilaria Pietta, Anya Hurlbert

11:45 am
32.24 **Evidence for autocorrelation and symmetry detection in primary visual cortex** David Berry, Horace Barlow

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12:00 pm
32.25 **Cue dynamics underlying rapid detection of animals in natural scenes** James H. Elder, Ljiljana Velisavljevic

12:15 pm
32.26 **What mechanism underlies object priming effects under Continuous Flash Suppression?** Jorge Almeida, Bradford Mahon, Lukas Strnad, Ken Nakayama, Alfonso Caramazza

12:30 pm
32.27 **At 130 ms you "know" where the animal is but you don't yet "know" it's a dog** Michèle Fabre-Thorpe, Sébastien M. Crouzet, Chien-Te Wu, Simon J. Thorpe

Scene Perception: Categorization and Memory

Sunday, May 10, 8:30 am – 12:30 pm
Poster Session, Royal Ballroom 6-8

33.301 **Rapid scene understanding: evidence of global property processing before basic-level categorization** Michelle Greene, Soojin Park, Aude Oliva

33.302 **Searchlight analysis reveals brain areas involved in scene categorization** Dirk Walther, Eamon Caddigan, Diane Beck, Li Fei-Fei

33.303 **Categorization of good and bad examples of natural scene categories** Ana Torralbo, Barry Chai, Eamon Caddigan, Dirk Walther, Diane Beck, Li Fei-Fei

33.304 **Basic Level Scene Categorization Is Affected By Unrecognizable Category-Specific Image Features** Lester Loschky, Bruce Hansen, Anat Fintzi, Annie Bjerg, Katrina Ellis, Tyler Freeman, Steve Hilburn, Adam Larson

33.305 **Superordinate category advantage in scene categorization depends on within- and between-category similarity structure** Hayaki Banno, Jun Saiki

33.306 **Semantic guidance of eye movements during real-world scene inspection** Alex D. Hwang, Hsueh-Cheng Wang, Marc Pomplun

33.307 **Visual similarity does not systematically affect scene recognition** Emmanuelle Boloix, Aude Oliva

33.308 **The properties of incidental memory in change detection** Ryoichi Nakashima, Kazuhiko Yokosawa

33.309 **Negative Emotional Images Slow Down Initial Encoding Time** Mark W. Becker, Maor Roytman

33.310 **Implicit semantic features and aesthetic preference** Dragan Jankovic, Slobodan Markovic

33.311 **Don't look! Fixating occluded objects distorts scene memory** Kristin O. Michod, Helene Intraub

33.312 **Neural art appraisal of painter; Dali or Picasso?** Hiromi Yamamura, Yasuhito Sawahata, Miyuki Yamamoto, Yukiyasu Kamitani

33.313 **This is Your Brain on Art** Edward A. Vessel, G. Gabrielle Starr, Nava Rubin

33.314 **Effects of scene inversion on boundary extension** Jin-gi Kong, Ghootae Kim, Do-Joon Yi

33.315 **Experience-dependent psychological distance in a distance Stroop task** Hee-Kyung Bae, Kyung-Mi Kim, Jeehyang Rhim, Do-Joon Yi

33.316 **General and Specific Effects of Expertise on Change Detection** Melissa Beck, Benjamin Martin, Emily Smitherman, Lorrie Gaschen

Face Perception: Wholes, Parts, Configurations and Features

Sunday, May 10, 8:30 am – 12:30 pm
Poster Session, Royal Ballroom 6-8

33.317 **The use of shape and pigmentation information across the spectrum of face recognition ability** Richard Russell, Garga Chatterjee, Ken Nakayama

33.318 **The Role of Eyebrows in Face Recognition: With, Without, and Different** Jessie Peissig, Tamara Goode, Pamela Smith

33.319 **Are Local Changes in Faces Really Local?** Michael D. Anes, Nicholas A. Del Grosso, Darcy Dubuc

33.320 **Social monitoring: The psychophysics of facial communication** James T. Enns, Allison A. Brennan

33.321 **The discrimination of features, configuration and contour by patients with acquired prosopagnosia** Alla Sekunova, Jason Barton

33.322 **Classification of fMRI activation patterns in face-sensitive cortex to the parts and location of faces** Lisa Betts, David Nichols, Hugh Wilson

33.323 **The fusiform face area is recruited more for sequential than holistic processing: an aperture viewing study** Thomas James, Eunji Huh, Sunah Kim

33.324 **Flexible Neural Tuning for Face Parts and Wholes in the Fusiform Face Area** Alison Harris, Geoffrey Aguirre

33.325 **Configural information in mother's face perception for infants.** Emi Nakato, So Kanazawa, Masami K. Yamaguchi, Ryusuke Kakigi

33.326 **Can Motion Cues Facilitate Configural Face Processing in Children?** Gina Shroff, Annissa Mirabal, Peter Gerhardstein

33.327 **Does holistic processing predict face identification? The effect of aging** Yaroslav Konar, Patrick J Bennett, Allison B Sekuler

33.328 **Spatial structure and whole-object processing in acquired prosopagnosia: the meaning of configuration** Jason J S Barton

33.329 **Acquired prosopagnosia following right unilateral brain damage: Impairment specific to holistic processing of the individual face.** Thomas Busigny, Sven Joubert, Olivier Felician, Mathieu Ceccaldi, Bruno Rossion

33.330 **Detecting the Thatcher illusion in a case of prosopagnosia.** Nick Donnelly, Tamaryn Menneer, Katherine Cornes, Natalie Mestry, Rosaleen McCarthy

33.331 **Squirrel monkey (Saimiri sciureus) can perceive Thatcher Illusion.** Ryuzaburo Nakata, Yoshihisa Osada

33.332 **Contrasting methods of model estimation for configural and holistic perception** Tamaryn Menneer, Noah Silbert, Kathryn Cornes, Michael Wenger, James Townsend, Nick Donnelly

Attention: Brain Mechanisms

Sunday, May 10, 8:30 am – 12:30 pm
Poster Session, Orchid Ballroom

33.401 **CONUS masking reveals saliency representation in reach-related areas of the posterior parietal cortex** Claudia Wilimzig, Markus Hauschild, Christof Koch, Richard Andersen

33.402 **Behaviorally-related variability of hemodynamic responses in macaque V4** Anna W. Roe, Soo R. Yang, Hisashi Tanigawa

33.403 **Attentional enhancement of orientation responses in human visual cortex depends on task** Janneke Jehee, Devin Brady, Frank Tong

33.404 **Attentional modulation in human visual cortex is constrained by the degree of competition among stimuli** Stephanie McMains, Sabine Kastner

33.405 **Active ignoring in early visual cortex** Helen Payne, Harriet Allen

33.406 **Up and down-regulation of visual cortex by posterior parietal cortex modulates selection-by-saliency: Evidence from combined TMS-fMRI** Carmel Mevorach, Harriet Allen, John Hodsoll, Lilach Shalev, Glyn Humphreys

33.407 **Disentangling selective attention from orienting of attention** Lilach Shalev, Ido Davidesco, Carmel Mevorach, Gadi Goelman

33.408 **Neural Mechanisms of Voluntary and Involuntary Attention** Ayelet Landau, William Prinzmetal, Lynn Robertson, Michael Silver

33.409 **Attention gates spatial coding in the human pulvinar** Jason Fischer, David Whitney

33.410 **Priming and backward interference in the human brain: SOA manipulations reveal processing interactions during the Stroop and reverse Stroop tasks** Lawrence Appelbaum, Wen Chen, Karen Meyerhoff, Lauren Davis, Robert Won, Marty Woldorff

33.411 **Neural Correlates of the Right-Brain Dominance for Spatial Processes** Ada Le, Matthew T. Keough, Boge Stojanoski, Matthias Niemeier

33.412 **The role of the ventrolateral frontoparietal attention network in social attention** Jelena Ristic, Barry Giesbrecht

33.413 **Localization contributes to feature binding: A transcranial magnetic stimulation study** Li Jingling, Yu-Chin Lin, Chon-Haw Tsai, Wei-Ming Huang

33.414 **The role of a sustained left parietal-occipital component in the serial chaining of two cognitive operations** Kimron Shapiro, Zhao Fan, Suresh Muthukumaraswamy, Krish Singh

33.415 **Prism adaptation reverses the local processing bias in patients with right temporo-parietal junction lesions.** Janet Bultitude, Robert Rafal, Alexandra List

33.416 **Magnocellular VEP delay in high Autism Quotient individuals: Absence of the Magnocellular Advantage may explain poor global identification of locally salient Navon figures.** David Crewther, Alexandra Sutherland

33.417 **Electrophysiological Evidence of Shifts in Spatial Attention Corresponding to a Synaesthetes' Mental Calendar** Michelle Jarick, Colin Hawco, Todd Ferretti, Mike Dixon

Perceptual Organization: Segmentation

Sunday, May 10, 8:30 am – 12:30 pm
Poster Session, Orchid Ballroom

33.418 **What determines the degree of transparency of a visual surface?** Marc K. Albert

33.419 **Curvature-based segregation for multi-oriented textures** Guy Ben-Yosef, Ohad Ben-Shahar

33.420 **Perception of average orientation** Heeyoung Choo, Steven Franconeri

33.421 **Figure-Ground Segmentation determines Contextual Learning in Visual Search** Markus Conci, Adrian von Mühlenen

33.422 **Competition-induced Suppression in Figure-Ground Perception Spans Multiple Levels** Elizabeth Salvagio, Mary A. Peterson

33.423 **On the relationship between attention and figure-ground perception** Andrew Mojica, Elizabeth Salvagio, Ruth Kimchi, Mary Peterson

33.424 **Scale of attention influences figure-ground assignment** Lauren Hecht, Shaun Vecera

33.425 **Statistical learning in everyday perception: The case of variable segment lengths** Riana J. Betzler, Nicholas B. Turk-Browne, Morten H. Christiansen, Brian J. Scholl

33.426 **Temporal grouping in figure-ground segregation and the influence of spatial structure** Samuel Cheadle, Marius Usher

33.427 **Psychophysical Evidence for Object Segregation Through Endogenous Asynchrony** Aaron Clarke, Stéphane Rainville

33.428 **Persistence of border ownership signals does not reflect capture of attention** Philip O'Herron, Rudiger von der Heydt

33.429 **Perceptual learning differs for detection and discrimination: evidence from contrast, texture, motion, stereo and colour thresholds.** Antje Kraft, Cathleen Grimsen, Stefanie Kehrer, Anika Lipfert, Martin Koehnlein, Manfred Fahle, Stephan A. Brandt

33.430 **Effects of healthy aging on visual detection and discrimination: evidence from contrast, texture, motion, stereo and colour thresholds** Cathleen Grimsen, Antje Kraft, Tatjana Zawislo, Karoline Spang, Stephan A. Brandt, Manfred Fahle

33.431 **Is segmentation from motion parallax influenced by perceived depth ?** Ahmad Yoonessi, Curtis Baker

Memory: Visual Learning and Memory

Sunday, May 10, 8:30 am – 12:30 pm
Poster Session, Orchid Ballroom

33.432 **Effects of Training to Perform a Working Memory Task on Regular Spiking and Fast Spiking Neurons in the Lateral Prefrontal Cortex** Xuelian Qi, Travis Meyer, Christos Constantinidis

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33.434 **Memory for visual items of central or marginal interest: Impact of eye movements and subject's expertise** Adelaide Blavier, Anne-Sophie Nyssen

33.435 **Auditory recognition memory is inferior to visual recognition memory** Michael Cohen, Todd Horowitz, Jeremy Wolfe

33.436 **Memory for natural images: The role of visual and conceptual features** Gesche M. Huebner, Jurena Wille, Karl R. Gegenfurtner

33.437 **A role for color in memory for known and unknown faces?** Maarten van der Smagt, Karin Gerrits, Tanja Nijboer

33.438 **How fast is the search for a change in change detection?** Joo-Seok Hyun, Steven Luck

33.439 **Does item familiarity influence change detection performance?** Melinda Jensen, Dan Simons

33.440 **Memory for motion is optimally represented in spatiotopic coordinates.** Wei Song Ong, Nina Hooshvar, James Bisley

33.441 **A biologically inspired psychometric function for accuracy of visual identification as a function of exposure duration** Anders Petersen, Tobias S. Andersen

33.442 **Is Sensory or Mnemonic Information Better for Matching Objects?** Jane Raymond, Zhao Fan, Tarique Rayani, Kimron Shapiro

33.443 **Increased vSTM for Sequential Displays - Behavioural and Neuronal Dynamics** Niklas Ihssen, David Linden, Kimron Shapiro

33.444 **What Is Capacity? Grounding Cognitive Concepts in Neural Dynamics with a Dynamic Neural Field Model of Visual Working Memory** John Spencer, Jeffrey Johnson, Vanessa Simmering

33.445 **Hippocampal-dependent implicit visual memory improves with practice, not sleep.** Sara Mednick, Tal Makovski, Denise Cai, Yuhong Jiang

33.446 **Object appearance is not integrated with scene viewpoint in long-term memory.** D. Alexander Varakin, Lester Loschky

33.447 **Unfiltered and Unforgotten: The Fate of Irrelevant Visual Stimuli in Elderly Adults** Carson Pun, Maha Adamo, Peter J Lenkic, Susanne Ferber

Object Recognition: Reading

Sunday, May 10, 8:30 am – 12:30 pm
Poster Session, Orchid Ballroom

33.449 **A model of optimal oculomotor strategies in reading for normal and damaged visual fields** Jean-Baptiste Bernard, Fermin Moscoso Del Prado, Anna Montagnini, Eric Castet

33.450 **Direction Discrimination Training Removes Timing Deficits in the Dorsal Pathway that Impair Reading Ability** Teri Lawton

33.451 **Sensory Factors Limiting Horizontal and Vertical Reading Speed** Deyue Yu, Gunther Wagoner, Gordon E. Legge, Susana T. L. Chung

33.452 **A Medium spatial frequency trough causes letter-by-letter dyslexia in normal readers** Karine Tadros, Daniel Fiset, Frédéric Gosselin, Martin Arguin

33.453 **Sensory and Cognitive Predictors of Reading Speed in Children** Tiana M. Bochsler, Gunther Wagoner, Gordon E. Legge

33.454 **Server-based website for low vision to access Google Map** Jianwei Lu, Aries Arditi

Vision and Action: Posture, Wayfinding, and Whacking

Sunday, May 10, 8:30 am – 12:30 pm
Poster Session, Vista Ballroom

33.501 **Does false representation of body in anorexia nervosa affect visual perception of action possibilities?** Marion Luyat, Dewi Guardia, Gilles Lafargue, Pierre Thomas

33.502 **The impact of aging on postural reactivity generated by simulated ophthalmic lenses distortions** Jean-Marie Hanssens, Melody Moulin, Remy Allard, Jocelyn Faubet

33.503 **Visual manifestation of body schema abnormalities in a case of alien hand syndrome** Daw-An Wu, Thomas Carlson, George Alvarez, Patrick Cavanagh

33.504 **Creating and shaping Body-action space** Ava J. Senkfor

33.505 **Looking without seeing: Two puzzling findings** Laura Wolk, Frank Durgin, Alen Hajnal

33.506 **Looming detection within natural scenes and potential errors in roadside judgments** Damian Poulter, John Wann, Catherine Purcell, Kate Wilmut

33.507 **The outer limits: How limiting the field of view impacts navigation and spatial memory.** Pearl S. Guterman, Robert S. Allison, Sion Jennings, Greg Craig, Avi Parush, Michelle Gauthier, Todd Macuda

33.508 **Parietal processing of visual information specifying "where I'm going next"** David Field, Jac Billington, John Wann, Richard Wilkie

33.509 **"Rips" and "folds" in virtual space: Ordinal violations in human spatial knowledge** Jonathan Ericson, William Warren

33.510 **The Contributions of Global and Local Object Landmarks in Human Wayfinding Behavior** Wen-Jing Lin, Teng-Yi Huang, Li-Wei Ko, Chin-Teng Lin, Daisy L. Hung, Erik C. Chang

33.511 **The Traveling Salesman Problem in the Natural Environment** Flip Phillips, Oliver Layton

33.512 **The Importance of Body-Based Cues for Travelled Distance Perception** Jennifer Campos, John Butler, Heinrich Buelthoff

33.513 **Do actors pick up information on the fly to perceive possibilities for action?** Brett Fajen, Jon Matthis, Chris Cramer

33.514 **A Dissociation Between Perception and Action in the Material-Weight Illusion.** Gavin Buckingham, Jonathan S. Cant, Kai-Ling C. Kao, Melvyn A. Goodale

33.515 **Smooth pursuit and manual interception** Eli Brenner, Jeroen B.J. Smeets

33.516 **Combining information across time for successful catching** Joan López-Moliner, Eli Brenner, Stefan Louw, Jeroen Smeets

33.517 **Internal models in two-dimensional target motion prediction and interception.** Alessandra Sciutti, Francesco Nori, Giorgio Metta, Thierry Pozzo, Giulio Sandini

33.518 **Sub-cortical responses to looming objects: An fMRI study of human interception of footballs.** Jac Billington, John Wann, David Field, Richard Wilkie

33.519 **Visually perceived distances map onto different forms of throwing for adults and children** John Rieser, Gayathri Narasimham, Peter Capucilli, Aysu Erdemir

Binocular Vision: Brain and Behavior

Sunday, May 10, 8:30 am – 12:30 pm
Poster Session, Vista Ballroom

33.520 **Spatial stereoresolution** Fredrik Allenmark, Jenny Read

33.521 **The effects of surface shape on sensitivity to disparity-defined stimuli corrupted by binocular decorrelation** Lisa O'Kane, Paul Hibbard, Ross Goutcher

33.522 **Transfer of Perceptual Learning Between Local and Global Random-Dot Stereograms** Liat Gantz, Harold Bedell

