



ICVS Lyon: Highlights of the Director's Meeting

Ken Knoblauch, PhD and Steven Buck, PhD

Lyon, France, July 8, 2005

Treasurer and Membership Secretary Anne Kurtenbach reported that ICVS finances are in good shape. Two reasons cited are that paying dues for 2 years at a time has lowered the number of individuals not paying in off-meeting year and the costs for the proceedings have diminished over the last three meetings. Membership is relatively stable.

There was discussion of how to expand recognition of ICVS and how to keep it more visible between meetings. The group endorsed the idea of co-sponsoring other meetings, such as the clinical color vision meeting organized by John Barbur and the OSA Fall Vision meeting, both of which were in fact co-sponsored by ICVS in 2005. More collaborations of this type are in the works. There was also discussion of establishing a clinical/tutorial meeting or satellite session at biennial symposias.

There was also recognition that we need to actively pursue new student members and support their long-term continuation, and that we need participation from both clinical and basic researchers. It was agreed that we should seek funding to continue to offer travel fellowships, which help to increase participation of young investigators and increase diversity of geographic representation. Steve Buck agreed to lead efforts devoted to strategic planning, including identifying emerging scientific specialties and individuals in those specialties who might be invited to join and contribute to

the society, and identifying strategies for retaining current members.

Planning for the 2007 symposium - to be held in Belem, Brazil - is underway in the capable hands of Dora Ventura and Luis Silveira. For 2009 and beyond, Portugal and Norway are possibilities suggested by potential organizers.

Leadership transitions in the Directors and among the officers were discussed. Continuing 4-year terms on the Directors' board are John Barbur, Steven Buck, Jay Neitz, Steven Shevell, Françoise Viénot, and Eberhart Zrenner. Directors not seeking re-election are Anne Kurtenbach and Jean Leid. Up for re-election are Stephen Dain, Kenji Kitahara, Ken Knoblauch, Barry Lee, and John D. Mollon. Additional candidates nominated at the General Business meeting are Del Lindsey, Hannah Smithson, Rigmor Baraas, and Marina Danilova. Elections are forthcoming.

Ken Knoblauch decided not to be considered for re-appointment to another term as General Secretary. The committee nominated Steven Buck. Anne Kurtenbach also decided not to be considered for re-appointment as Treasurer/Membership Secretary. The committee nominated Neil Parry. Both nominees were subsequently elected to their respective posts at the General Business Meeting. Andrew Zele and Dingcai Cao were endorsed for editing future issues of Daltoniana and exploring new uses of the website.

Ken Knoblauch was chosen to chair the committee for the next Verriest Medal selection committee. The rest of the committee will be composed of Jay Neitz, Steven Shevell, André Roth, Kenji Kitahara and Janice Nerger. The President, Joel Pokorny, serves in an ex-officio role. There were also discussions of revising the frequency,

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timing, and focus of the Verriest Medal, which will continue at the next meeting.

Vivianne Smith and *Janos Kulikowski* were nominated by the committee for honorary status.

Revision of the by-laws has been in progress for several years. *Steve Buck* agreed to lead efforts to finalize a draft to be presented to the membership for approval at the 2007 symposium.



MESSAGE FROM THE TREASURER & MEMBERSHIP SECRETARY

Neil Parry, PhD

As this is my first contribution to *Daltoniana*, I'd like to start by saying thanks to *Anne Kurtenbach* who has been treasurer and membership secretary for nine years and has done a superb job. I am taking over both these roles and she has certainly made the transition easy.

This is a fairly quiet time for membership issues, but I'd just like let you know about some changes which you will notice when your membership is due for renewal at the end of this year. British and German banking procedures are a little different and one of the main differences is that it will no longer be possible to send credit card payment to ICVS by fax or mail. Instead, we now have a PayPal account and this can be used to process your credit card payments online. You will not have to join PayPal to do this. The whole thing is quite painless and safe. You will still be able to pay by cheque and in fact you can now do this in your own currency. My overriding priority in setting up these two services is to make your life as easy as possible. Please feel free to email me (Neil.Parry@manchester.ac.uk) if you have any queries.

Editorial

Dingcai Cao, PhD and Andrew J. Zele, PhD

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We would like to thank the Society members for their contributions to *Daltoniana*. This helps *Daltoniana* to be a complete and useful resource to all ICVS members. We are in the process of contracting a web designer to begin the re-development of the ICVS homepage. www.icvs.info will provide access to all ICVS information, such as conferences and resources including *Daltoniana*. In the next issue we plan to introduce a new section on "Junior Society Members Research Profiles". We aim to profile junior researchers from all continents and across all colour vision disciplines within the Society.

