

OSA Fall Vision Meeting 2010



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OVERVIEW

Since 2001, the OSA Fall Vision Meeting has grown as a high-quality, low-cost conference focused on all aspects of the visual system. In even years, the conference is held in Rochester with the generous assistance of the University of Rochester and the Center for Visual Science.

This year's meeting includes invited sessions on advances in retinal imaging, animal color vision, the language and cognition of color, contrast gain control mechanisms, seeing motion in three dimensions and ocular accommodation. There will also be two sessions of contributed talks and posters.

During this year's meeting we will also present the 2010 Tillyer Award to Professor Stephen Burns from Indiana University in recognition of his longstanding service to vision science. The Tillyer Award was established in 1953 through an endowment from the American Optical Co. It is presented not more than once every two years to a person who has performed distinguished work in the field of vision, including (but not limited to) the optics, physiology, anatomy or psychology of the visual system. There will be a lecture by Steve followed by a banquet in his honor.

Poster Display Guidelines

- The poster should be put up during registration, Friday, October 24. The poster session will be held in the Flaum Atrium, which is adjacent to the meeting room. You are asked to stay with your poster from 11:15-12:45 and 3:45-4:30 on Friday, and from 1:45-2:30 on Saturday. You should leave your poster up until lunch on Sunday. Please remove it promptly during the lunch break on Sunday as we will need to put away the easels and posterboards.

- The posters should be prepared to fit on **5ft high by 3.5ft wide** foam core poster board that has a white background. We have limited space to display posters, so please note the orientation requirements.
- All boards will be numbered. Attach your poster to the board that corresponds to your number on the "Poster Presentations" list in the program booklet.
- We will have a supply of pushpins available at the registration desk should you be unable to bring your own. Do not use tape.
- Do not try to mount heavy materials, as they will have difficulty staying attached to the foam core poster board.

ORGANIZATION

Division Chair (10/07 - 10/10)

- Alex Wade, Smith-Kettlewell Eye Research Institute

Division Chair-elect (10/07-10/10)

- Joseph Carroll, Medical College of Wisconsin

Clinical Vision Sciences Chair (10/07 - 10/10)

- Carol Westall, The Hospital for Sick Children

Clinical Vision Sciences Vice-chair (10/07 - 10/10)

- Jason Porter, University of Houston, Optometry

Applications of Visual Science Chair (10/07 - 10/10)

- Melanie Campbell, University of Waterloo

Applications of Visual Science Vice-chair (10/07 - 10/10)

- Laura Walker-Renninger, SKERI

Vision Chair (10/09 - 10/11)

- Geraint Rees, UCL

Vision Vice-chair (10/09 - 10/11)

- Alyssa Brewer, UCI

Color Chair (10/09 - 10/11)

- Kathy Mullen, McGill University

Color Vice-chair (10/07 - 10/09)

- David Brainard, UPenn

Local Organizing Committee

- David Williams
- Duje Tadin
- Debbie Shannon
- Sara Peterson

Program Schedule

All talks will be held in the Class of '62 Auditorium

All Breakfasts, Breaks, and Lunches will be held in the Medical Center Atrium

Friday, October 22, 2010

8:00 am - 9:00 am Breakfast, Registration, and Put up Posters

9:00 am - 9:15 am Welcome, **David Williams**, University of Rochester

Comparative color vision across the animal kingdom

Moderator: **Gerald Jacobs**, University of California, Santa Barbara

9:15 am - 9:45 am **Nathaniel Dominy**, University of California, Santa Cruz

Selective advantages of mono- and dichromatic vision among nocturnal primates

9:45 am - 10:15 am **Claude Desplan**, New York University

Detection and processing of color information in *Drosophila*

10:15 am - 10:45 am **Almut Kelber**, Lund University

Colour vision in dim light

10:45 am - 11:15 am **Joseph Corbo**, Washington University

The cone photoreceptor mosaics of the avian retina

11:15 am - 12:45 pm Poster Session (with coffee)

12:45 pm - 1:45 pm Lunch

Contributed color session

Moderator: **David Brainard**, University of Pennsylvania

1:45 pm - 2:00 pm **Joanna Crook**, University of Washington

Circuitry and receptive field structure underlying 'double duty' performance by midget ganglion cells

2:00 pm - 2:15 pm **Patrick Monnier**, Colorado State University

Estimating the properties of the chromatic mechanisms mediating the processing of large color differences

2:15 pm - 2:30 pm **Hannah Smithson**, Durham University

Using Stroop interference to reveal cognitive colour spaces

2:30 pm - 2:45 pm **Keiji Uchikawa**, Tokyo Institute of Technology

Degree of color constancy obtained by luminance balance of color samples

2:45 pm - 3:00 pm **Daniela Petrova**, University College London

The temporal characteristics of the early and late stages of the visual pathways signaling brightness and colour

3:00 pm - 3:15 pm **Luis Garcia-Suarez**, McGill Vision Research

Form detection for second order isoluminant red-green stimuli

3:15 pm - 3:45 pm Break

3:45 pm – 5:15 pm Poster Session

5:15 pm – 6:15 pm Presentation of Tillyer Medal & Tillyer Lecture

7:00 pm Tillyer Banquet, Colgate Divinity School

Saturday, October 23, 2010

8:00 am - 8:30 am Breakfast

Advances in Retinal Imaging

Moderator: **Adrian Podoleanu**, University of Kent

8:30 am – 9:00 am **Xincheng Yao**, University of Alabama at Birmingham

Intrinsic optical signal monitoring of visual signal propagation from the photoreceptor to inner retina

9:00 am - 9:30 am **James Fujimoto**, Massachusetts Institute of Technology

Ultrahigh speed imaging with swept source Fourier domain OCT

9:30 am – 10:00 am **Don Miller**, Indiana University

Research-grade OCT: what new can it reveal about photoreceptors?