33.523 **Local binocular depth contrast effects on surface edges** Hiroaki Shigemasu, Mitsuhiro Yoshida, Michiteru Kitazaki

33.524 **The effect of binocular disparity on the detection of curved trajectories** Russell Pierce, Zheng Bian, George Andersen

33.525 **The coarse vs. fine dichotomy in stereopsis: a matter of scale** Debi Stransky, Laurie M. Wilcox

33.526 **Percept-related differences found in the pupillary response to physically identical luminance changes** Eiji Kimura, Koharu Tanaka, Satoru Abe, Ken Goryo

33.527 **The influence of TMS over MT on perceptual memory in structure-from-motion rivalry** Jan Brascamp, Ryota Kanai, Vincent Walsh, Raymond Van Ee

33.528 **Coarse and fine disparity sensitivity in human visual cortex** Loredana Minini, Andrew Parker, Holly Bridge

33.529 **A simultaneous depth and rivalry paradigm imaged with fMRI.** Athena Buckthought, Janine D. Mendola

33.530 **High-resolution imaging of the human thalamus and superior colliculus during binocular rivalry** Keith A. Schneider

33.531 **Electrophysiological correlates of motion-induced blindness** Li-Chuan Hsu, Su-Ling Yeh, Yi-Min Tien, Chia-Yao Lin

33.532 **Do the same lateral interactions support collinear facilitation and binocular summation?** Oren Yehezkel, Anna Sterkin, Uri Polat

33.533 **Visual awareness correlates with layer-specific activity in primary visual cortex.** Alexander Maier, Christopher Aura, David Leopold

33.534 **Early stages of figure-ground segregation: ERP components associated with face-vase perception.** Michael Pitts, Antigona Martinez, James Brewer, Steve Hillyard

33.535 **Deterministic neural process for stochastic perception** Yohei Yamada, Katsuyuki Sakai, Yukiyasu Kamitani

Multisensory Processing: Cross-modal Perception

Sunday, May 10, 8:30 am – 12:30 pm
Poster Session, Vista Ballroom

33.536 **Vibrotactile activation in areas MT, MST and FST revealed by intrinsic-signal optical imaging in anesthetized New World monkeys** Robert Friedman, Barbara Dillenburger, Peter Kaskan, Jon Kaas, Anna Roe

33.537 **Cross facilitation of visual and haptic motion** David Burr, Monica Gori, Giulio Sandini

33.538 **Visual-haptic integration during pointing movements** Sascha Serwe, Julia Trommershäuser, Konrad Körding

33.539 **Adapting the figure-ground cue of convexity: haptic feedback changes the visual perception of depth** Monica Gori, Johannes Burge, Martin S. Banks

33.540 **Tactile localization is affected by simultaneously presented visual stimuli** Vanessa Harrar, Ilja Frissen, Laurence R. Harris

33.541 **Visual motion cues affect tactile motion perception** Justin Harris, Ehsan Arabzadeh, Colin Clifford

33.542 **Keep your eye on the rabbit: Cross-modal influences on the cutaneous rabbit illusion** Richard Yao, Daniel Simons, Tony Ro

33.543 **Not peripersonal space but the working area of the hand determines the presence and absence of the visual capture of the felt hand location in a mirror along the sagittal plane** Takako Yoshida, Yuki Miyazaki, Tenji Wake

33.544 **The Time Course of Proprioceptive Drift in the Rubber Hand Illusion** Marieke Rohde, Massimiliano Di Luca, Marc O. Ernst

33.545 **Two Studies of Phantom Sensations: (1) Mirror Therapy for Bilateral Amputees; (2) Mirror Symmetric View of Self Causes Paresthesias in Some Non-Amputees** David Peterzell

33.546 **Visual capture may influence body-based judgments of object extent** Benjamin R. Kunz, J. Scott Lauritzen, William B. Thompson, Sarah H. Creem-Regehr

33.547 **Rotating sound fields can facilitate biomechanical self-motion illusion ("circular vection")** Bernhard E. Riecke, Daniel Feuereissen, John J. Rieser

33.548 **How do SCUBA divers know which way is up? The influence of buoyancy on orientation judgements.** Heather Jenkin, James Zacher, Richard Dyde, Laurence Harris, Michael Jenkin

33.549 **Spatial adaptation following tool use.** Liana Brown, Robert Doole, Nicole Malfait

33.550 **Visual-haptic integration: Evidence for dynamic rescaling of visual and haptic signals during tool use** Chie Takahashi, Jörn Diedrichsen, Simon J. Watt

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Perceptual Organization: Brain Mechanisms

Sunday, May 10, 2:45 – 4:15 pm
Talk Session, Royal Ballroom 1-3
Moderator: Harriet Allen

2:45 pm
34.11 **Common processes for segmentation by time and motion.** Harriet Allen, Kevin Dent, Glyn Humphreys

3:00 pm
34.12 **Analysis of the Context Integration Mechanism in Border Ownership Coding** Rudiger von der Heydt, Nan R. Zhang

3:15 pm
34.13 **Modulatory effects of attention on the sensitivity to real and implicit motion: a high-density EEG study** Melanie Palomares, Justin Ales, Anthony Norcia

3:30 pm
34.14 **Cortical representation of texture and scale studied with fMRI** Geoffrey Aguirre, Wesley Kerr, Daniel Drucker

3:45 pm
34.15 **Representation of broadband edges and spatial phase congruency in human visual cortex** Linda Henriksson, Aapo Hyvärinen, Simo Vanni

4:00 pm
34.16 **Neural correlates of perceptual grouping in the occluded diamond illusion** Justin Ales, Gideon Caplovitz, Anthony Norcia

Face Perception: Temporal Effects and Dynamics

Sunday, May 10, 2:45 – 4:15 pm
Talk Session, Royal Ballroom 4-5
Moderator: Guillaume Rousselet

2:45 pm
34.21 **Temporal dynamics of face spatial frequency processing: an fMRI masking experiment.** Valerie Goffaux, Judith Peters, Christine Schiltz, Bernadette Jansma, Rainer Goebel

3:00 pm
34.22 **Age-related delay in information accrual for faces: Evidence from a parametric, single-trial EEG approach** Guillaume Rousselet, Jesse Husk, Cyril Pernet, Carl Gaspar, Patrick Bennett, Allison Sekuler

3:15 pm
34.23 **Does Temporal Integration of Face Parts Reflect Holistic Processing?** Olivia Cheung, Jennifer Richler, Stewart Phillips, Isabel Gauthier

3:30 pm
34.24 **The human brain recognizes individual faces faster from shape than surface reflectance diagnostic information** Stéphanie Caharel, Fang Jiang, Volker Blanz, Bruno Rossion

3:45 pm
34.25 **Masking in a high-level gender discrimination task is essentially entirely pre-cortical.** Simon J. Thorpe, Sébastien M. Crouzet, Marc J.M. Macé, Nadège Bacon-Macé, Michèle Fabre-Thorpe

4:00 pm
34.26 **Other-Race Faces All Look Alike to Me and My N170** Luca Vizioli, Guillaume Rousselet, Kay Foreman, Roberto Caldara

Neural Mechanisms: Encoding and Decoding

Sunday, May 10, 5:15 – 7:00 pm
Talk Session, Royal Ballroom 1-3
Moderator: Nicole Rust

5:15 pm
35.11 **Pattern motion selectivity of local field potentials in macaque visual cortex** Farhan A. Khawaja, James M.G. Tsui, Christopher C. Pack

5:30 pm
35.12 **Influence of contrast on the pattern direction selectivity of macaque MT neurons** Romesh D. Kumbhani, Najib J. Majaj, Golbarg T. Saber, J. Anthony Movshon

5:45 pm
35.13 **Orthogonal circuits for binocular disparity and ocular dominance in visual cortex** Prakash Kara, Jamie Boyd

6:00 pm
35.14 **Motion processing in the ventral pathway: evidence for direction maps in macaque V2 and V4** Haidong Lu, Gang Chen, Anna Roe

6:15 pm
35.15 **Balanced increases in selectivity and invariance produce constant sparseness across the ventral visual pathway** Nicole C. Rust, James J. DiCarlo

6:30 pm
35.16 **The phase of ongoing EEG oscillations predicts visual perception** Niko Busch, Julien Dubois, Rufin VanRullen

6:45 pm
35.17 **Decoding velocity from population responses in area MT of the macaque** Alan A Stocker, Najib Majaj, Chris Tailby, J Anthony Movshon, Eero P Simoncelli

Visual Search: Mechanisms and Models

Sunday, May 10, 5:15 – 7:00 pm
Talk Session, Royal Ballroom 4-5
Moderator: Ruth Rosenholtz

5:15 pm
35.21 **Does visual search involve a salience map?** Louis Chan, William Hayward

5:30 pm
35.22 **The benefits of similar neural representations of the target for saccades and perception revealed by virtual evolution of an ideal searcher with two separate processing pathways** Miguel P Eckstein, Sheng Zhang

5:45 pm
35.23 **Modeling visual search in a thousand scenes: The roles of saliency, target features, and scene context** Krista Ehinger, Barbara Hidalgo-Sotelo, Antonio Torralba, Aude Oliva

6:00 pm
35.24 **A Crowded Model of Visual Search** Ruth Rosenholtz, Stephanie Chan, Benjamin Balas

6:15 pm
35.25 **Searching aerial images: Evidence for scene constraints in the absence of global context** Gregory Zelinsky, Joseph Schmidt

6:30 pm
35.26 **Don't underestimate the Force: Learning to have a hunch in visual search** Jeremy Wolfe, Yoana Kuzmova

6:45 pm
35.27 **Training determines the target representation for search** Mary Bravo, Hany Farid

3D Perception: Space

Sunday, May 10, 2:45 – 6:45 pm
Poster Session, Royal Ballroom 6-8

36.301 **Breaking space: intransitivity of distance judgements** Ellen Svarverud, Stuart J. Gilson, Andrew Glennerster

36.302 **Hilltop (non) occlusion: A new cue for perceiving (the absence of) slope** Anna Ruff, Zhi Li, Frank Durgin

36.303 **Hills look less steep from the edge: Proprioceptive error and frontal tendency affect the perception of downhill slopes** Zhi Li, Frank Durgin

36.304 **The perception of slope by eye, hand, foot, and finger: Evidence for an amodal vertical tendency** Alen Hajnal, Frank Durgin

36.305 **The Intrinsic Bias of Space Perception Is Updated During Walking** Lei Zhu, Zijiang He, Teng Leng Ooi

36.306 **Perspective-taking changes perceived spatial layout** Elyssa Twedt, Carlee B. Hawkins, Dennis Proffitt

36.307 **Aging and egocentric distance judgments in 3-D scenes** Zheng Bian, George Andersen

36.308 **Verbal and Spatial Reasoning Abilities Predict Far Distance Size Estimation Performance in Middle Childhood** Carl Granrud, William Merriman, Zachariah Moore

36.309 **The connection effect in the disconnect between peripersonal and extrapersonal space** Brian Garrison, Colin Ellard

36.310 **Kicking to Bigger Uprights: Field Goal Kicking Performance Influences Perceived Size** Jessica Witt, Travis Dorsch

36.311 **Common processing for two perceptual tasks in different spatial dimensions in response to identical visual stimuli.** Adam Shavit, Wenxun Li, Leonard Matin

36.312 **The role of shadow in 3D object representation: Evidence from shadow-specific priming.** Pamela Arnold, Toby Lloyd-Jones, Charles Leek

36.313 **Non-linear calibration of a non-see-through head mounted display** Stuart J. Gilson, Andrew W. Fitzgibbon, Andrew Glennerster

36.314 **What's so special about the N170? Modulation of N170 by geometric shape attributes of three-dimensional (3D) objects.** Charles Leek, Mark Roberts, Irene Reppa, Alan Pegna

Memory: Working and Short-term Memory

Sunday, May 10, 2:45 – 6:45 pm
Poster Session, Royal Ballroom 6-8

36.315 **The Nature of the Capacity Limitations in Visual Short-Term Memory** Thomas Alrik Sørensen, Søren Kyllingsbæk

36.316 **Measuring VSTM 'iconic' memory capacity in 6-month-old infants** Erik Blaser, Zsuzsa Kaldy, Marisa Biondi

36.317 **Durability of feature-based and object-based representations in visual short-term memory** David Fencsik, Jessica Heaton

36.318 **Visual short-term memory for abstract patterns: Effects of symmetry, element connectedness, and probe quadrant.** Han-Chang Lai, Sarina Hui-Lin Chien, Wen-Yen Kuo

36.319 **Dual impact of extra-foveal processing in human visual short-term memory** Raju Sapkota, Shahina Pardhan, Ian van der Linde

36.320 **Experience-dependent distortions in working memory for metrically similar colors** Jeffrey S. Johnson, John P. Spencer

36.321 **Contralateral delay activity is sensitive to the spatial distribution of items in working memory: An ERP study** Lingling Wang, Steven B. Most, James E. Hoffman

36.322 **Estimating visual working memory capacity with whole and single probe test arrays** Nathaniel J.S. Ashby, Keisuke Fukuda, Edward K. Vogel

36.323 **Visual working memory capacity can be assessed independent of comparison errors** Daryl Fougnie, Christopher L. Asplund, René Marois

36.324 **Location and Meaningful Visual Detail Influence Cross-modal Working Memory Capacity** Anne Gilman, Colin Ware

36.325 **Assessing sensory gain during the maintenance of information in working memory** Miranda Scolari, John T. Serences

36.326 **A Bilateral Advantage for Resolution in Visual Working Memory** Akina Umemoto, Trafton Drew, Edward Ester, Edward Awh

36.327 **Indexing the Maintenance of Objects in Visual Working Memory by Spatial Selection** Melonie Williams, Pierre Pouget, Leanne Boucher, Geoffrey Woodman

36.328 **The interactive nature of multiple stimulus representations in visual-short term memory** Eunsam Shin, Monica Fabiani, Gabriele Gratton

36.329 **Multiple physiological markers of visual short-term memory: convergence and divergence.** Nicolas Robitaille, Stephan Grimault, Jay Todd, René Marois, Douglas Cheyne, Pierre Jolicoeur

36.330 **Grey matter volume explains individual differences in visual short-term memory capacity** Ilja G. Sligte, H. Steven Scholte, Victor A.F. Lamme

36.331 **Global mechanisms of sensory recruitment during working memory maintenance.** Edward Ester, John Serences, Edward Awh

36.332 **The neural correlates of visual working memory consolidation: A time-resolved fMRI study** Jay Todd, Suk Won Han, Stephenie Harrison, René Marois

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Attention: Endogenous and Exogenous

Sunday, May 10, 2:45 – 6:45 pm
Poster Session, Orchid Ballroom

36.401 **Involuntary but not voluntary orienting modulates the splitting of attention** Peter Squire, Pamela Greenwood, Raja Parasuraman

36.402 **Effects of cholinergic enhancement on voluntary and involuntary visuospatial attention in humans** Ariel Rokem, Dave Garg, Ayelet Landau, William Prinzmetal, Michael Silver

36.403 **Visuospatial neglect: Reflexive but not volitional orienting contributes to a disengage deficit** Bettina Olk, Alan Kingstone

36.404 **Co-determination of attentional allocation by endogenous and exogenous factors** Charles Mander, James H. Elder, Jocelyn Keillor, Yuqian Hou

36.405 **Auditory Effects on the Timing of Exogenous and Endogenous Visual Attention** Mirjam Keetels, Jean Vroomen

36.406 **Individual Differences in Voluntary and Involuntary Attention** Deena Elwan, Ayelet Landau, Sarah Holtz, Han Duong, William Prinzmetal

36.407 **Differential effects of transient attention on adaptation to different spatial frequencies** Yaffa Yeshurun

36.408 **Effects of faces as exogenous cues are dependent on visual field and handedness** Emma Ferneyhough, Damian Stanley, Elizabeth Phelps, Marisa Carrasco

36.409 **What does a short-SOA exogenous cue do in a so-called simple-RT task?** Peii Chen, J.Toby Mordkoff

36.410 **Endogenous attention alters the appearance of spatial frequency** Jared Abrams, Antoine Barbot, Marisa Carrasco

36.411 **Endogenous attention can reduce the tilt illusion, but not crowding.** Isabelle Mareschal, Joshua Solomon, Michael Morgan

36.412 **On the exploration of surface-based attention with cuing task** Yu-Chieh Chang, Shwu-Lih Huang, Hung-Wei Lee

Object Recognition: Objects and Categories

Sunday, May 10, 2:45 – 6:45 pm
Poster Session, Orchid Ballroom

36.413 **Is There an Object-Centered Coordinate Map in LOC?** Mark D Lescroart, Kenneth J Hayworth, Irving Biederman

36.414 **Evidence for Object File Encoding in the Posterior Fusiform Gyrus (pFs) and the Intraparietal Sulcus (IPS)** Kenneth Hayworth, Mark Lescroart, Jiye Kim, Irving Biederman

36.415 **The visual system ignores outliers when extracting a summary representation** Jason Haberman, David Whitney

36.416 **Discovering the Structure of Object Representation through fMRI Clustering** Edward Vul, Danial Lashkari, Polina Golland, Po-Jang Hsieh, Nancy Kanwisher

36.417 **Subliminal Priming effect of Word and Object on Object Recognition: an ERP Study** Yi-Min Tien, Li-Chuan Hsu, Chia-Yao Lin

36.418 **Reading pictures** Katharine Tillman, Denis Pelli

36.420 **The penetration of visual representations by conceptual categories** Gary Lupyan, Sharon Thompson-Schill, Daniel Swingley

36.421 **EEG signals of rapid visual categorization in monkeys, in V4 area** Denis Fize, Ghislaine Richard, Christophe Jouffrais, Michèle Fabre-Thorpe

36.422 **Cortical Dynamics of Invariant Category Learning and Recognition of Realistic Objects** Jeffrey Markowitz, Yongqiang Cao, Stephen Grossberg

