



The Retina Receives and the Cortex Believes

PROGRAM

Program Committee
Margaret Donohue
Bogdan Dreher
Ian Morgan
Srini Srinivasan
David Vaney
Sagar Vidyasagar

Monday 27 January 1997

4.00 pm-6.00 pm

Registration
Foyer, Research School of Biological Sciences

Posters: Should be put up in the adjoining marquee at this time
and must be no more than 1m wide and 1.5m deep.

6.00 pm-8.00 pm

Reception and welcome to the Festschrift

PLENARY LECTURES

8.00pm

Speaker:

Ted Jones

Reflections on the neurone doctrine

Chairperson:

Ann Sefton

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Tuesday 28 January

7.45 am-8.15 am BREAKFAST (RSBS Foyer)

8.15 am-9.00 am Speaker:
Horace Barlow
What's the plot?
Chairperson:
Brian Cleland

MORNING SESSION: ASSOCIATION CORTEX

9.00 am-9.30 am LECTURE IN ROBERTSON THEATRE
Speaker:
Jean Bullier
*Functional interactions
between visual cortical areas
in the monkey*
Chairperson:
Mark Rowe

9.30 am-10.30 am POSTER VIEWING IN MARQUEE
(with morning tea)
See reverse for participants.

10.30 am-11.30 am POSTER FORUM
Co-ordinators:
Rick Van Sluyters
Jon Currie
Ian Morgan

11.30 am-12.00 am LECTURE IN ROBERTSON THEATRE
Speaker:
Michael Goldberg
*Parietal mechanisms for visuo-
spatial attention in the
monkey*
Chairperson:
Cobie Brinkman

12.00 am-1.30 pm LUNCH

ASSOCIATION CORTEX

György Benedek, Gyula Kovács and Gyula Sáry

Coding the location of visual stimuli in extremely large receptive fields: microelectrode studies in the feline anterior ectosylvian cortex.

D.P. Crewther, S.G. Crewther and A. Klistorner

The ratio of parvo to magnocellular pathway contributions to the multifocal VEP- age and mentation related effects.

Corinna Darian-Smith, Sue Edwards and Ian Darian-Smith

A close relationship: thalamic pulvinar and the posterior parietal cortex in the macaque monkey.

C. Wang, N. Assaad, M. Ptito, W. Burke and B. Dreher

Excitatory convergence of Y and non-Y information channels onto single neurones in the "higher order" motion visual area in the ectosylvian cortex of the cat.

G.N. Elston and M.G.P. Rosa

Cellular morphology parallels functional specificity in V1 and V2. A study in the macaque monkey.

T. FitzGibbon, R.G. Bittar and B. Dreher

If you believe, do you tell only selected individuals or every Tom, Dick and Bogdan? Corticoreticular projections from a number of different visuotopic areas.

Alan W. Freeman

Parallel pathways in human visual cortex.

A. Klistorner, D. Crewther and S. Crewther

Saturation revealed separate pattern and colour-opponent components in human VEP.

J.W. Morley and R.M. Vickery

Spatial and temporal frequency selectivity of cells in area 21A of the cat.

Ken Sanderson

Neurogenesis in brushtailed possum limbic system.

H.Q. Zhang, G.M. Murray, A.B. Turman, P.D. Mackie and M.J. Rowe

Parallel processing in cortical somatosensory areas I and II of the primate: II. Effects of reversible SI inactivation on SII unitary responses.

Tuesday 28 January

AFTERNOON SESSION: PRIMARY VISUAL CORTEX

- 1.30 pm-2.00 pm LECTURE IN ROBERTSON THEATRE
 Speaker:
 Jon Kaas *Emerson*
*Theories of visual cortex
 organisation*
 Chairperson:
 Barbara Gillam
- 2.00 pm-2.30 pm LECTURE IN ROBERTSON THEATRE
 Speaker:
 Kevan Martin
*Processing in cortical micro-circuits:
 The new synthesis.*
 Chairperson:
 Corinna Darian-Smith
- 2.30 pm-3.30 pm POSTER VIEWING IN MARQUEE
 (with afternoon tea)
 See reverse for participants
- 3.30 pm-4.30 pm POSTER FORUM
 Co-ordinators:
 Ann Goodchild
 Ulf Eysel
- 4.45 pm-5.45 pm PLENARY LECTURE
 Speaker:
 Bob Wurtz
*From vision to movement: The visuomotor
 transformation in monkey superior colliculus.*
 Chairperson:
 Liam Burke

PRIMARY VISUAL CORTEX

R.M. Emerson

Simple and complex directionally selective cortical cells both compute motion energy using nonlinear subunits.

U.T. Eysel, J.M. Crook, I.A. Shevelev, M. Rausch and Z.F. Kisvárdy

Cortical contributions to orientation and direction specificity. (The eyes would not believe what the cortex sees).

L.J. Garey and X.X. Yan

Development of interneuronal subsets in human cerebral cortex.

Ann K. Goodchild

Distribution of calcium binding protein immunoreactivity in the visual cortex of a new world monkey, the marmoset *Callithrix jacchus*.

B. Tighilet and E.G. Jones

Glutamate receptors and type II calcium-calmodulin-dependent protein kinase in adult monkey visual cortex.

T. Kasamatsu, K. Mizobe, U. Polat and A.M. Norcia

Contrast threshold of area-17 cells: A determinant of the context-dependent modulation of cellular responses.

C.A. Leamey, L.R. Marotte and P.M.E. Waite

The initial projection from the cortex to the thalamus in the marsupial mammal, the wallaby (*Macropus eugenii*).