10:00 am – 10:30 am **William Seiple**, Lighthouse International

A comparison of structural and functional relationships using an OCT/SLO/Microperimeter

10:30 am - 11:00 am Break

Contributed Vision Session

Moderator: **Alyssa Brewer**, University of California, Irvine

11:00 am - 11:15 am **Jennifer Hunter**, University of Rochester

Towards functional measurements of vision in the living macaque retina using two-photon fluorescence imaging

11:15 am - 11:30 am **Suzanne McKee**, Smith-Kettlewell Eye Research Institute

Surface segmentation is more powerful in the fixation plane: evidence from EEG source imaging

11:30 am - 11:45 am **Damien Mannion**, University of Sydney

Anti-correlation between natural scene orientation structure and activity in visual cortex

11:45 am - 12:00 pm **Andrew Haun**, Schepens Eye Research Institute

Blur sensitivity is best when adapted to normal imagery

12:00 pm - 12:15 pm **Kevin Dieter**, University of Rochester

Eye-specific plasticity induced by binocular rivalry training

12:15 pm - 12:30 pm **Athena Buckthought**, The Hospital for Sick Children

The neural correlates of two forms of bistability: a comparison of binocular and monocular rivalry with fMRI

12:30 pm - 1:00 pm Business Meeting

1:00 pm – 2:00 pm Lunch

2:00 pm - 3:30 pm Poster Session

Seeing motion in depth

Moderator: **Suzanne McKee**, Smith-Kettlewell Eye Research Institute

3:30 pm – 4:00 pm **Julie Harris**, University of St. Andrews

Comparing two mechanisms for the perception of binocular motion in depth

4:00 pm – 4:30 pm **Alex Huk**, University of Texas at Austin

Motion processing with 2 eyes in 3 dimensions

4:30 pm – 5:00 pm **Mark Nawrot**, North Dakota State University

Using the dynamic geometry of the motion/pursuit ratio to study motion parallax

5:00 pm – 5:30 pm **Greg DeAngelis**, University of Rochester

Neural representation of depth from motion parallax in visual area MT

6:30 pm Dinner, Nixon-Peabody

Sunday, October 24, 2010

8:00 am - 8:30 am Breakfast

The cognition and language of color

Moderator: **Jonathan Winawer**, Stanford University

8:30 am – 9:00 am **Delwin Lindsey**, Ohio State University

How categorical is color perception?

9:00 am - 9:30 am **Kimberly A. Jameson**, University of California, Irvine

Evolutionary models of color categorization based on realistic observer models and population heterogeneity

9:30 am – 10:00 am **Anna Franklin**, University of Surrey

Color categories in infancy

10:00 am – 10:30 am **Tom Griffiths**, University of California, Berkeley

Simulating the transmission of systems of color terms in the laboratory

10:30 am - 11:00 am Break

Normalization mechanisms and contrast gain control

Moderator: **Duje Tadin**, University of Rochester

11:00 am - 11:30 am **David Ferster**, Northwestern University

Diverse mechanisms of contrast normalization in primary visual cortex

11:30 am – 12:00 pm **Tony Norcia**, Smith-Kettlewell Eye Research Institute

Normalization of contrast responses in the visual cortex of humans and mice as seen in the frequency-tagged EEG

12:00 pm - 12:30 pm **Steve Dakin**, University College London

Deficits in processing sensory context in schizophrenia

12:30 pm - 1:00 pm **Eyal Seidemann**, University of Texas at Austin

Complex spatiotemporal dynamics of V1 population responses explained by a simple gain-control model

1:00 pm - 2:00 pm Lunch

2:00 pm - 2:15 pm Young Investigator Award

Mechanisms of accommodation

Moderator: **Howie Howland**, Cornell University

2:15 pm - 2:45 pm **Rowan Candy**, Indiana University

Accommodation during visual development

2:45 pm – 3:15 pm **Maggie Woodhouse**, Cardiff University

Accommodation in Down syndrome – more questions than answers

3:15 pm - 3:45 pm **Adrian Glasser**, University of Houston

Surgical restoration of accommodation in presbyopia

3:45 pm – 4:15 pm **Jean-Marie Parel**, Bascom Palmer Eye Institute

Assessing primate accommodation and its restoration by Optical Coherence Tomography and Ultrasound Biomicroscopy in an ex-vivo accommodation simulator

END OF MEETING