36.423 **Quantifying the Role of Context in Visual Object Recognition** Elan Barenholtz

36.424 **Experience can determine category selectivity in the visual system** Alan C.-N. Wong, Thomas Palmeri, Baxter Rogers, John Gore, Isabel Gauthier

36.425 **Learned Reorganization of Invariant Object Category Selectivity in Inferotemporal Cortex during Eye Movement Search** Yongqiang Cao, Stephen Grossberg, Jeffrey Markowitz

36.426 **Processing two visual categories at once: "OR" is easy, but "AND" takes time** Olivier R. Joubert, Mathieu J. Ruiz, Michèle Fabre-Thorpe

36.427 **Visually evoked EEG activity differentiates individuals during a perceptual categorization task but preparatory or late activity does not** Koel Das, Sheng Zhang, Barry Giesbrecht, Miguel P Eckstein

36.428 **Influences of Contextual Information on Rapid Object Categorization in Natural Scenes** Hsin-Mei Sun, Robert D. Gordon

Color and Light: Color Appearance

Sunday, May 10, 2:45 – 6:45 pm
Poster Session, Orchid Ballroom

36.430 **Color appearance and compensation in the near periphery** Kimberley Halen, Andrew Meyers, Patricia Winkler, John Werner, Michael Webster

36.431 **Transitions from negative to switch color afterimages** Daniel R. VanHorn, Gregory Francis

36.432 **Simultaneous Color Contrast Pulls Out the Color Common to the Background and Test Patch or Bleaches the Test Patch If There Is No Common Color** Eric Altschuler, Abigail Huang, Alice Hon

36.433 **Effect of chromatic surround variance on color appearance in a real environment** Yoko Mizokami, Hirohisa Yaguchi

36.434 **Reversing the watercolor effect** Adam Reeves, Rebecca Grayhem

36.435 **SHAME: A new spatial hue angle metric for perceptual image difference** Marius Pedersen, Jon Y. Hardeberg

36.436 **The situated laptop: a tangible interface for computer-based studies of surface appearance** Benjamin Darling, James Ferwerda

36.437 **Preferred greyscale versions of coloured images: human vs machine** Marina Bloj, David Connah, Graham Finlayson

36.438 **Color difference scaling at the blue-green color category boundary as a test of the Sapir-Whorf Hypothesis** Delwin Lindsey, Angela Brown

36.439 **How color might look to others – adapting images to simulate color appearance across different environments** Igor Juricevic, Michael Webster

36.440 **Representation of color naming category boundaries on dichromats along their confusion loci using a chromatic-opponent channel model** Hisashi Komine, Keizo Shinomori, Shigeki Nakauchi

36.441 **Color Naming Ability in Monochromats and Dichromats** James Nolan, Shannon Riley

36.442 **Color constancy in 4- to 5- month old infants** Jiale Yang, So Kanazawa, Masami K. Yamaguchi, Ichiro Kuriki

36.443 **Surface Discrimination of Natural Objects: When is a Blue Kiwi Off-Colour?** Anya Hurlbert, Ilaria Pietta, Milena Vurro, Yazhu Ling

36.444 **Categorization of surface colors during natural twilight: A field study** Roger Knight, Eileen Knight

36.445 **Categorical color constancy for rendered and real surfaces** Maria Olkkonen, Christoph Witzel, Thorsten Hansen, Karl Gegenfurtner

36.446 **Working Memory Predicts Individual Differences In Color Constancy** Elizabeth Allen, Sian Beilock, Steven Shevell

36.447 **Memory colours of polychromatic objects** Milena Vurro, Yazhu Ling, Anya Hurlbert

36.448 **Preference for Color-pairs within Finely Sampled Color Space** Matthew Barker-Benfield, Karen B. Schloss, Stephen E. Palmer

36.449 **Preference for Three-Color Combinations in Varying Proportions** Rosa M. Poggesi, Karen B. Schloss, Stephen E. Palmer

36.450 **The Role of Spatial Composition in Preference for Color Pairs** Christine E. Nothelfer, Karen B. Schloss, Stephen E. Palmer

36.451 **Cross-Cultural Differences in Color Preference: Japan vs. the USA** Wakako Fushikida, Karen Schloss, Kazuhiko Yokosawa, Stephen Palmer

36.452 **The Relationship between Color and Form in Judgments of Preference and Harmony** Gary Hackett, Karen B. Schloss, Stephen E. Palmer

36.453 **Color Harmony Increases the Capacity of Visual Short Term Memory** Thomas Sanocki, Noah Sulman

Motion: Depth and Optic Flow

Sunday, May 10, 2:45 – 6:45 pm
Poster Session, Vista Ballroom

36.501 **Selective adaptation of 3D motion mechanisms** Thaddeus B. Czuba, Kyle R. Guillet, Lawrence K. Cormack, Alexander C. Huk, Bas Rokers

36.502 **Slant stereomotion: A new kind of depth motion from modulation of interocular spatial frequency difference** Christopher Tyler, Lora Likova, Spero Nicholas

36.503 **Comparing Binocular, Biocular and Monocular Cues for Time-To-Contact** Catherine E Grafton, Harold T Nefs, Julie M Harris

36.504 **Discriminating curved from straight motion trajectories in 3D scenes** Shaw Gillespie, Myron Braunstein, George Andersen

36.505 **Measuring azimuth and elevation of binocular 3D motion direction** Suzanne Heron, Martin Lages

36.506 **Testing generalized models of binocular 3D motion perception** Martin Lages, Suzanne Heron

36.507 **Contributions of vergence, looming, and relative disparity to the perception of motion in depth** Kazuho Fukuda, Ian P. Howard, Robert S. Allison

36.508 **Individual differences reveal two independent motion-in-depth mechanisms** Harold Nefs, Louise O'Hare, Julie Harris

36.509 **Does the motion/pursuit law accurately characterize the perception of depth from motion parallax?** Mark Nawrot, Lindsey Joyce, Keith Stroyan

36.510 **A Bayesian ideal observer for perceiving heading and rotation from optic flow** Jeffrey Saunders, Diederick Niehorster

36.511 **A comparison of motion integration for optic flow components** Alan Lee, Hongjing Lu

36.512 **Cortical distribution of asymmetric responses to radial expansion/contraction in human adults and infants.** Nobu Shirai, Tomoko Imura, Deirdre Birtles, Shirley Anker, Shigeru Ichihara, John Wattam-Bell , Janette Atkinson, Oliver Braddick

36.513 **Motion-onset visual evoked potentials (m-VEPs) in children: similarities and differences between translational and radial motion** Laura Lefebvre, Gina Muckle, Sandra W. Jacobson, Joseph L. Jacobson, Céline H. Bastien, Dave Saint-Amour

36.514 **Generating optic flow from illusory disk motion** Johannes M. Zanker

36.515 **Use of speed differences for detection of moving objects by moving observers.** Kathleen Moore, Constance Royden

36.516 **Detecting object movement during self-movement: the importance of local motion contrast, position change and optic flow** Simon Rushton, Paul Warren

36.517 **A physiologically based model for detection of moving objects by a moving observer.** Constance Royden, Michael Holloway

Vision and Action: Hand Movements

Sunday, May 10, 2:45 – 6:45 pm
Poster Session, Vista Ballroom

36.518 **Response to Changes in Variability During Movement Under Risk** Michael S. Landy, Nathaniel Daw, Julia Trommershäuser

36.519 **Comparison of distortions of probability information in three stochastic tasks: visual, visuo-motor and decision making under risk** Craig Glaser, Julia Trommershäuser, Pascal Mamassian, Laurence Maloney

36.520 **Dissociations between Perceived and Actual Success in Goal-Directed Movements** Holly E Gerhard, Wolfe Uta, Laurence T Maloney

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36.521 **Exploring the limits of optimal motor-planning** Andreas Jarvstad, Ulrike Hahn, Paul Warren, Simon Rushton

36.522 **A neural model of the visual tuning properties of action-selective neurons in STS and area F5** Falk Fleischer, Antonino Casile, Martin Giese

36.523 **The effects of stimulus ambiguity and trial order on the selection of goal-directed actions** Daniel K. Wood, Melvyn A. Goodale

36.524 **The anti-pointing task: vector inversion is mediated by a perceptual representation of reaching space** Matthew Heath, Anika Maraj, Gordon Binsted

36.525 **The effect of gaze shifts, pointing, and saccadic adaptation on the relative position judgments of a remembered object** David C Cappadocia, Denise YP Henriques

36.526 **A window into behavioural strategies used in visuomotor adaptation** Jane Lawrence, Lee Baugh, Jonathan Marotta

36.527 **Visual-haptic disparity of target will modulate action-guidance strategy** Jonathan Diamond, Luc Tremblay

36.528 **Reduction of the flash-lag effect in terms of active control of visual stimulus and size of hand movement** Makoto Ichikawa, Yuko Masakura

36.529 **Differences between action and perception in learning object categories** Matthew Keough, Ada Le, Jun Li, Matthias Niemeier

36.530 **Large Perspective Changes (>45°) Allow Metric Shape Perception Used to Guide Grasping** Geoffrey Bingham, Young Lee, Mark Mon-Williams

36.531 **Gaze strategies and grasping: Complex shapes** Loni Desanghere, Jonathan Marotta

36.532 **A model on human grasp point selection** Urs Kleinholdermann, Karl R. Gegenfurtner, Volker H. Franz

36.533 **The Role of Audition in the Scaling of Grasping.** A. Sedda, S. Monaco, G. Bottini, M. A. Goodale

36.534 **So close and yet so far away: An effect of disgust on distance perception and graspability** Erika Siegel, Phillip Walker, Jeanine Stefanucci

36.535 **Distractor Valence Affects Action** Francisco Colino, John De Grosbois, Gavin Buckingham, Matthew Heath, Gordon Binsted

36.536 **Posterior Cortical Atrophy: The effects on Perception and Action.** Jonathan Marotta, Loni Desanghere, Benjamin Meek, Lee Baugh, Jane Lawrence, Keri Locheed, Paul Shelton

36.537 **Changes in Visuomotor Performance of Concussed Individuals.** Jason Locklin, James Danckert

Spatial Vision: Adaptation and Masking

Sunday, May 10, 2:45 – 6:45 pm
Poster Session, Vista Ballroom

36.538 **Dividing the legs of sheep: Does Burr's Australian stockman strategy work?** Daniel Abdul-Malak, Frank Durgin

36.539 **Aftereffect of spatial offset between Gabor patches** Kenji Kobayashi, Ikuya Murakami

36.540 **Identifying the mechanism of adaptation to prolonged contrast reduction** MiYoung Kwon, Gordon Legge, Fang Fang, Allen Cheong, Sheng He

36.541 **Isolating the Angular Harmonic of the Indirect Tilt After-Effect** Veronique Lefebvre, Keith Langley, Peter Bex

36.542 **Spatial and temporal integration in blur adaptation** Searus Mandegary, Michael Webster, Mark Georgeson

36.543 **Contrast-modulated noise shows an adaptable, rectifying, contrast-comparison process ("Buffy adaptation")** S. Sabina Wolfson, Stephanie Pan, Gauri Wable, Norma Graham

36.544 **Distortion in perceived object size accompanies saccadic adaptation** Tyler Garaas, Marc Pomplun

36.545 **A negative adaptation after-effect of mean size** Nicole Wurnitsch, Jennifer Corbett, David Whitney

36.546 **Visual Replay Effect: Objective Evidence from a Masking Paradigm** Harish Vasudevan, Neil Halelamien, Shinsuke Shimojo

36.547 **Detection mechanisms selective to combinations of luminance- and contrast-modulations** Remy Allard, Patrick Cavanagh

36.548 **Critical-Band Masking Estimation of 2nd-Order Filter Orientation Bandwidth** Jerad Fields, Christopher A Henry, Michael S Landy

36.549 **Spatial-frequency tuning develops over time** Felix A. Wichmann, G. Bruce Henning

36.550 **Surround suppression in visual cortex: Effects of spatial frequency** Allison B. Sekuler, Lisa R. Betts, Eugenie Roudaia, Yaroslav Konar, Patrick J. Bennett

Monday Sessions

Color and Light: Lightness and Color of Surfaces

Monday, May 11, 8:30 – 10:00 am
Talk Session, Royal Ballroom 1-3
Moderator: James Schirillo

8:30 am
41.11 **Grouping by illumination level: Surroundedness can substitute for adjacency in the coplanar depth effect.** Alan Gilchrist, Ana Radonjic

8:45 am
41.12 **An Edge-Based Account of Lightness Compression and Insulation in the Staircase Gelb Effect** Michael E. Rudd

9:00 am
41.13 **Shadows Control Microsaccades and Drift** James Schirillo, Richard Friedhoff

9:15 am
41.14 **Yellow papers under blue light vs. blue papers under yellow light: same or different?** Rumi Tokunaga, Alexander Logvinenko

9:30 am
41.15 **Surface material properties and color constancy of 3D objects** Bei Xiao, David Brainard

41.16, *9:45 am* **An Ecological Valence Theory of Human Color Preferences** Karen B. Schloss, Stephen E. Palmer

Scene Perception: Mechanisms and Representations

Monday, May 11, 8:30 – 10:00 am
Talk Session, Royal Ballroom 4-5
Moderator: Alice Albrecht

8:30 am
41.21 **Rapid, global image processing: Powerful, but capacity-limited** Karla Evans, Jeremy Wolfe

8:45 am
41.22 **Perceptually averaging in a continuous visual world: Extracting statistical summary representations over time** Alice R. Albrecht, Brian J. Scholl

9:00 am
41.23 **The bear before the forest, but the city before the cars: revealing early object/background processing** Sébastien M. Crouzet, Olivier R. Joubert, Simon J. Thorpe, Michèle Fabre-Thorpe

9:15 am
41.24 **Natural scene categorization by global scene properties: Evidence from patterns of fMRI activity** Soojin Park, Michelle Greene, Timothy F. Brady, Aude Oliva

9:30 am
41.25 **Making Big Things Look Small: Blur Combined with Other Depth Cues Affects Perceived Size and Distance** Robert Held, Emily Cooper, James O'Brien, Martin Banks

9:45 am
41.26 **Representational Transparency in Aesthetic Judgments of Spatial Composition: Effects of Object Position and Size** Jonathan Gardner, Stephen Palmer

Spatial Vision: Crowding and Mechanisms

Monday, May 11, 11:00 am – 12:45 pm
Talk Session, Royal Ballroom 1-3
Moderator: Bosco Tjan

11:00 am
42.11 **Spatial interactions in crowding: effects of flankers' relations** Tomer Livne, Dov Sagi

11:15 am
42.12 **Crowding in peripheral vision: why bigger is not always better.** Dennis Levi, Thom Carney

11:30 am
42.13 **Crowding-induced changes in appearance: Bringing signal to the noise** John Greenwood, Peter Bex, Steven Dakin

11:45 am
42.14 **Modulation of the spatial extent of the crowding effect by shaping visual attention** Tingting Liu, Peng Zhang, Yi Jiang, Sheng He

12:00 pm
42.15 **Three essential ingredients of crowding** Bosco S. Tjan

12:15 pm
42.16 **Adapting to astigmatism** Michael Webster, Lucie Sawides, Sowmya Ravikumar, Larry Thibos, Arthur Bradley, Susana Marcos

12:30 pm
42.17 **The development of contrast sensitivity for gratings and natural images: revisiting the golden standard** Dave Ellemberg, Aaron Johnson, Bruce Hansen

Attention: Selection and Modulation

Monday, May 11, 11:00 am – 12:45 pm
Talk Session, Royal Ballroom 4-5
Moderator: Leila Reddy

11:00
42.21 **Capturing attention without perceptual awareness** Jeffrey Lin, Scott Murray, Geoffrey Boynton

11:15
42.22 **Spatial attention reduces contrast adaptation** Franco Pestilli, Barbara Montagna, Justin Gardner, David Heeger, Marisa Carrasco

11:30
42.23 **Attention and biased competition in multi-voxel object representations.** Leila Reddy, Rufin VanRullen, Nancy Kanwisher

11:45
42.24 **Competition for Limited Capacity: Towards a Saliency Theory of Distractor Processing** Zhicheng Lin, Sheng He

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12:00
42.25 **Psychophysical evidence for the normalization model of attention** Katrin Herrmann, Marisa Carrasco, David Heeger

12:15 pm
42.26 **Attention improves response reliability by decreasing noise: Reduction in the amplitude of fluctuations of fMRI signal at non-stimulus frequencies using periodic retinotopic mapping stimuli** David Bressler, Michael Silver

12:30 pm
42.27 **Modulation of the direction of figure by feature-based attention** Nobuhiko Wagatsuma, Megumi Oki, Ko Sakai

Perceptual Learning: Specificity and Transfer

Monday, May 11, 8:30 am – 12:30 pm
Poster Session, Royal Ballroom 6-8

43.301 **Perceptual learning transfers from luminance- to contrast-defined motion** Taylor Hayes, Alexander Petrov

43.302 **The stimulus specificity of motion perceptual learning depends on the difficulty during post-test rather than training** Alexander Petrov

43.303 **Perceptual learning of visual motion: The role of the spatial frequency of the carrier** Nicholas Van Horn, Alexander Petrov

43.304 **Enabling complete transfer of perceptual learning across orientations in foveal vision through double training** Jun-Yun Zhang, Lu-Qi Xiao, Stanley Klein, Dennis Levi, Cong Yu

43.305 **The rate of perceptual learning at a fixed accuracy threshold is improved by feedback and by mixture with easier trials** Wilson Chu, Barbara Dosher, Zhong-Lin Lu

43.306 **The Less-Is-More principle in realistic visual statistical learning** Aaron Glick, József Fiser

43.307 **The emergence of explicit knowledge with experience in visual statistical learning** Kimberly MacKenzie, Jozsef Fiser