Paul R. Martin, Andrew J.R. White, Heath D. Wilder, Ann K. Goodchild, Jason R. Potas and Ann E. Sefton

Segregation of receptive field properties in the lateral geniculate nucleus of a new world primate, the marmoset (*Callithrix jacchus*).

Wednesday 29 January

MORNING SESSION: RETINA AND ITS PROJECTIONS

9.00 am-9.30 am LECTURE IN ROBERTSON THEATRE

Speaker:

Anita Hendrickson

*Development of the primate
outer retina*

Chairperson:

Paul Martin

9.30 am-10.30 am POSTER VIEWING IN MARQUEE

(with morning tea)

See reverse for participants

10.30am-11.30 am POSTER FORUM

Coordinators:

Ted Maddess

Yutaka Fukuda

Ian Morgan

11.30 am-12.00 am LECTURE IN ROBERSON THEATRE

Speaker:

Heinz Wasse

*Vision in darkness: the rod
circuit of the mammalian
retina*

Chairperson:

Larry Thibos

12.00 am-1.30 pm LUNCH

RETINA AND ITS PROJECTIONS

Tricia L. Chan and Ulrike Grünert

Horizontal cell connections with the short wavelength sensitive cones in the retina of a New World monkey, the common marmoset, *Callithrix jacchus*.

T. Chan-Ling, J.M. Provis, S. Hughes and H. Yang

Vascular development in human retina: Mechanisms and topography.

S.G. Crewther, J.A. Beresford, H. Liang and D.P. Crewther

Photoreceptor and choroidal dynamics in form deprivation and negative lens defocus myopia.

Malini Devadas and Ian Morgan

Retinal control of scleral precursor synthesis.

S.L. Firth, I.G. Morgan and M.K. Boelen

D1 dopamine receptor immunoreactivity in the chicken retina.

Y. Fukuda, M. Watanabe, T. Miyoshi and H. Sawai

Morphological and physiological properties of cat's retinal ganglion cells with regenerated axons.

Susan J. Galvin, David R. Williams, and Nancy J. Coletta

Motion reversal data reveal two stages of sampling, and show that parasol cells do not mediate motion perception on their own.

Krishna K. Ghosh and Paul R. Martin

Ganglion cell populations in the retina of a new world monkey, the common marmoset, *Callithrix jacchus*.

J.M. Hemmi, T. Maddess and R.F. Mark

Spectral sensitivities of the photoreceptors in the tammar wallaby (*Macropus eugenii*).

S.-G. He and R.H. Masland

Changes in the response of directionally selective ganglion cells in the rabbit retina induced by laser ablation of starburst amacrine cells.

I.G. Morgan and M.K. Boelen

A retinal dark-light switch.

Catherine Morgans, Rowland Taylor, Amy Berntson and Heinz Wässle

Sites of calcium entry and calcium extrusion are spatially segregated in photoreceptor synapses.

K.A. Rose, W.R. Levick and W. Burke

Changes in the receptive fields of cat retinal ganglion cells affected by pressure on the optic nerve.

E. Strettoi and R.H. Masland

The number of unidentified amacrine cells in the rabbit's retina.

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 Ganglion Cells
 Amacrine cells as last
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Wednesday 29 January

AFTERNOON SESSION: VISUAL DEVELOPMENT AND PSYCHOPHYSICS

- 1.30 pm-2.00 pm LECTURE IN ROBERTSON THEATRE
Speaker:
 Jack Pettigrew
 *Comparative physiology of
 binocular vision*
Chairperson:
 Laurence Garey
- 2.00 pm-2.30 pm LECTURE IN ROBERTSON THEATRE
Speaker:
 Richard Mark
 *Development of visual
 connections to the
 colliculus and cortex in
 mammals: mechanisms in common.*
Chairperson:
 Sally McFadden
- 2.30 pm-3.30 pm POSTER VIEWING IN MARQUEE
 (with afternoon tea)
 See reverse for participants
- 3.30 pm-4.30 pm POSTER FORUM:
 Srini Srinivasan
- 4.45 pm-5.45 pm PUBLIC LECTURE IN ROBERTSON THEATRE
 (Sponsored by the Vision, Touch and Hearing Research Centre,
 University of Queensland)
Speaker:
 V.S.(Rama) Ramachandran
 (Title to be announced)
Chairperson:
 Peter Bishop
- 8.00 pm CONFERENCE DINNER

VISUAL PSYCHOPHYSICS

Barbara Gillam

Implicit stereopsis: A case of uniocular occlusion.

Psy/encod

Trevor Hine and Michael Cook

Illusory relative motion between rigidly moving gratings.

photo/encod

Martin Hofmann

Characterising optic flow.

photo/encod

Bill Jagger

Optics in the watery world: Trout and octopus zero in on the same great idea.

Encod/psy

J.J. Kulikowski

Coding linear contrast of moving images by the striate cortex.

T. Maddess, S. Bedford, A.C. James and K.A. Rose

A multiple frequency multiple region PERG investigation of nonlinear retinal signals.

photo/encod

Sally McFadden

A new way that birds accommodate.

Base

S. Oleskevich and M.V. Srinivasan

A mechanism of action for synaptic plasticity in the honeybee.

G.W. Stuart, P. Maruff and J. Currie

Object-based visual attention in luminance increment detection?

Psy

Larry N. Thibos, Yi-Zhong Wang and Arthur Bradley

Retina deceiving and the cortex mis-believing: Spatial and temporal aliasing in human vision.

Encod/psy

Jonathan D. Victor and Keith P. Purpura

Stimulus coding and temporal structure of spike trains in visual cortex.

Base

S.W. Zhang, A. Mizutani and M.V. Srinivasan

Can bees negotiate mazes by learning path regularity?

Burr Ross Morrone