Online Directors Committee Elections

Steven Buck, PhD. General Secretary



The election for five members of the Directors' Committee of the International Colour Vision Society is now open. This year, all ballots will be cast

and counted via a secure and anonymous web-based tool that was developed for such purposes here at the University of Washington. The web tool allows only individuals designated by me (represented by their email addresses) to cast votes and keeps track of who has actually voted. However, the web tool reports only the aggregate results to me, without identifying individuals' actual votes. Thus, I will not know how any individual voted. Versions of this web tool have been used here at UW for several years to conduct faculty governance and other official university elections.

In a rotating process, the seats of half of the members of the Directors Committee of the International Colour Vision Society are renewed by election every two years. Five Directors Committee positions, all to serve through ICVS 2009, are up for election at this time. There are nine candidates who were nominated at the 2005 Symposium in Lyon for the five open positions: *Rigmor Barass*, *Stephen Dain*, *Marina V. Danilova*, *Kenji Kitahara*, *Ken Knoblauch*, *Barry Lee*, *Del Lindsey*, *John Mollon*, and *Hannah Smithson*.

You can vote for the five ICVS Directors' Committee positions by following the web link shown below.

<https://catalysttools.washington.edu/tools/survey/?sid=18054&owner=sbuck&pid=ZzP1Zi%2BuwY>

The names of ongoing officers and Directors, as well as the candidates, are shown on the website.

Please take this opportunity to participate in selecting the leadership of your Society. Balloting will be open only until March 31, 2006. If you have not cast your ballot by March 1, you will start to receive automatic weekly reminders about the balloting, until you do vote...so spare yourself the extra email and vote for ICVS Directors today!

If you have any problems with the balloting, please contact me (sbuck@u.washington.edu) or technical support staff identified on the website or the automatic emails.

Colour Vision: Fundamental Studies and Clinical Applications

Jennifer Birch, PhD

(Abridged, full version available at www.icvs.info)

A two day symposium devoted to Fundamental Colour Vision Studies and Clinical Applications was held at City University in November 2005. The meeting was sponsored in part by the by the *International Colour Vision Society (ICVS)*. The symposium brought together the latest results on chromatic sensitivity, and neural substrates involved in chromatic processing, obtained with computerised psychophysical and fMRI techniques. The session topics included the fundamentals of light and colour measurement, colour vision testing, chromatic discrimination and colour appearance, molecular genetics and retinal and cortical acquired coloured vision deficiencies. There were over 45 attendees from many different disciplines.

There were notable contributions to the symposium by ICVS members. *John Barbur*, (Applied Vision Research Centre, UK), described the fundamentals of light and colour measurement and explained the CIE system of colour specification. In a second lecture John considered the question of whether combinations of photopigments with different peak separations relate to the matching ranges found on the Nagel anomaloscope. Normal hue discrimination ellipses and dichromatic isochromatic zones were shown by *Marisa Rodrigues-Carmona* (AVRC) in the CIE chromaticity diagram 1931. *Ken Knoblauch* (INSERM, France) made a clear distinction between coding and perception and reported a number of findings in relation to the development and aging of chromatic mechanisms. *Jennifer Birch* (City University, UK) recommended three well audited colour vision tests for infants based on naming simple geometric shapes. These are the Ishihara test for Unlettered Persons, the Neitz Colour Vision test and The Color Vision Testing Made Easy Test. Jennifer's lecture showed how CIE isochromatic data were used in the design of printed pseudoisochromatic plates and hue discrimination arrangement tests composed of Munsell samples with different hue, value and chroma. It was emphasised that clinical trials are always needed to determine the sensitivity and specificity of pigment screening tests because simultaneous luminance and/or colour contrast may alter the intended colour appearance. It is therefore essential for clinicians/researchers to access published data to confirm that a particular test achieves exactly "what it says on the tin". The Nagel anomaloscope remains the "Gold Standard" reference test for classifying red-green colour deficient subjects taking part in such audits. The session devoted to colour appearance was chaired by *Jack Moreland* (Keele University, UK). *Steve Shevell* (The University of Chicago, USA) gave demonstrations of colour contrast and discussed the factors which influence colour constancy in the binocular viewing of everyday scenes. The molecular genetics mechanisms, which determine the characteristics of L and M photopigments were discussed in two lectures by *Jay Neitz* (Medical College of Wisconsin, USA). New exciting information is being discovered about X chromosome photopigment genes and how these relate to inherited colour deficiency.

Many thank to Jennifer for her comprehensive report.

WEB SITE OF INTEREST

Joe Carroll, PhD

Listed below are a couple web sites that may be of interest to ICVS members. If you have any interesting, fun and/or scientifically useful web sites (old or new ones) that you would like to share with the Society, please forward the URL (and a brief description, if you like) to the Daltoniana Editors.

Rethinking the Process of Vision <http://www.ghuth.com/vision/>

In doing a rudimentary search on color vision I came across this website a few months ago, which challenges the existence of 3 spectral types of cone (in addition to calling into question the idea that the retina is even an image plane of the eye!). Dr. Huth argues that it is not a difference in spectral sensitivity of 3 cone pigments that affords trichromacy, rather physical interactions of two different-sized types of cone and the rods. He explicitly denies the existence of S-cones and he even goes so far as to argue that the genetic "basis" for color vision simply involves genes that encode the physical size of the cone inner segment, not any type of photopigment!