43.308 **Versatile perceptual learning of textures after variable exposures** Zahra Hussain, Allison Sekuler, Patrick Bennett

43.309 **Perceptual Learning of Noisy Oriented Gratings as Revealed by Classification Images** Jonathan Dobres, Aaron Seitz

43.310 **Training effect on the useful visual field with and without a central task** Mitsuharu Ogiya , Satoshi Shioiri, Akio Nishimura, Ken-Ichiro Tsutsui

43.311 **Comparing perceptual learning and perceptual expertise with matched stimuli** Yetta K. Wong, Jonathan R. Folstein, Isabel Gauthier

43.312 **An effect of mere exposure on visual category learning** Jonathan R. Folstein, Isabel Gauthier, Jenna Lea Green, Thomas J. Palmeri

43.313 **Are label associations necessary for the acquisition of expertise?** Daniel Kinka, Cindy Bukach, Isabel Gauthier

43.314 **Cross-modal perceptual learning is non-trivial: synchronous and semantically plausible auditory cues were not recruited for a visual appearance task** Anshul Jain, Benjamin Backus

43.315 **Cue recruitment for the construction of perceptual appearance: World location competes with retinal location in an associative learning paradigm.** Sarah Harrison, Ben Backus

43.316 **Improved Perception Immediately Leads to Improved Movement Stability** Winona Snapp-Childs, Geoffrey Bingham, Andrew Wilson

Motion: Representations

Monday, May 11, 8:30 am – 12:30 pm
Poster Session, Royal Ballroom 6-8

43.317 **Rapid estimation of the spatiotemporal contrast sensitivity surface** Luis Andres Lesmes, Sergei Gepshtein, Zhong-Lin Lu, Thomas Albright

43.318 **Visual sensitivity to acceleration: Effects of motion orientation, velocity, and size** Dorita H. F. Chang, Nikolaus F. Troje

43.319 **Rapid forms of visual motion priming and motion aftereffect have similar time course but different neural substrates in first- and second-order motion** Gianluca Campana, Clara Casco, Andrea Pavan, Mauro Manassi

43.320 **Attentional modulation of the static and flicker MAEs** Satoshi Shioiri, Kazumichi Matsumiya

43.321 **Impaired luminance detection in apparent motion trajectory** Souta Hidaka, Masayoshi Nagai, Patrick J. Bennett, Allison B. Sekuler, Jiro Gyoba

43.322 **Spatiotemporal properties of apparent-motion perception in aging** Eugenie Roudaia, Karin S. Pilz, Allison B. Sekuler, Patrick J. Bennett

43.323 **Human detection and localization of speed differences during fixation and smooth pursuit eye movements** Karl R. Gegenfurtner, Alexander C. Schütz, Doris I. Braun

43.324 **Apparent motion from outside the visual field: retinotopic cortices may register extraretinal locations.** Martin Szinte, Patrick Cavanagh

43.325 **Prior Probabilities and Representational Momentum: A Signal Detection Analysis** Timothy L. Hubbard, Martina Lange

43.326 **Trapezoidal illusions: Windsurfers versus runways** George Sperling, Joetta Gobell, Chia-huei Tseng

43.327 **Visual Pathways and the Flash-Lag (-Lead) Illusion** Mark Chappell, Kathy Mullen

43.329 **Magnification of the Froehlich Effect under Noise** Rick Cai, Jerry Federspiel, Michael Zenz, Evan Krueger

43.330 **Illusory position shift induced by plaid motion** Rumi Hisakata, Ikuya Murakami

43.331 **Perception of Motion Smear during Visually Induced Illusory Self Motion.** Harold Bedell, Jianliang Tong

Eye Movements: Pursuit and Fixation

Monday, May 11, 8:30 am – 12:30 pm
Poster Session, Orchid Ballroom

43.401 **Smooth pursuit and cognition share attentional resources** Zhenlan Jin, Adam Reeves, Scott Watamaniuk, Stephen Heinen

43.402 **Differences in active versus passive short-term memory acquisition for smooth pursuit eye movements revealed by event-related fMRI** Melanie Burke, Graham Barnes

43.403 **Smooth pursuit eye movements and the segregation of coherent motion** Alexander C. Schütz, Miriam Spering, Doris I. Braun, Karl R. Gegenfurtner

43.404 **Motion correspondence based on the proximity in the environmental coordinates during smooth pursuit eye movements** Masahiko Terao, Masaharu Kato, Akihiro Yagi, Shin'ya Nishida

43.405 **Psychophysical observation of head tilt vestibulo-ocular reflex** Seiichiro Naito, Kumiko Kobayashi

43.406 **Auditory deprivation during infancy affects the control of pursuit eye movements** Christine Turgeon, Aaron Johnson, Sebastian Pannasch, Dave Ellemberg

43.407 **Persistent abnormalities in the control of eye movements following a sport-related concussion** Bruno Richard, Aaron Johnson, Dave Ellemberg

43.408 **Intercepting moving targets: Estimating motion integration and saccadic dead time.** P.J. Etchells, C.P. Benton, C.J.H. Ludwig, I.D. Gilchrist

43.409 **A simple technique to improve fixation performance in naïve observers.** Marcia Grabowecky, Emmanuel Guzman-Martinez, Parkson Leung, Steven Franconeri, Satoru Suzuki

43.410 **Fixational eye movements during quiet standing** Konstantin Mergenthaler, Ralf Engbert

43.411 **Fixational eye movements and the autokinetic illusion** Michele Rucci, Martina Poletti

43.412 **Fixational eye movements in a high-acuity visual task** Hee-kyoung Ko, Martina Poletti, Michele Rucci

Attention: Inattention and Blindness

Monday, May 11, 8:30 am – 12:30 pm
Poster Session, Orchid Ballroom

43.413 **Scene encoding is enhanced during target identification in a RSVP task** Geoffrey Boynton, Jeffrey Lin, Scott Murray

43.414 **Intentional reduction of the attentional blink: The roles of motivation and attentional control** Dustin Engelhardt, Steven B. Most, Jason E. Reiss, James E. Hoffman, Matthew Doran, Lingling Wang

43.415 **Modulation of distractor processing during the attentional blink.** James Elliott, Barry Giesbrecht

43.416 **A Blip in the Blink: Novel Distractors Produce Sparing at Lag 2, But Not Lag 1** Charles Folk, Andrew Leber, Howard Egeth

43.417 **Can Endogenous Spatial Cues Be Processed During the Attentional Blink?** Shahab Ghorashi, James T. Enns, Vincent Di Lollo

43.418 **Electrophysiological evidence for independent consolidation of multiple targets in the attentional blink** Ken Kihara, Junichiro Kawahara, Yuji Takeda

43.419 **Feature-based guidance improves singleton detection during the attentional blink** Carly J. Leonard, Howard Egeth

43.420 **Under which conditions does T1 difficulty affect T2 performance in the attentional blink?** Simon Nielsen, Anders Petersen, Tobias Andersen

43.421 **Implicit Learning and the Attentional Blink** Evan Livesey, Irina Harris, Justin Harris

43.422 **Noise Overlay on the RSVP stream reduces the AB** Fook Chua

43.423 **Word superiority in a dual-task RSVP: familiarity or task definition?** Viatcheslav Stepanov

43.424 **A distinction between perceptual blindness and attentional blindness (II): backward masking versus attentional blink** Chia-huei Tseng, Ryota Kanai, Yu-luen Lin, Vincent Walsch

43.425 **Video game players excel at change detection** Kait Clark, Mathias Fleck, Stephen Mitroff

43.426 **Inattention boosts subjective visibility: Implications for inattentional and change blindness** Dobromir Rahnev, Brian Maniscalco, Elliott Huang, Hakwan Lau

Attention: Linguistic, Motivational and Affective Factors

Monday, May 11, 8:30 am – 12:30 pm
Poster Session, Orchid Ballroom

43.427 **Spatial relationships as a visual routine: Evidence from linguistic influences on perceptual judgment** Steven Franconeri, Jessica Roth

43.428 **Linguistic Control of Visual Attention: Differential Access and Focus or Just Confusion?** Gregory Davis, Bradley Gibson

43.429 **What's in a cue? How value learning affects exogenous selection in dual-stream RSVP** Jennifer O'Brien, Helena Rutherford, Anne Ferrey, Jane Raymond

43.430 **Can the value of irrelevant cues influence visual orienting?** Helena Rutherford, Jennifer O'Brien, Jane Raymond

43.431 **Consequences of visual selective attention for evaluations of affectively positive and negative stimuli.** Mark Fenske, Jackilyn Alberton, Melena Vinski, Meghan Pistchik

43.432 **Visual Marking: The effect of emotional change on time-based visual selection** Elisabeth Blagrove, Derrick Watson

43.433 **Positive and anxious mood influences on selective visual attention** Ezra Wegbreit, Steven Franconeri, Mark Jung-Beeman

43.434 **Top-down modulation of reflexive social orienting** Jocelyn Sy, Jelena Ristic, Barry Giesbrecht

Face Perception: Brain Mechanisms

Monday, May 11, 8:30 am – 12:30 pm
Poster Session, Orchid Ballroom

43.435 **Reverse correlation between the N170 and fractal noise yields human faces: A time-frequency spectrum analysis** Bruce C Hansen, Benjamin Thompson, Robert F Hess, Dave Ellemberg

43.436 **Virtual Brain Reading: A connectionist approach to understanding fMRI patterns.** Rosemary Cowell, Garrison Cottrell

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43.437 **fMRI-Adaptation and category selectivity in human ventral temporal cortex: Evidence for the scaling and sharpening models** Kevin S. Weiner, Rory Sayres, Joakim Vinberg, Kalanit Grill-Spector

43.438 **Decoding distinct modes of face categorization in the cortical face network** Yu-Chin Chiu, Michael Esterman, Heather Rosen, Steven Yantis

43.439 **Interaction between electrical stimulation of face-selective area and perception of face stimuli** Kyung Mi Park, Shinho Jo, Sang Chul Chong, Eun Yeon Joo, Min-Joo Lee, Seung Chyul Hong, Seung Bong Hong

43.440 **What is between face detection and face recognition?** Valerie Morash, Tharian Cherian, Pawan Sinha

43.441 **Selective contrast enhancement at category boundaries in the superior temporal sulcus** Christopher Said, Christopher Moore, Kenneth Norman, James Haxby, Alexander Todorov

43.442 **Electrophysiological evidence for biased competition in V1 favoring motivationally significant stimuli** Greg L. West, Adam A.K. Anderson, Susanne Ferber, Carson Pun, Jay Pratt

43.443 **On the neural mechanism of fear recognition** Sylvain Roy, Nathalie Gosselin, Frederic Gosselin, Isabelle Peretz

43.444 **The right FFA is sensitive to subtle physical changes between personally familiar faces** Meike Ramon, Laurence Dricot, Rainer Goebel, Bruno Rossion

43.445 **Attending to face-pair similarity decreases face adaptation in the fusiform area.** Joshua Goh, Atsunobu Suzuki, Denise Park

43.446 **Adaptation in FFA: Face or Person?** Xiaokun Xu, Xiaomin Yue, Irving Biederman, Jiye Kim, Mark Lescroart

43.447 **It's all in your head: Why is the body inversion effect abolished for headless bodies?** Tatiana Pelc, Ida Lubetzky, Galit Yovel

43.448 **Dissociating between the role of exposure and individuation in perceptual expertise for faces** Galit Yovel, Keren Halsband, Yonatan Goshen

43.449 **Same- and Cross-modal Perceptual Effects on Gender and Identity Adaptation** Aida Owlia , Heather Jordan

43.450 **Talk to the hand: the visual word form area responds to bodies and faces** Jiedong Zhang, Yiying Song, Jia Liu

Vision and Action: Locomotion

Monday, May 11, 8:30 am – 12:30 pm
Poster Session, Vista Ballroom

43.501 **The relationship between eye and head movements during locomotion with visual pursuit tasks.** Michael von Grünau, Simona Manescu, Ravit Sadi, Rong Zhou

43.502 **Eyes or head: Which has the greatest effect on steering control?** Michael Cinelli, William Warren

43.503 **Perceiving the intention to pursue or evade in a moving avatar** Jonathan A. Cohen, William H. Warren

43.504 **Testing models of path integration in a multi-segment homing task** Elizabeth Chrastil, William Warren

43.505 **Are attentional resources required to anticipate moving obstacles?** Justin Owens, William Warren

43.506 **Cortical arousal influences early but not late visual perception** Adam J Woods, John Philbeck, Kenneth Chelette, Mark Mennemeier, Robert Skinner, Edgar Garcia-Rill, David Chichka, Samuel Potolicchio

43.507 **Finding Your Way: The influence of global spatial intelligibility and field-of-view on a wayfinding task** Kevin Barton, Colin Ellard

43.508 **Locomotion for Navigation in Virtual Environments: Walking, Turning, and Joystick Modalities Compared** Bobby Bodenheimer, Daniel Feuereissen, Betsy Williams, Peng Peng, Timothy McNamara, Bernhard Riecke

43.509 **A gateway into the visual control of locomotion: walking through doors in Parkinson's Disease** Dorothy Cowie, Amy Peters, Brian Day

43.510 **The Argus II Retinal Prosthesis: From laboratory psychophysics to real world tasks** Avi Caspi, Jessy Dorn, Ashish Ahuja, Robert Greenberg, Matthew McMahon

43.511 **Mirror, mirror, on the wall: Can I walk through this aperture?** Michael Geuss, Jeanine Stefanucci

43.512 **Comparing the Reliability of Vision and Walking for Target Localization in a Hallway** Amy A. Kalia, Paul R. Schrater, Gordon E. Legge

43.513 **When imagined walking is inaccurate, what is misperceived?** Naohide Yamamoto, John W. Philbeck

43.514 **Computing Head Direction from Interacting Visual and Vestibular Cues During Visually-Based Navigation in the Rat** Bret Fortenberry, Anatoli Gorchetchnikov, Stephen Grossberg

43.515 **Leaky integration (and proactive memory distortion) in non-visual path integration** Emily Sun, Frank Durgin

43.516 **The contribution of visual inputs for homing accuracy in the path completion task** Kayoko Ohtsu

43.517 **Active control of lane keeping uses optic flow, bearing, and splay angle information** Jing Chen, Li Li

43.518 **Right-side Walking Bias is Additive for Approaching Pedestrians** Michael McBeath, Gerard Petit, Steven Holloway

Vision and Action: Reaching

Monday, May 11, 8:30 am – 12:30 pm
Poster Session, Vista Ballroom

43.519 **Do the characteristics of reaching from visual memory reflect 'cautious reaching'?** Oliver Braddick, Hanna Gillespie-Gallery, Erin Babinsky

43.520 **What visual information can infants use for reaching in the dark?** Erin Babinsky, Oliver Braddick, Janette Atkinson

43.521 **Do elderly people use online visual control when carrying out a reaching task?** Rachel Coats, John Wann

43.522 **Visual Feedback is used to guide the Hand towards Endpoints not along Trajectories** Lore Thaler, Melvyn A. Goodale, James T. Todd

43.524 **Cortical oscillations in human posterior parietal cortex during visually-guided reach planning** Gunnar Blohm, William C. Gaetz, Herbert C. Goltz, Joseph F.X. DeSouza, Sonya Bells, Douglas O. Cheyne, J. Douglas Crawford

43.525 **Temporal variation of spatial tuning of single units in macaque inferior parietal cortex under normal and distorted visual conditions** Anushree Karnik, Barbara Heider, Ralph M Siegel

43.526 **Coding of Goal, Perspective, and Kinematics in Action Observation** Elizabeth Hussey, Ashley Safford, Raja Parasuraman, James Thompson

43.527 **Shifted visual feedback of the hand affects perceived reachability of moving objects** Borja Rodríguez-Herreros, Denise de Grave, Joan López-Moliner, Eli Brenner, Jeroen Smeets

43.528 **Learning times do not alter adaptation rates in rapid reaching tasks** Devika Narain, Loes van Dam, Marc Ernst

43.529 **Early correction model of human goal-directed movement** Oh-Sang Kwon, Jeffrey Shelton, Zygmunt Pizlo

43.530 **Arm Movement Errors are Coded in Target-Centered Coordinates** Todd E. Hudson, Allison M. Greene, Michael S. Landy

43.531 **Fitts's Law for saliency** Michael Hegenloh, Michael Zehetleitner, Hermann Mueller

43.532 **Stuck in the middle: Kinematic evidence for optimal reaching in the presence of multiple potential reach targets** Jason P. Gallivan, Craig S. Chapman, Daniel K. Wood, Jennifer Milne, Jody C. Culham, Melvyn A. Goodale

43.533 **Blurring the boundaries between perception and action.** Gordon Binsted, John deGrosbois, Olav Krigolson, Frank Colino, Matthew Heath

Spatial Vision: Mechanisms and Special Populations

Monday, May 11, 8:30 am – 12:30 pm
Poster Session, Vista Ballroom

43.534 **Conservatism in a 2AFC Discrimination Task** John F. Ackermann, Marc Pomplun, Michael S. Landy

43.535 **Decision criterion is determined by interaction's strength from inside or outside the perceptive field** Maria Lev, Uri Polat

43.536 **A Contrast Polarity Search Effect in Letter Identification** Lauren Scharff, Albert Ahumada

43.537 **Contributions of Motion Information and Displacement Priors to Spatial Perception of Stationary Objects** Vaughan W Singh, Matthias Niemeier

43.538 **Evidence for intact spatial updating in observers with severely degraded vision** Margaret R. Tarampi, Sarah H. Creem-Regehr, William B. Thompson

43.539 **The quality of filled-in surface at the blind spot** Yihwa Baek, Jihyun Kim, Oakyoon Cha, Sang Chul Chong

43.540 **Digital Map Reading: Experiments investigating different wayfinding tasks in familiar and non-familiar locations.** Suzanne Gage, Jan Noyes, Martin Groen

43.541 **Fusing Sine Waves with Optotypes: A New Test of Human Spatial Contrast Sensitivity.** Russell J. Adams, Avery Earle , Mary L. Courage

43.542 **Off-kilter: Orientation Discrimination during Childhood** Terri L. Lewis, Sarah E. Chong, Daphne Maurer

43.543 **Which Stripes are Fatter? The Development of Spatial Frequency Discrimination** Ashna Patel, Terri L. Lewis, Daphne Maurer

43.544 **Children's visual acuity charts: effects of blur and eccentricity.** Monika A. Formankiewicz, Charlotte-Louise R. Tucker, Sarah J. Waugh, John Siderov

43.545 **fMRI-based perimetry: single-point visual field testing and evaluation using retinotopic mapping.** Dorothe A. Poggel, Joseph F. Rizzo, Louis J. Toth, Dae-Shik Kim

43.546 **Clinical Applications of Multiple Scaling Theory: Focus on the Big Picture** Frédéric Poirier, Frédéric Gosselin, Martin Arguin

43.547 **Variations in Stimulus Onset Asynchrony Affect Attentive Processing in Amblyopia** Elizabeth Rislove, Dennis Levi

43.548 **Spatiotemporal template for visual perception in normal and amblyopic vision** Shuang Song, Dennis Levi

43.549 **Visual illusions involving contextual modulation are weak in schizophrenia** Eunice Yang, Davis Glasser, Sang-Wook Hong, Randolph Blake, Duje Tadin, Sohee Park

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Tuesday Sessions

Eye Movements: Mechanisms

Tuesday, May 12, 8:30 – 10:00 am
Talk Session, Royal Ballroom 1-3
Moderator: Leland Stone

8:30 am
51.11 **Coordinate system of visual motion signals driving pursuit initiation** Dorion Liston, Leland Stone

8:45 am
51.12 **Smooth-pursuit eye-movements suppress motion processing** Peter Tse

9:00 am
51.13 **Short-latency torsional ocular following in humans.** B.M. Sheliga, E.J. FitzGibbon, F.A. Miles

9:15 am
51.14 **Perception of a stable visual scene during fixational instability** Martina Poletti, Michele Rucci

9:30 am
51.15 **Saccadic Plasticity in Visual Search** Melchi Michel, Wilson Geisler

9:45 am
51.16 **Color Signals in the Primate Superior Colliculus** Brian White, Susan Boehnke, Robert Marino, Laurent Itti, Douglas Munoz

Face Perception: Representations and Mechanisms

Tuesday, May 12, 8:30 – 10:00 am
Talk Session, Royal Ballroom 4-5
Moderator: Pawan Sinha

8:30 am
51.21 **Integrating holistic processing and face-space approaches to the coding of facial identity** Elinor McKone

8:45 am
51.22 **View Transformations in Face Space: A Computational Approach** Hugh R. Wilson

9:00 am
51.23 **Eye movement strategies adapted to individual differences in the loci of performance-maximizing fixations during face recognition** Matthew F Peterson, Miguel P Eckstein

9:15 am
51.24 **The benefits of poor acuity for face learning** Nicolas Pinto, Margaret Moulson, Pawan Sinha

9:30 am
51.25 **Gaze-contingent techniques reveal impairment of holistic face processing in acquired prosopagnosia** Goedele Van Belle, Peter De Graef, Karl Verfaillie, Thomas Busigny, Bruno Rossion

9:45 am
51.26 **Isolating the perceptual nature of the face composite effect from decisional response processes: electrophysiological evidence** Dana Kuefner, Bruno Rossion

Eye Movements: Natural Environments

Tuesday, May 12, 11:00 am – 12:45 pm
Talk Session, Royal Ballroom 1-3
Moderator: Jeff Pelz

11:00 am
52.11 **Inhibition of saccadic return is sensitive to the probabilistic structure of the environment** Casimir Ludwig, Simon Farrell, Lucy Ellis, Iain Gilchrist

11:15 am
52.12 **Shrinking the Oculomotor World Using Global Saccadic Adaptation** Martin Rolfs, Tomas Knapen, Patrick Cavanagh

11:30 am
52.13 **Effects Of Semantic And Syntactic Object-Scene Inconsistencies On The Allocation Of Attention During Naturalistic Scene Viewing** Melissa L.-H. Vo, John M. Henderson

11:45 am
52.14 **Where to look? Dissociating the effect of reward, salience and attention** Vidhya Navalpakkam, Christof Koch, Antonio Rangel, Pietro Perona

12:00 pm
52.15 **Two Views of the World: Active Vision, Attention, and Perception and Action Loops in Real-World Interaction** Chen Yu, Linda Smith, Alfredo Pereira, Sean Matthrews, Hongwei(Henry) Shen

12:15 pm
52.16 **Travel gaze? Re-examining gaze behavior during locomotion** Jeff Pelz, Jonathan Purington, Andrew Herbert

12:30 pm
52.17 **Monitoring CCTV and watching football: expert-novice differences in the magnitude of a visuo-motor buffer.** Christina Howard, Iain Gilchrist, Tom Troscianko, Ardhendu Behera, David Hogg

Motion: Encoding

Tuesday, May 12, 11:00 am – 12:45 pm
Talk Session, Royal Ballroom 4-5
Moderator: Aaron Seitz

11:00 am
52.21 **Paradoxical Improvement of Motion Perception Following Disruption of Cortical Area MT/V5** Duje Tadin, Juha Silvanto, Alvaro Pascual-Leone, Lorella Battelli

11:15 am
52.22 **Reduction of the flash-lag effect with TMS over MT/V5** Gerrit W Maus, Samuel B Hutton, Romi Nijhawan, David Whitney, Jamie Ward

11:30 am
52.23 **The harmonic vector average route to global motion calculation** Alan Johnston

11:45 am
52.24 **Forward and reversed signals in two-stroke apparent motion: psychophysical data and computational modeling.** George Mather, Kirsten Challinor

12:00 pm
52.25 **Reducing contrast improves direction estimation at low speeds** Aaron Seitz, Praveen Pilly, Christopher Pack

12:15 pm
52.26 **Motion-grouping deficits in both eyes of patients with strabismic amblyopia.** Anthony Norcia, Chuan Hou

12:30 pm
52.27 **Reverse correlation reveals the limits of observers' ability to solve the aperture problem in translating natural scenes** David Kane, Peter Bex, Steven Dakin

Object Recognition: Objects and Visual features

Tuesday, May 12, 8:30 am – 12:30 pm
Poster Session, Royal Ballroom 6-8

53.301 **Object identification in scene background of different spatial frequencies.** Ching-Fan Chu, Mindos Cheng, Chien-Chung Cheb, Cheng-Ta Yang, Yei-Yu Yeh

53.302 **Effects of spatial frequency bands on perceptual decision: it is not the stimuli but the comparison** Pia Rotshtein, Andrew Schofield, María J. Funes, Glyn, W Humphreys

53.303 **Magno- and Parvo-Pathway Contributions to Masked Priming by Form: Effects of Contrast and Wavelength** Evelina Tapia, Bruno G. Breitmeyer

53.304 **Examining the coding of colour-motion conjunctions in human visual cortex using pattern classifiers.** Kiley Seymour, Colin Clifford, Nikos Logothetis, Andreas Bartels

53.305 **Binding object identity and orientation in brief displays** Irina Harris, Justin Harris, Michael Corballis

53.306 **The effect of transparency on recognition of overlapping objects** Anne Hillstrom, Michael Tull, Helen Scholey

53.307 **Disrupting Surface Features Disrupts Established Object Representations** Cathleen M Moore, Teresa Stephens, Elisabeth Hein

53.308 **Using Surface Features to Disambiguate What Went Where in the Perception of Causality** Teresa Stephens, Cathleen M. Moore

53.309 **Canonical Visual Sizes for Real World Objects** Talia Konkle, Aude Oliva

53.310 **Examining object representation via object memory: exemplar and state-level object properties are supported by the same underlying features** Timothy F. Brady, Talia Konkle, Aude Oliva

53.311 **Averaging independent estimates improves pattern recognition.** Jennifer Corbett, Jason Fischer, David Whitney

53.312 **How is quantity bound to specific objects?** Liat Goldfarb, Anne Treisman

53.313 **The Pervasive Influence of Position on Object Processing: From Brain to Behavior** Dwight Kravitz, Nikolaus Kriegeskorte, Chris Baker

53.314 **At What Stage in the Human Ventral Pathway is the Greater Sensitivity to Nonaccidental over Metric Properties First Manifested?** Ori Amir, Kenneth Hayworth, Irving Biederman, Mark Lescroart, Xiaokun Xu, Jiye Kim

53.315 **Integral versus separable perceptual dimensional pairs are reflected in conjoint versus independent neural populations** Daniel Drucker, Geoffrey Aguirre

Binocular Vision: Rivalry and Bistability

Tuesday, May 12, 8:30 am – 12:30 pm
Poster Session, Royal Ballroom 6-8

53.316 **Binocular Combination in Anisometropic Amblyopia** Changbing Huang, Jiawei Zhou, Zhong-Lin Lu, Lixia Feng, Yifeng Zhou

53.317 **Effects of mask-to-target energy ratio on cyclopean metacontrast masking** Benjamin Zinszer, Raymond Phinney

53.318 **Visual processes selective to both color and orientation contribute to the determination of perceptual dominance of rivalrous chromatic gratings** Satoru Abe, Eiji Kimura, Ken Goryo

53.319 **Does color misbind to achromatic regions or chromatically similar regions?** Para Kang, Steven Shevell

53.320 **Dissociation between Figure and Ground During Binocular Rivalry** David Anderson, Cathleen Moore

53.321 **Binocular rivalry between a sharp image and a low-pass filtered version of itself: Low-pass dominance increases with eccentricity** Yu-Chin Chai, Thomas Papathomas, Xiaohua Zhuang, David Alais

53.322 **Interaction between crowding and binocular rivalry** Sangrae Kim, Sang Chul Chong

53.323 **On Boundary Contour and Center-Surround Factors in Binocular Rivalry** Teng Leng Ooi, Yong Su, Jingping Xu, Zijiang He

53.324 **Saliency in a perceptually suppressed image determines the spatial origin of a perceptual alternation during binocular rivalry** Sjoerd Stuit, Chris Paffen, Frans Verstraten

53.325 **Rivalry in tri-stable stimuli: Dominance durations predict the upcoming perceptual state** Marnix Naber, Wolfgang Einhäuser

53.326 **Task demands can affect binocular rivalry dynamics** Adrien Chopin, Pascal Mamassian

53.327 **Fear Processing during Binocular Suppression** Patricia Costello, Anne Engebretson, Megan Taylor, Constance Lokken, Yi Jiang

53.328 **Binocular rivalry favors naturalistic stimuli in space and time** Daniel H. Baker, Erich W. Graf

53.329 **Binocular Suppression in the Monocular Boundary Contour Display Starts Early (≤80 msec)** Yong Su, Teng Leng Ooi, Zijiang He

53.330 **Non-local effects of perceptual memory in ambiguous figure perception.** Wendy Adams, Tomas Knapen, Jan Brascamp, Erich Graf

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53.331 **Genetic contribution to the rate of switching in bistable perception** Robert Shannon, Yi Jiang, Edward Bernat, Christopher Patrick, Sheng He

Attention: Tracking

Tuesday, May 12, 8:30 am – 12:30 pm
Poster Session, Orchid Ballroom

53.401 **Extrapolation vs. individuation in multiple object tracking** Samantha Ellner, Jonathan I. Flombaum, Brian J. Scholl

53.402 **Altering the number of targets during multiple-object tracking** Justin Ericson, James Christensen

53.403 **Attentional prioritizations based on spatial probabilities can be maintained on multiple simultaneously moving objects** Cary Feria

53.404 **Do multiple object tracking and letter identification use the same visual attention resource?** Todd Horowitz, Michael Cohen, Piers Howe, Jeremy Wolfe

53.405 **Distinguishing between parallel and serial accounts of multiple object tracking** Piers Howe, Michael Cohen, Yair Pinto, Todd Horowitz

53.406 **Tracking objects with moving textures** Rebecca St.Clair, Adriane E. Seiffert

53.407 **Shape influences target recovery after a blank in multiple object tracking** Nicole L. Jardine, Adriane E. Seiffert

53.408 **Self-motion influences multiple-object tracking in a virtual environment** Laura Thomas, Adriane Seiffert

53.409 **Surface features facilitate target recovery after a momentary disappearance during multiple object tracking.** Philip Ko, Adriane Seiffert

53.410 **Why don't people look at targets during multiple object tracking?** Hilda Fehd, Adriane Seiffert

53.411 **Contour interpolation automatically directs attention in multiple object tracking** Brian P. Keane, Everett Mettler, Philip J. Kellman

53.412 **Multiple Object Tracking through temporal gaps created by the fading of objects** Harry Haladjian, Zenon Pylyshyn, Allan Kugel

53.413 **Eye-blinks and Tracking** Deborah Aks, Harry Haladjian, Zenon Pylyshyn, Alexander Hakkinen

53.414 **Tracking invisible objects across viewpoint changes: The role of scene information** Markus Huff, Hauke S. Meyerhoff, Georg Jahn

Attention: Feature- and Object-based

Tuesday, May 12, 8:30 am – 12:30 pm
Poster Session, Orchid Ballroom

53.415 **The spatial gradient of the spread of feature-based attention** Taosheng Liu, Irida Mance

53.416 **Global feature-based inhibition for a task-irrelevant feature of an unattended stimulus** Audrey Lustig, Ana Torralbo, Diane M. Beck

53.417 **Working memory and feature-based attention independently modulate the perception of coherent motion in human observers** Diego Mendoza, Christian Kaul, Julio Martinez-Trujillo

53.418 **Neural Mechanisms of Color and Speed Integration** Mehdi Afshar, Mazyar Fallah

53.419 **Perception of global statistics of color-motion correlation requires surface-based attention to a single motion** Jun Saiki, Alex Holcombe

53.420 **Contributions of Feature-based attention to Closure and Object Perception.** Bobby Stojanoski, Matthias Niemeier

53.421 **Attention spreads to unattended features of an object** Marla Zinni, Antigona Martinez, Raja Parasuraman, Steven Hillyard

53.422 **Attention Cannot Spare Task-Irrelevant Locations on an Attended Object** Arash Fazl, Ennio Mingolla, Robert Sekuler

53.423 **Attentional Tracking of Spatially Extended Objects: Evidence for Object-based Competition Between Lateralized Attentional Systems** Jonathan Gill, George Alvarez

53.424 **The Focus of Expansion in Optical Flow Fields Acts as a Strong Cue for Visual Attention** Masaki Fukuchi, Naotsugu Tsuchiya, Christof Koch

53.425 **Separating attentional reference frames: Contributions of space- and object-based representations to attentional guidance** Leslie Drummond, Sarah Shomstein

53.426 **Hierarchical organization influences on object- and location-based Inhibition of Return** Marielle Johnson, Mazyar Fallah, Heather Jordan

53.427 **Object-based Effects on Tracking Multiple Target and Non-target Objects** Heather Jordan, Mazyar Fallah

53.428 **Prior entry for feature-based attention: Are objects of the attended color perceived earlier?** Xiaohua Zhuang, Thomas V. Papathomas

53.429 **Object-based attention in patients with left and right hemisphere lesions** Alexandra List, Ayelet Landau, Joseph Brooks, Anastasia Flevaris, Francesca Fortenbaugh, Michael Esterman, Thomas VanVleet, Alice Albrecht, Bryan Alvarez, Lynn Robertson, Krista Schendel

53.430 **Individual differences in object based attention** Alexa Roggeveen, Karin Pilz, Patrick Bennett, Allison Sekuler

Eye Movements: Saccade Selection

Tuesday, May 12, 8:30 am – 12:30 pm
Poster Session, Orchid Ballroom

53.431 **Saccadic eye movements to Gaussian luminance and color blobs** Cristiano Cellini, Alexander C. Schütz, Karl R. Gegenfurtner

53.432 **Saccade planning is dissociated from pre-saccadic attentional facilitation after damage to the posterior parietal cortex** Aarlenne Khan, Annabelle Blangero, Yves Rossetti, Romeo Salemme, Jacques Luaute, Heiner Deubel, Werner Schneider, Gilles Rode, Laure Pisella

53.433 **Saccades are planned using spatial memory information as well as current retinal position** Laurel Issen, David Knill

53.434 **The role of context and feature information in fixation search** Chris Bradley, Bill Geisler

53.435 **Suboptimal selection of initial saccade in a visual search task** Camille Morvan, Laurence Maloney

53.436 **The Control of Fixation Duration: Time-Course of the Response to Stepwise Changes in Processing Difficulty** Hans A. Trukenbrod, Ralf Engbert

53.437 **Testing processing mode within single visual fixations: Saccadic modulation of the distractor effect** Sebastian Pannasch, Boris Velichkovsky

53.438 **Trial history biases the spatial programming of antisaccades** Tara Rastgardani, Mathias Abegg, Victor Lau, Jason J S Barton

53.439 **The influence of a visuomotor set on express saccades: Coordinate frames and contingency** Kira Konnova, Jay Edelman

53.440 **Does saccadic space compression mean size shrinking?** Gang Luo, Tyler Garaas, Marc Pomplun, Eli Peli

53.441 **Stimulus exposure and gaze bias in visual decision tasks.** Mackenzie Glaholt, Eyal Reingold

53.442 **Remembering the old, preferring the new: Memory for old and new items in repeated visual search** Margit Höfler, Christof Körner

53.443 **Gaze behaviour in the natural environment: Eye movements in video versus the real world** Tom Foulsham, Esther Walker, Alan Kingstone

53.444 **Adaptive Distribution of Gaze in the Real World.** Mary Hayhoe, Jelena Jovancevic

53.445 **Saccades and microsaccades during visual fixation, exploration, and search: Foundations for a common saccadic generator** Xoana Troncoso, Jorge Otero-Millan, Stephen Macknik , Ignacio Serrano-Pedraza, Susana Martinez-Conde

53.446 **Predictive eye movements in gaze and action observation** Robert Volcic, Markus Lappe

Perceptual Organization: Grouping

Tuesday, May 12, 8:30 am – 12:30 pm
Poster Session, Orchid Ballroom

53.447 **The dwell time for the whole is LESS than for the sum of its parts** Marianne Maertens, Robert Shapley, Nava Rubin, Stefan Pollmann

53.448 **Grouping thresholds are several times larger than detection thresholds - a new approach toward the psychophysics of Gestalten** Simone Gori, Lothar Spillmann

53.449 **The role of Gamma oscillations in binding ambiguous visual input into coherent percepts** Hans-Peter Frey, Marnix Naber, Wolfgang Einhäuser, John Foxe

53.450 **Spatial overlap of collections affects the resolution of ensemble features** Ryan Ly, Hee Yeon Im, Justin Halberda

53.451 **Grouping oranges affects their overall appeal** Tom Harp, Jason Haberman, David Whitney

53.452 **Perceptual Grouping During Multiple Object Tracking** Andrew McCollough, Trafton Drew, Edward Vogel

53.453 **The functional asymmetry of the lower and upper visual fields in attention and perceptual grouping** Qi Zhu, Jia Liu

53.454 **Dynamic Visualization of Perceptual Organization** Bernice Rogowitz, Frank van Ham

Temporal Processing: Mechanisms

Tuesday, May 12, 8:30 am – 12:30 pm
Poster Session, Vista Ballroom

53.501 **The Unveiling of Transient Channels at High Spatial Frequencies by Contrast Masking and Contrast Adaptation** Keith Langley, Veronique Lefebvre, Peter Bex

53.502 **Spatial tuning of adaptation-induced temporal compression** Inci Ayhan, Aurelio Bruno, Shinya Nishida, Alan Johnston

53.503 **Distinct spatial association fields for harmonic motion and harmonic contrast** Stéphane Rainville

53.504 **Spatial aspects of perisaccadic chronostasis** Jonas Knöll, Frank Bremmer

53.505 **Phantom flashes caused by interactions across visual space** Bhavin Sheth

53.506 **Contrast gain not contrast change induces apparent temporal compression** Aurelio Bruno, Alan Johnston

53.507 **Perception of Temporal Structure is Distorted Early in the Visual System** Christopher R. L. Cantor, Clifton M. Schor

53.508 **Top-down modulations in perception of simultaneity** Maria Sinitsyna, Ekaterina Pechenkova

53.510 **The perceived duration of a stimulus depends on temporal context** Thomas Sprague, David Eagleman

53.512 **Style follows content revisited: Evidence from an ERP study** M. Dorothee Augustin, Helene Fuchs, Birgit Defranceschi, Claus-Christian Carbon, Florian Hutzler

53.513 **When an effect precedes its cause in consciousness** Chien-Te Wu, Niko Busch, Michele Fabre-Thorpe, Rufin VanRullen

53.514 **On the perception of temporal visual events** Frank Marino, Tyler Garaas, Marc Pomplun

53.515 **Auditory dominance in time perception** Laura Ortega, Emmanuel Guzman-Martinez, Marcia Grabowecky, Satoru Suzuki

Perception and Action: Decisions and Frames of Reference

Tuesday, May 12, 8:30 am – 12:30 pm
Poster Session, Vista Ballroom

53.516 **Comparison of perceptual and motor decisions via confidence judgments and saccade curvature** Pedro Cardoso-Leite, Andrei Gorea

53.517 **Switching from reactive to intentional responses** Andrei Gorea

53.518 **Interactions between decision criteria estimated using external noise methods.** Mikhail Katkov, Ido Zak, Andrei Gorea, Dov Sagi

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53.519 **Dynamics of decision criterion setting in a detection task** Chrystele Ody, Hakwan Lau

53.520 **The effect of reward structure on sequential decision-making** Charles Benson, C. Shawn Green, Daniel Kersten, Paul Schrater

53.521 **Promoting Optimal Decision Making By Reducing Unexplained Variability in Outcome** C. Shawn Green, Charlie Benson, Daniel Kersten, Schrater Paul

53.522 **Response demands do not influence perceived illusory motion in cognitive-based tasks** Jennifer Anderson, Michael Levine, J. Jason McAnany

53.523 **Evidence for the primacy of the motor system in visual time perception** Doug Yovanovich

53.524 **Developing a neuromimetic accumulator model of perceptual decisions** Braden Purcell, Jeremiah Cohen, Richard Heitz, Jeffrey Schall, Gordon Logan, Thomas Palmeri

53.525 **Visuomotor compensation for variation in perceptual latency** Alex White, Sam Tatam, Daniel Linares, Alex Holcombe

53.526 **Neural correlates of visuomotor integration: an MEG study** Jon Kennedy, Suresh Muthukumaraswamy, Krish Singh

53.527 **Line By Line: Behavioural and EEG evidence for a stroke-order priming effect in letters** Jim Parkinson, Benjamin J. Dyson, Beena Khurana

53.528 **Sequential effects of prime-target compatibility in a masked priming task** Paolo Martini, Friederike Schlaghecken

53.529 **Eye, Head, and Hand Coordination in 16-to 36-Month-Old Infants** Thomas Baker, Chen Yu, Rowan Candy, Linda Smith, Seehyun Kim

53.530 **Bimanual Interaction of Manual Heightmatching to Misperceived Elevations of a Target with Different Hand-to-Body Distances** Wenxun Li, Leonard Matin

53.531 **A comparison of the dynamics of visually-controlled head and hand movements** Jeffrey B. Mulligan, Scott B. Stevenson

53.532 **Head-torso coordination and overt shifts in attention** Mark Mon-Williams, Sinead Sheehan, Andrew D. Wilson, Geoffrey P. Bingham

53.533 **Coordinate frames for reach to grasp in visual and haptic calibration** Sinead Sheehan, Pete Culmer, Geoff Bingham, Andrew Wilson, Mark Mon-Williams

53.534 **The Rod-and-Frame and Simultaneous Tilt Illusions: Perception, Action and the Two-Wrongs Hypothesis** Paul Dassonville, Tim Sanders, Brad Capp

53.535 **Actions Do Not Escape the Influence of Visual Illusions -- Even When Manual Behavior Is Accurate** Leonard Matin, Wenxun Li, Ethel Matin

Visual Search: Context and Attention

Tuesday, May 12, 8:30 am – 12:30 pm
Poster Session, Vista Ballroom

53.536 **Identifying a "default" visual search mode by operant conditioning** Jun Kawahara

53.537 **Temporal dynamics of the attentional template during visual search** Valerie Beck, Steven Luck

53.538 **Configural Asymmetries in visual search are robust to changes in the spatial arrangement of the search elements** Joshua Edler, Patrick Monnier

53.539 **Contextual cost: When the target is not where it should be** Tal Makovski, Yuhong Jiang

53.540 **No Target No Effect: Target Absent Trials in Contextual Cueing** Melina Kunar, Jeremy Wolfe

53.541 **Visual search guidance is best shortly after target preview offset** Joseph Schmidt, Gregory Zelinsky

53.542 **Target Representations Guiding Visual Search for Two Colors: Two Discrete Colors, or a Single Range?** Tamaryn Menneer, Michael J. Stroud, Kyle R. Cave, Nick Donnelly

53.543 **The Frankenbear Experiment: Looking for part-based similarity effects on search guidance with complex objects** Robert Alexander, Gregory Zelinsky

53.544 **Optimal integration of information across space in homogeneous and heterogeneous search displays: data and neural implementation** Wei Ji Ma, Vidhya Navalpakkam, Jeff Beck, Alexandre Pouget

53.545 **Quitting rules in visual search** Riccardo Pedersini, Vidhya Navalpakkam, Todd Horowitz, Piero Perona, Jeremy Wolfe

53.546 **Do summary statistics influence visual search?** Amrita Puri, Jason Haberman, David Whitney

53.547 **Cueing Effects for Human and Ideal Searchers during Multiple-Fixation Visual Search** Wade Schoonveld, Miguel P. Eckstein

53.548 **Active search for multiple targets under time pressure** Preeti Verghese

53.549 **Virtual evolution for visual search in natural images results in behavioral receptive fields with inhibitory surrounds** Sheng Zhang, Craig K. Abbey, Miguel P. Eckstein

53.550 **Feature-based and contextual guidance mechanisms in complex natural visual search** Cheston Tan, Thomas Serre, Sharat Chikkerur, Tomaso Poggio

Perceptual Learning: Associations and Plasticity

Tuesday, May 12, 2:45 – 4:15 pm
Talk Session, Royal Ballroom 1-3
Moderator: Ione Fine

2:45 pm
54.11 **Effects of orientation specific visual deprivation in adults measured using altered reality** Stephen Engel, Peng Zhang, Min Bao, Miyoung Kwon, Sheng He

3:00 pm
54.12 **Changes in the understanding of visual depth cues eight years after sight-recovery** Elizabeth Huber, Ione Fine

3:15 pm
54.13 **Basic visual representations are altered by rewards** Timothy J. Vickery, Marvin M. Chun

3:30 pm
54.14 **Transforming a left lateral fusiform region into VWFA through training in illiterate adults** Sheng He, Haicheng Liu, Yi Jiang, Changming Chen, Qiyong Gong, Xuchu Weng

3:45 pm
54.15 **Perceptual learning and the role of virtual standards in visual discrimination.** Stanley Klein, Thom Carney, Cong Yu, Dennis Levi

4:00 pm
54.16 **Augmented Hebbian Learning Accounts for the Eureka Effect in Perceptual Learning** Jiajuan Liu, Zhong-Lin Lu, Barbara Dosher

3D Perception: Shape

Tuesday, May 12, 2:45 – 4:30 pm
Talk Session, Royal Ballroom 4-5
Moderator: Manish Singh

2:45 pm
54.21 **Three dimensional shape and the perception of physical stability** Roland Fleming, Manish Singh

3:00 pm
54.22 **Cooperative computation of shape and material from motion** Katja Doerschner, Di Zang, Daniel Kersten, Paul Schrater

3:15 pm
54.23 **The role of a perceptual decision rule in development of variance reduction by cue integration** Marko Nardini, Rachael Bedford, Denis Mareschal

3:30 pm
54.24 **Environmental statistics influence integration of visual cues to depth** Anna Seydell, David Knill, Julia Trommershäuser

3:45 pm
54.25 **How is the perception of shape from shading affected by revealing the lighting properties?** James O'Shea, Maneesh Agrawala, Martin Banks

4:00 pm
54.26 **The Perception of Surface Slant from Monocular Texture Gradients and Binocular Disparity** James Todd, Kevin Guckes, Eric Egan

4:15
54.27 **The 3-D Helmholtz Square illusion: more reasons to wear horizontal stripes.** Peter Thompson, Kyriaki Mikellidou

Multisensory Processing: Brain and Behavior

Tuesday, May 12, 5:15 – 7:00 pm
Talk Session, Royal Ballroom 1-3
Moderator: Laurence Harris

5:15 pm
55.11 **On Maintaining Crossmodal Identity** Richard Held

5:30 pm
55.12 **Two different visual encoding strategies in intra- and inter-modal 3-D object recognition** Yoshiyuki Ueda, Jun Saiki

5:45 pm
55.13 **Vestibular facilitation of optic flow parsing** Paul MacNeilage, Zhou Zhang, Dora Angelaki

6:00 pm
55.14 **The effect of lunar gravity on perception: ambient visual cues have less effect on orientation judgements than they do under normal gravity.** Richard Dyde, Michael Jenkin, Heather Jenkin, James Zacher, Laurence Harris

6:15 pm
55.15 **Shape-Color Synesthesia in The First Year of Life: A Normal Stage of Visual Development?** Katie Wagner, Karen Dobkins

6:30 pm
55.16 **New results in the neuroscience, behavior and genetics of synesthesia** David Eagleman, Sherry Cheng, Sara Churchill, Robert LiKamWa, Stephanie Nelson

6:45 pm
55.17 **Visual and somatosensory guidance of reaching movements in the medial parieto-occipital cortex of the macaque** Patrizia Fattori, Annalisa Bosco, Rossella Breveglieri, Nicoletta Marzocchi, Claudio Galletti

Attention: Brain Mechanisms

Tuesday, May 12, 5:15 – 7:00 pm
Talk Session, Royal Ballroom 4-5
Moderator: Christian Olivers

5:15 pm
55.21 **Attention modulates the neural mechanisms that give rise to center-surround interactions** John Reynolds, Jude Mitchell, Kristy Sundberg

5:30 pm
55.22 **Attention reduces low frequency correlated noise in macaque V4.** Jude Mitchell, Kristy Sundberg, John Reynolds

5:45 pm
55.23 **Retinotopic Maps of Covert Attention in Human Superior Colliculus** Sucharit Katyal, Samir Zughni, Alex Huk, David Ress

6:00 pm
55.24 **Decoding neural mechanisms of purely voluntary shifts of spatial attention** Michael Esterman, Yu-Chin Chiu, Leon Gmeindl, Susan Courtney, Steven Yantis

6:15 pm
55.25 **Convergence of goal-directed and stimulus-driven selection in lateral prefrontal cortex** Christopher Asplund, Jay Todd, Andy Snyder, Christopher Gilbert, René Marois

6:30 pm
55.26 **The divided self: fMRI reveals within-subject fluctuations in the resistance to attention capture over time** Andrew B. Leber

6:45 pm
55.27 **Sound increases visual saliency: Evidence from EEG** Christian Olivers, Erik Van der Burg, Durk Talsma, Adelbert Bronkhorst, Jan Theeuwes

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Face Perception: Inversion and Viewpoint Effects

Tuesday, May 12, 2:45 – 6:45 pm
Poster Session, Royal Ballroom 6-8

56.301 **Face perception enhances the detection of spatial frequencies between 2-4 cycles per degree (16-32 cycles per face)** Noah Schwartz

56.302 **Are the Face Inversion Effect and the Composite Face Effect Mediated by Different Spatial Frequencies?** Verena Willenbockel, Daniel Fiset, Martin Arguin, Franco Lepore, Frédéric Gosselin

56.303 **Optimal viewing positions for upright and inverted face recognition** Caroline Blais, Frédéric Gosselin, Martin Arguin, Daniel Bub, Daniel Fiset

56.304 **Coupling between fMR-adaptation and perceptual discrimination of upright and inverted faces** Sharon Gilaie-Dotan, Hagar Gelbard-Sagiv, Rafael Malach

56.305 **Contrast-based adaptation shows asymmetric transfer of aftereffects between inverted and upright faces** Xiaoyue M Guo, Ipek Oruc , Jason J S Barton

56.306 **Generalized impairment of featural and configural information in the lower region of the face through inversion** James Tanaka, Kaiser Martha, Daniel Bub, Lara Pierce

56.307 **TMS studies of the face inversion effect** David Pitcher, Brad Duchaine, Nancy Kanwisher, Vincent Walsh, Galit Yovel

56.308 **Spatio-temporal dissociation between low- and high-level effects of stimulus inversion on early face-sensitive electrophysiological responses** Corentin Jacques, Bruno Rossion

56.309 **Viewpoint Aftereffects: Adapting to full faces, head outlines, and features.** Marwan Daar, Hugh Wilson

56.310 **View-based categorization and face discrimination: Does categorization occur after face detection?** Charles C.-F. Or, Hugh R. Wilson

56.311 **Face view adaptation and its effect on face view discrimination** Fang Fang, Juan Chen, Hua Yang

56.312 **An investigation of pose-contingent effects in unfamiliar face recognition by combinatoral manipulation of yaw and roll** Ian van der Linde, Tamara Watson

Face Perception: Face Space, Categorization and Representation

Tuesday, May 12, 2:45 – 6:45 pm
Poster Session, Royal Ballroom 6-8

56.313 **The Development of Face Prototypes: Evidence for Simple and Opposing Aftereffects in Children** Catherine Mondloch, Alexandra Hatry, Lindsey Short

56.314 **Face Adaptation With and Without Attention** Janice Murray, Madeline Judge

56.315 **Exploring the nature of the multidimensional face space.** Danelle A. Wilbraham, Aleix M. Martinez, James T. Todd

56.316 **What "exactly" is a prototype? Not sure, but average objects are not necessarily good candidates for...** Claus-Christian Carbon

56.317 **Are objects like faces? Norm-based versus exemplar-based coding as revealed by adaptation aftereffects** Hugh Dennett, Mark Edwards, Elinor McKone

56.318 **Can holistic processing be improved in the normal population?** Jessica Collins, Cindy Bukach

56.319 **Brad Pitt & Jude Law: Individual-Contingent Face Aftereffects and Norm- versus Exemplar-Based Models of Face-Space** Rachel Robbins, Patrick Heck

56.320 **Integration of attractiveness across object categories and figure/ground** Eiko Shimojo, Junghyun Park, Shinsuke Shimojo

56.321 **Center-surround interactions in face perception** Patricia Winkler, Carrie Paras, Andrew Meyers, Michael Webster

56.322 **Happy or Sad? The Effects of Age and Face Race on Expression Aftereffects** M. D. Vida, C. J. Mondloch

56.323 **Motion-gradient defined facial expressions and the nature of face representation** Jianhua Wu, Hong Xu, Peter Dayan, Ning Qian

56.324 **Adapting to anti-expressions: a journey through expression space** A L Skinner, C P Benton

56.325 **Attentional Bias and its effects on Change Blindness to Human Faces in the Flicker Paradigm** Lucy J Troup, Alyssa M Alcorn, Matthew G Rhodes, Amanda E Sensenig

56.327 **Predicting psychophysical responses from stimulus features: A statistical evaluation of human gender categorization models** Jakob H Macke, Felix A Wichmann

Perceptual Organization: 2D Shape

Tuesday, May 12, 2:45 – 6:45 pm
Poster Session, Orchid Ballroom

56.402 **Orientation tuned curvature detectors revealed by the shape-amplitude after-effect** Jason Bell, Elena Gheorghiu, Fredrick Kingdom

56.403 **Does plaid-selective adaptation arise from the same mechanism as the curvature aftereffect?** Jonathan Peirce, David McGovern, Sarah Hancock

56.404 **Perception of the Ebbinghaus illusion in 5- to 8- month old infants** Yuka Yamazaki, Yumiko Otsuka, So Kanazawa, Masami K. Yamaguchi

56.405 **From illusory contours to faces: A first step in relating foundational characteristics of perceptual organization** Jennifer Bittner, Michael Wenger, Rebecca Von Der Heide, Daniel Fitousi

56.406 **EEG correlates of perceptual organization** Margaret Moulson, Nina Suresh, Scott Gorlin, Pawan Sinha

56.407 **Haptic and visual defragmentation of shapes** Yuri Ostrovsky, Margaret Moulson, Ming Meng, Kang Choi, Tapan Gandhi, Pawan Sinha

56.408 **Object Substitution Masking Disrupts Visual Feature Binding** Seth Bouvier, Anne Treisman

56.409 **Simultaneous shape-contrast and global assimilation effects in the perception of aspect ratio** Satoru Suzuki, Timothy Sweeny, Marcia Grabowecky

56.410 **Learning to Recognize 2D Contour Shapes** Patrick Garrigan, Sarah Lacey, Claudia Schinstine

56.411 **Investigating shape representation using sensitivity to axis and part-based transformations** Kristina Denisova, Manish Singh, Jacob Feldman, Xiaotao Su

56.412 **How is the inner contour of objects encoded in visual working memory? Evidence from holes** Sung-Ho Kim, Jacob Feldman

3D Perception: Disparity and Other Depth Cues

Tuesday, May 12, 2:45 – 6:45 pm
Poster Session, Orchid Ballroom

56.413 **The Venetian-blind Effect: A Prior for Zero Slant or Zero Disparity?** Martin Banks, Bjorn Vlaskamp

56.414 **Binocular vision with null disparity disrupts the effects of extra-retinal signals** Carlo Fantoni, Fulvio Domini, Corrado Caudek

56.415 **Integration of stereo-motion information for guiding calibrated reach-to-grasp movements** Rachel Foster, Carlo Fantoni, Fulvio Domini, Corrado Caudek

56.416 **Percept of shape distortion induced by binocular disparity and motion parallax** Masahiro Ishii, Zheng Tang, Sohei Komori, Masayuki Sato

56.417 **Stereoscopic shape discrimination is invariant across random changes in size** L. RaShae Jennings, J. Farley Norman, Jessica M. Swindle, Elizabeth M. Mullins, Amanda M. Beers

56.418 **Quantifying with precision a stereokinetic percept** Xiaoyang Yang, Zili Liu

56.419 **A "hole" new look at grapheme-color synesthesia** Bryan Alvarez, Lynn Robertson

56.420 **Perception of shape-from-texture in the periphery using a simulated central scotoma.** Aaron Johnson, Rick Gurnsey

56.421 **Two representations of object size in early human visual cortex.** Erik Runeson, Huseyin Boyaci, Judith McLaughlin, Lee Osterhout, Scott Murray

56.422 **Shape-dependence of a size illusion explained by spatial mapping in V1** Huseyin Boyaci, Katja Doerschner, Scott O. Murray

56.423 **Decoding disparity and motion-parallax defined depth in human visual cortex** Tim Preston, Zoe Kourtzi, Andrew Welchman

56.424 **3D cue combination in spontaneous eye movements** Dagmar Wismeijer, Raymond vanEe, Casper Erkelens, Mark Wexler

56.425 **Cue probability learning by the human perceptual system** Robert Meade, Benjamin Backus, Qi Haijiang

56.426 **Recruitment of an invisible depth cue** Marc O. Ernst, Massimiliano DiLuca, Benjamin Backus

56.427 **Short-term dynamics of perceptual bias for bistable stimuli** Stuart Fuller, Benjamin Backus, Loes van Dam, Marc Ernst

Scene Perception: Spatiotemporal Factors

Tuesday, May 12, 2:45 – 6:45 pm
Poster Session, Orchid Ballroom

56.428 **Empirical data on the configural architecture of human scene perception using natural images** Lauren Barghout

56.429 **Dealing with natural scenes: electrocorticographic correlates of object and context processing in Rhesus Monkey** Maxime Cauchoix, Michèle Fabre-Thorpe, Denis Fize

56.430 **Finding "good" features for natural scene classification** Eamon Caddigan, Dirk B. Walther, Diane M. Beck, Li Fei-Fei

56.431 **What is the function of the parahippocampal place area? Testing the context hypothesis** Russell Epstein, Mary Smith, Emily Ward

56.432 **The costs of multiple concurrent tasks in scene perception.** Noah Sulman, Thomas Sanocki

56.433 **Scene perception in low vision: a study on people with macular degeneration** Muriel Boucart, Fatima Naili, Sabine Defoort

56.434 **Title: Inter-stimulus Screen Contrast affects Scene Masking in Early Processing** Tyler E. Freeman, Lester C. Loschky

56.435 **Where in the World? Human and Computer Geolocation of Images** James Hays, Alexei Efros

56.436 **Variation in scene gist recognition over time in central versus peripheral vision** Adam Larson, Lester Loschky, Whitney Pollock, Annie Bjerg, Steve Hilburn, Scott Smerchek

56.437 **Invariance to Mirror Image Reversals in the Lateral Occipital Complex (LOC) and Parahippocampal Place Area (PPA)** Jonas Kubilius, Daniel D. Dilks, Elizabeth S. Spelke, Nancy Kanwisher

Color and Light: Chromatic Mechanisms

Tuesday, May 12, 2:45 – 6:45 pm
Poster Session, Orchid Ballroom

56.438 **Cortical Recovery Following Gene Therapy in a Canine Model of Achromatopsia** Guy Gingras, Andras M. Komaromy, Ben Tseng, John J. Alexander, Vince V. Chiodo, William W. Hauswirth, Gregory M. Acland, Gustavo D. Aguirre, David H. Brainard, Geoffrey K. Aguirre

56.439 **Clustering of macaque V1 neurons by luminosity function** Cheng Chi Chu, Chou Po Hung

56.440 **Slowing Vision: Pattern Pulse MultiFocal Visual Evoked Potential (PPmfVEP) timing dilation under Isoluminant and Luminance Contrast Conditions** Samuel Inverso, Xin-Lin Goh, Andrew James

56.441 **Hidden Digit Plates of Ishihara Pseudoisochromatic Plates Can Be Read by S-Cones** Eriko Miyahara

56.442 **Blindsight is color-blind to S-cone isolating stimuli: an fMRI study.** Sandra E. Leh, Alain Ptito, Marc Schönwiesner, Mallar M. Chakravarty , Kathy T. Mullen

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56.443 **Contrast adaptation reveals higher-order color processing in the visual evoked potential** Chad Duncan, Eric Roth, Yoko Mizokami, Michael Crognale

56.444 **Retaining the McCollough effect: Is sleep = lack of visual exposure?** Greg Whittaker, Huy Nguyen, Scott Stevenson, Bhavin Sheth

56.445 **The locus of neural responses that determine color shifts induced by temporally-varying light** Jens Christiansen, Anthony D'Antona, Steven Shevell

56.446 **Multiple chromatic channels revealed by using dichoptic chromatic-masking** Naruhiko Fukino, Keiji Uchikawa

56.447 **Isotropic orientation tuning for masking in human color vision** Kathy T. Mullen, Jose M. Medina

56.448 **Assessing functional consequences of adaptation by adapting images rather than observers** Karolina Siwinska, Igor Juricevic, Michael Webster

56.449 **What kinds of contours limit filling-in of color?** Claudia Feitosa-Santana, Anthony D'Antona, Steven Shevell

56.450 **Explaining the new with the old: Spreading colors, afterimages, and boundaries** Gregory Francis

56.451 **Individual differences in the Abney Effect** Sean F. O'Neil, Kyle C. McDermott, Yoko Mizokami, John S. Werner, Michael A. Crognale, Michael A. Webster

56.452 **Feature Misbinding of Colour and Motion: The Role of Object Shape** Yang Sun, Steven Shevell

Special Populations: Lifespan Development

Tuesday, May 12, 2:45 – 6:45 pm
Poster Session, Vista Ballroom

56.501 **Choosing between detection and identification tasks in developmental studies: is a shift in paradigm necessary?** Julie Hanck, Armando Bertone, Audrey Perreault, Kim Cornish

56.502 **Discriminability of "top-heavy" versus "bottom-heavy" geometric patterns in 2-, 3-, 4-, and 5-month old infants.** Hsin-Yueh Hsu, Sarina Hui-Lin Chien

56.503 **Temporal Limit of Phase Discrimination in Infants** Faraz Farzin, Susan Rivera, Staci Sakai, David Whitney

56.504 **The representation of action in memory: A developmental study** Emma Gregory, Natalie Trzcinski, James E. Hoffman, Barbara Landau

56.505 **Mental Rotation in Preterm Children** Nicole Taylor, Lorna Jakobson

56.506 **The development of luminance- and texture-defined form perception during the school-age years.** Armando Bertone, Julie Hanck, Audrey Perreault, Kim Cornish

56.507 **Development of Direction-of-Motion Discrimination to Detection Threshold Ratios (MOT/DET) for Luminance (Light/Dark) and Chromatic (Red/Green) Stimuli: Infants, Adolescents and Adults** Hwan Cui Koh, Elizabeth Milne, Karen Dobkins

56.508 **Age-related changes in contrast gain related to the M and P pathways** Sarah Elliott, John Werner

56.509 **Test of senescent change in photopic spatial summation** Maka Malania, Frederic Devinck, Joseph L. Hardy , Peter B. Delahunt, Kenneth Knoblauch, John S. Werner

56.510 **Age-Related Changes in the Inhibitory: Excitatory Balance in Macaque Monkey Primary Visual Cortex** Kate Williams, Joshua Pinto, David Irwin, David Jones, Kathryn Murphy

56.511 **The effects of aging on contrast discrimination** Christopher M. Fiacconi, Allison B. Sekuler, Patrick J. Bennett

56.512 **Evidence for no increased surround modulation in the aging visual system** Lindsay E. Farber, Allison B. Sekuler, Patrick J. Bennett

56.513 **The effect of aging on the spatial pooling of local orientation signals** Stanley Govenlock, Allison Sekuler, Patrick Bennett

56.514 **Age-Related Differences in the Use of Optical Flow and Landmark Information in Steering Control** Rui Ni, Zheng Bian, John Andersen

56.515 **The effects of fog and aging on the ability to detect collisions.** Amy Guindon, Rui Ni, Zheng Bian, George Andersen

56.516 **Effects of Normal Aging on Face View Adaptation** Ming Mei, Hugh Wilson

56.517 **The Effect of Simulated Cataracts on Speech Intelligibility** Nichole Morris, David Downs, Alex Chaparro

Motion: Mechanisms

Tuesday, May 12, 2:45 – 6:45 pm
Poster Session, Vista Ballroom

56.518 **Psychophysics and neurophysiology of the rapidly generated MAE** Davis M. Glasser, James Tsui, Kevin C. Dieter, Christopher C. Pack, Duje Tadin

56.519 **Neuronal and psychophysical responses to brief motion stimuli** Jan Churan, Farhan A. Khawaja, James M.G. Tsui, Christopher C. Pack

56.520 **Inactivation of area MT has separate influences on the spiking of single neurons and neuron populations in primate V1** Walter Jermakowicz, Roan Marion, Ilya Khaytin, Zhiyi Zhou, Melanie Bernard, A.B. Bonds, Vivien Casagrande

56.521 **Modelling the substructure of direction selective receptive fields in macaque V1** Pamela Baker, Wyeth Bair

56.522 **A unilateral PFC lesion affects neuronal activity in area MT during motion discrimination tasks** Leo, L. Lui, Marc, A. Mancarella, Tatiana Pasternak

56.523 **Temporal modulations of motion properties produce distinct motion-contrast and form-related VEP responses in adults and infants** Jeremy Fesi, Michael Yannes, Rick Gilmore

56.524 **Bistability of flicker vs. rotational apparent motion: psychophysics and steady-state visual evoked potentials (SSVEP)** Yee Joon Kim, Marcia Grabowecky, Satoru Suzuki, Nava Rubin

56.525 **New image velocity code explains contrast and center-surround effects in MT neurons** John A. Perrone, Richard J. Krauzlis

56.526 **Abnormal cortical activation in response to motion in people who have lost one eye early in life** Krista Kelly, Caitlin Mullin, Brenda Gallie, Jennifer Steeves

56.527 **Visual motion retraining of a cortically-blind field increases BOLD responses in peri-lesional cortex and MT+ - a case study** Tim Martin, Anasuya Das, Krystel Huxlin

56.528 **Dotted Ellipses: Local and emergent motion signals differentially modulate BOLD activity in visual cortex** Gideon Caplovitz, Peter Tse

56.529 **The Component Level Feature Model of motion: completed** Linda Bowns

56.530 **Category effects in BOLD response when viewing dynamic natural scenes** Katja M. Mayer, Quoc C. Vuong

56.531 **Decoding human visual cortical activity evoked by continuous time-varying movies** Shinji Nishimoto, An Vu, Jack Gallant

56.532 **New Objective Psychophysical Methodology for Independently Assessing Dorsal and Ventral Processing Systems in Human Vision** Steven R. Holloway, Igor Dolgov, Michael K. McBeath

Attention: Interaction with Memory

Tuesday, May 12, 2:45 – 6:45 pm
Poster Session, Vista Ballroom

56.533 **Distinct roles for frontal and parietal cortex in visual working memory and attention** Shani Offen, Justin Gardner, Denis Schluppeck, David Heeger

56.534 **Working memory and the attentional blink: fMRI investigations of the neural correlates of the working memory bottleneck.** Stephen Johnston, David Linden, Werner Vogels, Kimron Shapiro

56.535 **Working Memory Consolidation Delays Top-down Attentional Processing in Visual Cortex: A Time-Resolved fMRI Study** Paige Scalf, Paul Dux, Rene´ Marois

56.537 **Does Attentional Capture Guide the Contents of Visual Short-term Memory?** Naseem Al-Aidroos, Jay Pratt

56.538 **Working Memory Guidance of Attention Depends on Memory's Relevance for Search** Nancy Carlisle, Geoff Woodman

56.539 **Eye movements during visual search under memory load** Grayden Solman, Daniel Smilek, John Eastwood

56.540 **The Effects of Learning on Visual Search and Change Detection** Conor Mullin, Eric Richards

56.541 **The Mechanisms Underlying Priming of Pop-out** Amit Yashar, Dominique Lamy

56.542 **Retrieval deficits in short term memory (STM) for temporally adjacent items: An Un-Attentional (Mnemonic) Blink?** Claire Benito, Jane Raymond, Kimron Shapiro, Anna Nobre

56.543 **The Attentional Boost Effect** Khena Swallow, Tal Makovski, Yuhong Jiang

56.544 **Learning to reject: over repeated trials, feature-specific inhibitory biases are strengthened, whereas inter-trial feature contingencies are not learned.** Brian Levinthal, Alejandro Lleras

56.545 **Working Memory Influence on Perceptual Processing** Daryl Wilson, Catherine Charbonneau

56.546 **Cross-Hemifield Attention Benefits for Visual Short-Term Memory** Georgina Fleming, Summer Sheremata, David Somers

56.547 **Categorical Effects of Working Memory Load on the Selection of Pop-Out Categorical Oddballs.** Alejandro Lleras, Henry Chen, Brian Levinthal

56.548 **Individual visual short-term memory capacity predicts the number of conjunction errors in Treisman's illusory conjunction task.** JeeWon Ahn, Alejandro Lleras

56.549 **Impact of Global vs. Local Attentional Processing on Visual Working Memory Organization** Lisa Durrance Blalock, Benjamin Clegg

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Wednesday Sessions

Vision and Action: Reaching and Grasping

Wednesday, May 13, 8:30 – 10:00 am
Talk Session, Royal Ballroom 1-3
Moderator: Monika Harvey

8:30 am
61.11 **Change Blindness is Reduced with Responses that Afford Action** Bruce Bridgeman, Philip Tseng

8:45 am
61.12 **Implicit processing of obstacles for immediate but not delayed reaching in a case of hemianopic blindsight.** Christopher Striemer, Craig S. Chapman, Mel A. Goodale

9:00 am
61.13 **On-line reaching to perturbed targets in visual form agnosia (patient DF)** Monika Harvey, Robert McIntosh, Stephen Butler, Larissa Szymanek, Stephanie Rossit

9:15 am
61.14 **Looking forward to a correction: Obstacle avoidance during online correction** Craig S. Chapman, Ravi Doobay, Melvyn A. Goodale

9:30 am
61.15 **Weber's law in action** Tzvi Ganel, Eran Chajut, Daniel Algom

9:45 am
61.16 **Practice does not make perfect: Time allocation in sequential movements** Hang Zhang, Shih-Wei Wu, Laurence Maloney

Perceptual Learning: High-level Influences

Wednesday, May 13, 8:30 – 10:00 am
Talk Session, Royal Ballroom 4-5
Moderator: Michael Herzog

8:30 am
61.21 **Top-down interpretation alters low-level visual processing** Po-Jang Hsieh, Edward Vul, Nancy Kanwisher

8:45 am
61.22 **Learning with attention eliminates attentional blink on a long-term basis** Hoon Choi, Takeo Watanabe

9:00 am
61.23 **Covert attention generalizes perceptual learning** Marisa Carrasco, Lauren Baideme, Anna Marie Giordano

9:15 am
61.24 **Global motion is processed as the entire unit but learned locally** Shigeaki Nishina, Jose Nanez, Mitsuo Kawato, Takeo Watanabe

9:30 am
61.25 **Global resistance to local perceptual adaptation in texture discrimination** Dov Sagi, Nitzan Censor

9:45 am
61.26 **Perceptual learning by mental imagery** Michael Herzog, Elisa Tartaglia, Laura Bamert, Fred Mast

Binocular Vision: Mechanisms

Wednesday, May 13, 11:00 am – 12:45 pm
Talk Session, Royal Ballroom 1-3
Moderator: Laurie M. Wilcox

11:00 am
62.11 **Are stereoscopic cues ignored in telestereoscopic viewing?** Brian Rogers

11:15 am
62.12 **Perceptual asymmetry in stereo-transparency: the role of disparity interpolation** Laurie M. Wilcox, Inna Tsirlin, Robert S. Allison

11:30 am
62.13 **Differential effects of suppressed visual motion information on perception and action during binocular rivalry flash suppression** Miriam Spering, Marc Pomplun, Marisa Carrasco

11:45 am
62.14 **Numbers with higher magnitude have higher perceptual strength during binocular rivalry** Chris Paffen, Ryota Kanai

12:00 pm
62.15 **Binocular rivalry requires visual attention: Evidence from EEG** Peng Zhang, Stephen Engel, Cristina Rios, Bin He, Sheng He

12:15 pm
62.16 **Training Improves Orientation-in-Noise Thresholds in an Animal Model of Amblyopia.** Grayson Roumeliotis, David Jones, Kathryn Murphy

12:30 pm
62.17 **Motion-induced blindness and microsaccades: cause or effect?** Yoram Bonneh, Dov Sagi, Alexander Cooperman, Tobias Donner, David Heeger, Moshe Fried, Amos Arieli

Attention: Interaction with Memory

Wednesday, May 13, 11:00 am – 12:45 pm
Talk Session, Royal Ballroom 4-5
Moderator: David Melcher

11:00 am
62.21 **Neural measures of maintaining and updating object information** Trafton Drew, Todd Horowitz, Jeremy Wolfe, Edward K. Vogel

11:15 am
62.22 **Working memory load alters response to stimuli in early visual cortex.** Todd Kelley, Nilli Lavie

11:30 am
62.23 **A Domain-Independent Source of Cognitive Control for Shifting Attention in Vision and Working Memory** Benjamin J. Rosenau, Michael Esterman, Yu-Chin Chiu, Steven Yantis

11:45 am
62.24 **A shared sensorimotor map for visual memory, counting and trans-saccadic perception** David Melcher

12:00 pm
62.25 **Where's Waldo? How the Brain Learns to Categorize and Discover Desired Objects in a Cluttered Scene** Hung-Cheng Chang, Yongqiang Cao, Stephen Grossberg

12:15 pm
62.26 **Psychophysics of visual memory: What does a memory look like?** Jie Huang, Robert Sekuler

12:30 pm
62.27 **Sometimes change blindness is just visual amnesia** Yair Pinto, Todd Horowitz, Jeremy Wolfe

Neural Mechanisms: Visual Representations

Wednesday, May 13, 8:30 am – 12:30 pm
Poster Session, Royal Ballroom 6-8

63.301 **Visual image reconstruction using automatically determined image bases** Yusuke Fujiwara, Yoichi Miyawaki, Yukiyasu Kamitani

63.302 **A semi-automated solution for increasing the reliability of manually defined visual area boundaries** Sandhitsu Das, Robyn Oliver, Brian Avants, Petya Radoeva, David Brainard, Geoffrey Aguirre, James Gee

63.303 **Absence of behavioural recovery because of absence of cortical reorganization? An fMRI investigation of a left hemianopic patient.** Céline Perez, Céline Cavézian, Carole Peyrin, Frédéric Andersson, Gaëlle Doucet, Olivier Gout, Sylvie Chokron

63.304 **Hemispheric differences of color responses in human ventral visual cortex** Derrik E. Asher, Alyssa A. Brewer

63.305 **Rod signals in human ventral visual cortex** Alyssa A. Brewer, Dantian T. Liu, Nicholas J. Baitoo

63.306 **Where orientation tuning arises** Sam Ling, Joel Pearson, Randolph Blake

63.307 **Figure-ground signals in early and object specific visual areas: A combined fMRI, EEG and TMS study.** Martijn Wokke, H. Steven Scholte, Victor.A.F. Lamme

63.308 **Visual field coverage of human V4** Jonathan Winawer, Rory Sayres, Kaoru Amano, Brian Wandell

63.309 **Functional organization of the primary visual cortex (areas 17 and 18) of the tree shrew revealed by optical brain imaging** Matthieu Vanni, Martin Villeneuve, Martha Bickford, Heywood Petry, Christian Casanova

63.310 **The organization of inter-hemispheric projections from areas 17 and 18 in the human splenium, studied with DTI probabilistic fiber tracking.** Michael Scheel, Linda J Lanyon, Deborah Giaschi, Jason J Barton

63.311 **Multivoxel fMRI analysis reveals the representation of spatial frequency information in human primary visual cortex** Christian Kaul, Bahador Bahrami, Geraint Rees

63.312 **Receptive field properties of V1 neurons coding for luminance histogram skew** Cheryl Olman, Huseyin Boyaci, Jennifer Schumacher, Fang Fang, Katja Doerschner

63.313 **Processing animacy in the posterior superior temporal sulcus** Gregory McCarthy, Tao Gao, Brian J. Scholl

Face Perception: Experience, Learning and Expertise

Wednesday, May 13, 8:30 am – 12:30 pm
Poster Session, Royal Ballroom 6-8

63.314 **Perceptual expertise has an emotional side: Holistic face processing is modulated by observers' emotional state** Kim Curby, Kareem Johnson, Alyssa Tyson

63.315 **Expertise CAN explain why face perception is sensitive to spatial frequency content!** N. Rankin Williams, Isabel Gauthier

63.316 **Hitting your peak at age 30: behavioral evidence for extended development of face learning ability** Laura Germine, Brad Duchaine, Ken Nakayama

63.317 **Does your height affect the way you represent faces?** Isabelle Bülthoff, Tobias Wolf, Ian M. Thornton

63.318 **Genetic and environmental contributions to memory for faces: a twin study** Jeremy B. Wilmer, Laura Germine, Mark A. Williams, Ken Nakayama, Christopher F. Chabris, Bradley C. Duchaine

63.319 **Differential Sociocultural Experience Moderates Latency of Facial Age Judgments** Gizelle Anzures, Liezhong Ge, Zhe Wang, Shoji Itakura, Kang Lee

63.320 **Face Recognition Subserves Nature not Nurture** Roberto Caldara, Sebastien Miellet, Xinyue Zhou

63.321 **The Information subtending the other-race effect** Daniel Fiset, Caroline Blais, James Tanaka, Martin Arguin, Daniel Bub, Frédéric Gosselin

63.322 **Inverting Faces Elicits Sensitivity to Race on the N170 Component: a Cross-Cultural Study** Kay Foreman, Luca Vizioli, Guillaume Rousselet, Roberto Caldara

63.323 **Dissociating contributions of configural and component information to the own-race advantage in face recognition** William Hayward, Mintao Zhao, Olivia Cheung, Gillian Rhodes, Isabel Gauthier

63.324 **Holistic gender perception for both own-race and other-race faces** Mintao Zhao, William Hayward

63.325 **Forgetting faces in a crowd: Faster memory decay for other-race faces?** Lindsey Short, Danielle Longfield, Paul Talvitie, Catherine Mondloch

Attention: Resource Competition

Wednesday, May 13, 8:30 am – 12:30 pm
Poster Session, Orchid Ballroom

63.401 **More Wheels Makes Attention Spin Slower.** James Macdonald, Rufin VanRullen

63.402 **Between-Object Superiority in Divided Attention** W. Trammell Neill, Yongna Li, George Seror, Patrick O'Connor

63.403 **Dividing Attention between Two Simultaneous Visual Tasks: the Magnocellular System** Scott Watamaniuk, Satomi Maeda, Allen Nagy

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63.404 **Dividing Attention between Two Simultaneous Visual Tasks I: the Parvocellular System & the Koniocellular System** Satomi Maeda, Allen Nagy, Scott Watamaniuk

63.405 **Bilateral Attentional Advantage in Gabor Detection** Nestor Matthews, Jenna Kelly

63.406 **Enumerating visual items within and across hemifields** Jean-Francois Delvenne, Julie Castronovo, Nele Demeyere, Glyn Humphreys

63.408 **Vision and audition do not share attentional resources in sustained tasks** Roberto Arrighi, David Burr

63.409 **Decision-relevant Contextual Constraints on Human Decision Behavior** Carlos Cabrera, Zhong-Lin Lu, Barbara Dosher

63.410 **The effects of fixation and passive attention on the object recognition.** Takuma Murakoshi, Yoshihisa Osada

63.411 **Effects of spatial attention on contrast sensitivity for motion discrimination revealed by center-periphery dual visual task paradigm** Masayuki Sato, Keiji Uchikawa

63.412 **Localized attentional interference reflects competition for reentrant processing** Kelly S. Steelman-Allen, Jason S. McCarley, Jeffrey R. W. Mounts

63.413 **Reporting two simultaneous targets: Competition, bias, and temporal displacement** Jennifer Olejarczyk, Brad Wyble, Mary C. Potter

63.414 **Detecting the presence of a singleton does not require focal attention** Howard Egeth, Jeffrey Moher

Eye Movements: Mechanisms

Wednesday, May 13, 8:30 am – 12:30 pm
Poster Session, Orchid Ballroom

63.415 **Functional MRI Analysis of Cortical Activation During Saccadic Adaptation** Mark W. Greenlee, Steven Blurton, Markus Raabe

63.416 **Monkey and human performance in a chronostasis task suitable for neurophysiology** J. Patrick Mayo, Marc A. Sommer

63.417 **Eye movements when viewing natural scenes with normal vision and simulated scotomas** Vanessa Doyon-Cadieux, Constantina Stamoulos, Aaron Johnson

63.418 **Allocentric spatial information improves saccadic accuracy under task conditions that load spatial memory or limit saccade preparation time** Paul Mitchell, Jay Edelman

63.419 **Covert Orienting Reflex: Involuntary pupil response predicts microsaccade production.** Matthew Schneps, L. Todd Rose, Susana Martinez-Conde, Marc Pomplun

63.420 **Eye movements and visuospatial perceptual extrapolations compete for common resources** Marc S Tibber, Dean R Melmoth, Simon Grant, Michael J Morgan

63.421 **The global effect induced by ''blind'' distractors in visual hemifield defects** Stefan Van der Stigchel, Tanja C.W. Nijboer, Douwe D.P. Bergsma, Mathias Abegg, Jason J.S. Barton

63.422 **Relationship between eye movement and filling-in time** Masae Yokota, Yasunari Yokota

63.423 **Static and Dynamic Visual Acuities of Athletes** Herb Yoo, Alan Reichow, Graham Erickson, Karl Citek

63.424 **Stereo-depth with dichoptic perisaccadic spatial distortions illustrate a head-centric disparity mechanism** Zhi-Lei Zhang, Christopher Cantor, Clifton Schor

63.425 **Effects of saccadic adaptation on visual localisation** Eckart Zimmermann, Markus Lappe

63.426 **The main sequence of human Optokinetic Nystagmus** Andre Kaminiarz, Kerstin Königs, Frank Bremmer

63.427 **Sensitivity to chromatic contrast at the time of saccades** Paola Binda, Jonas Knöll, Frank Bremmer, M. Concetta Morrone

63.428 **Measuring the properties of the post-saccadic visual error calculation** Henry Lo, Tyler Garaas, Marc Pomplun

63.429 **Error in localising a target that is flashed near the time of an isolated saccade is not identical to the error found near the time of the last of a sequence of saccades** Femke Maij, Eli Brenner, Jeroen Smeets

63.430 **The Role of Visual Working Memory in Establishing Object Correspondence across Saccades** Andrew Hollingworth, Steven J. Luck

63.431 **Look at the Choices: An Examination of Looking Behaviours in a Multiple Choice Test** Cho Kin Cheng, Lisa-Marie Collimore, Dwayne E. Paré, Shakinaz Desa, Steve Joordens

Visual Search: Mechanisms and Special Populations

Wednesday, May 13, 8:30 am – 12:30 pm
Poster Session, Orchid Ballroom

63.432 **Reward Modulation of Search and Priming of Pop-Out** Y. Jeremy Shen, Marvin M. Chun

63.433 **Spatiotopic Priming in Visual Search** Maryam Vaziri Pashkam, Patrick Cavanagh

63.434 **No need for inhibitory tagging of locations in visual search** Johan Hulleman

63.435 **Saccadic target selection and crowding.** Jelmer de Vries, Ignace Hooge, Frans Verstraten

63.436 **Oculomotor and manual search compared: The role of cognitive complexity and memory load** Melissa Kibbe, Eileen Kowler, Jacob Feldman

63.437 **From lab to life: Cognitive strategy fails to influence real-world search** A.A. Brennan, M.R. Watson, A. Kingstone, J.T. Enns

63.438 **Contextual cues facilitate search in real world 3-D environments** Stephen C Mack, Wade Schoonveld, Miguel P Eckstein

63.439 **The Effects of Task Demands on the Dynamics of Visual Search in Virtual 3D Displays** Marc Pomplun, Tyler Garaas, Marisa Carrasco

63.440 **Novice and expert performance on a computerized lifeguarding task: A second look** Lyndsey K. Lanagan-Leitzel, Cathleen M. Moore

63.441 **We Find Before We Look: Neural Signatures of Target Detection Preceding Saccades During Visual Search** An Luo, Lucas Parra, Paul Sajda

63.442 **Imagined Perspective Modulates Cue Effectiveness in Visual Search of Air Traffic Control Displays** Evan Palmer, Chris Brown, Carolina Bates, Timothy Clausner, Philip Kellman

63.443 **A new step towards understanding Embedded Figures Test performance in the autism spectrum** Renita Almeida, J. Edwin Dickinson, Murray Maybery, Johanna Badcock, David Badcock

63.444 **Visual Field Loss, Eye Movements and Visual Search** Lee McIlreavy, Jozsef Fiser, Peter Bex

63.445 **Relationship of visual search performance to Schizotypal personality measures for normal observers** Steven Shimozaki, Robert Saunders, Elizabeth Bryant

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Topic Index

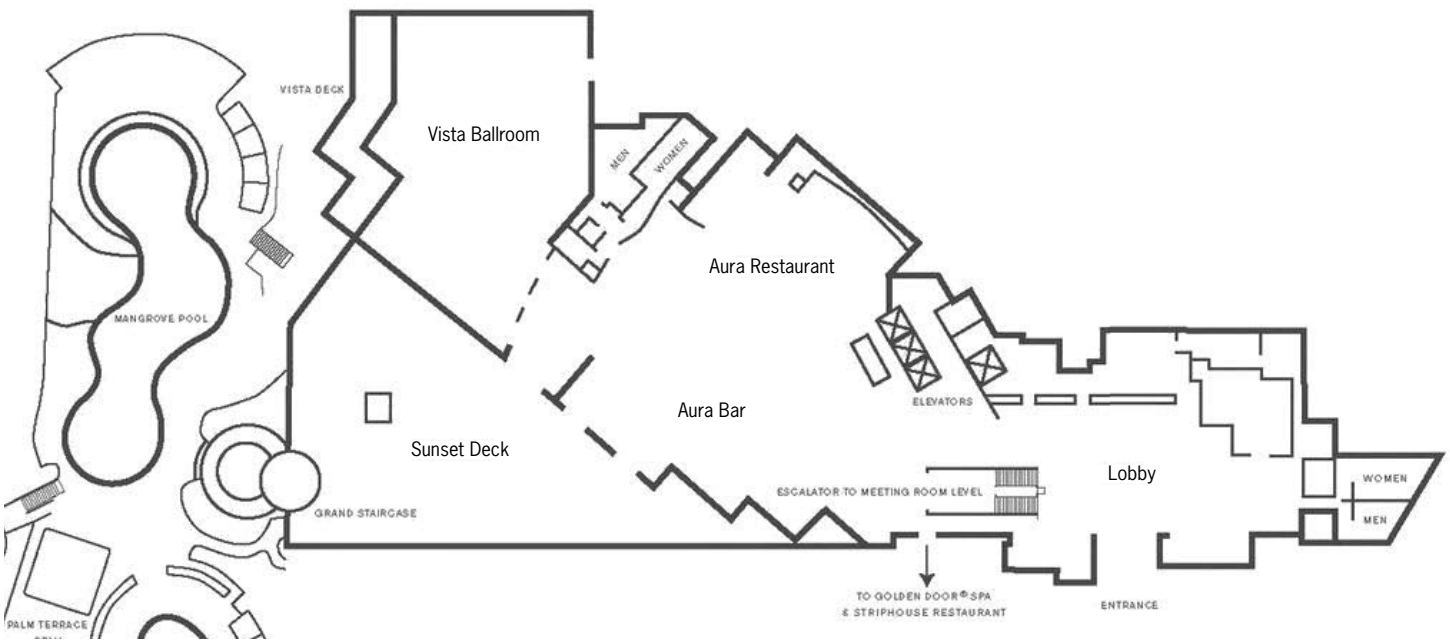
Below is a list of talk and poster sessions by topic. Parentheses indicate which abstracts are included in each session.

Author Index

Entries are indexed by abstract number, not page number; **bold** entries indicate first author abstracts.
"S" entries indicate symposia.

Hotel Floorplan

Lobby Level (1st Floor)



Ballroom Level (2nd Floor)