One of the dangerous things about using the internet as a scientific resource is that websites expressing ideas or hypotheses about scientific issues are often intermingled with factual pages on the same topic. It becomes difficult for the novice to separate out fact from fiction. While some of you may find this website a waste of time, others may enjoy the challenge of trying to corroborate his hypothesis with current knowledge about the retina. One of the things I found particularly disturbing was the lack of scholarship (misquoting sources, omitting others). You may have your own comments on the site; feel free to share them with Dr. Huth if you have a moment.

Special Issue on Vision Science and Art - Spatial Vision

Baingio Pinna, PhD

Although there are strong interactions between Science and Art their mutual influences are rarely studied. The main concern of the scientific community has been with vision and the brain mechanisms underlying perception with applications to art being peripheral to the main discourse. The scientific study of objects of Art has not been systematically approached by Vision Science and the Neurosciences. Similarly, the few artists that have exploited the potential of the biology of seeing in their creations did so within the context of Art without addressing aspects of Vision Science. A bridge between Vision Science and Art is beginning to be constructed; recent scientific discoveries contribute to the understanding of Art, and Art seems to incorporate knowledge generated by science. Thus we believe the time has come to further stimulate and speed up this construction and possibly to start creating a Vision Science of Art. This special issue is aimed at a deeper understanding of vision, art, and their relationship, basing on the observation that both visual science and visual arts (i) explore visual perception through its main properties -- colour, spatial vision, shape, visual organization, depth and (nowadays) motion --, (ii) analyze and create a large variety of phenomena that involve a range of objects, from the simplest possible to the most complex ones which involve integration across different sensory modalities; and (iii) answer different but related questions about how and why we see the way we do.

We invite submissions that explore both Vision Science and Art and the link between the science of perception and visual arts. We particularly welcome articles that might suggest new ideas and new findings useful for the experimental foundation of a Vision Science of Art. Manuscripts for this special issue should be submitted before June 15 2006. Authors are encouraged to contact the guest editor of this issue, Dr Baingio Pinna (baingio@uniss.it), if uncertain about the relevance of their work to the issue.



ICVS Lyon 2005. Group Photo by **Cécile Bordier**

COLOUR CALENDAR

Joe Carroll, PhD

Colour Symposia at Upcoming Meetings

A number of upcoming meetings are feature symposia on issues related to color vision.

ARVO Annual Meeting

Fort Lauderdale, FL

April 30-May 4, 2006

<http://www.arvo.org>

“Colour Vision in Primates: New Ideas about Spectral Coding and Processing”

Organized by the VN and RC Sections, Moderator: David Marshak.

OSA Fall Vision Meeting

Rochester, NY

October 6-8, 2006

http://www.cvs.rochester.edu/fvm_2006/index.html

“Evolution of opsins and colour vision” and “Physiology of colour sensations”

Organized by Barry Lee, SUNY College of Optometry & Jay Neitz, Medical College of Wisconsin.

IBRO International Congress of Neuroscience

Melbourne, Australia

July 12-17, 2007

<http://www.ibro2007.org/index.html>

“How the cortex colours in: the neural machinery of colour vision”

Organized by Samuel Solomon, University of Sydney, Australia and Peter Lennie, New York University.

5th Forum of European Neuroscience

Vienna, Austria

July 8-12, 2006

<http://forum.fens.org/2006>

"Retinal pigments not just for vision"

Special symposium organized by Peter Ahnelt, University of Vienna, Austria and Reto Weiler, Carl von Ossietzky University, Germany.

Minutes of the Directors' Meeting of the ICVS, July 11, 2003, University of Washington

Approved for distribution by the ICVS Board of Directors, Lyon, 2005.

The meeting was called to order at 8:45am by the President, *André Roth*, with remarks thanking *Steve Buck* for the organization and the beautiful site of the meeting.

The minutes from the last meeting were discussed and accepted with two additions, the names of the members of the By-laws committee and under Matters Arising, there was a discussion of the German DIN laws on anomaloscopy. J. Moreland has translated these. E. Zrenner was looking into making this an official translation. A. Kurtenbach will pursue this in Tübingen. Membership Secretary: Anne Kurtenbach indicated the society to be in good health. Currently, we have 127 members, which is about the average over the past several years. Student membership is rising. In order to regularize the process of evaluating active memberships, the committee decided to have membership renewal be synchronized to occur on the same year as a conference year, starting in the next conference year, 2005.

Finances Anne Kurtenbach, functioning as acting-treasurer, gave the treasurer's report. As of July 2003, the budget is in good health, thanks largely to the decreasing cost of recent proceedings (and the projected cost of the next one). The committee decided to allot a portion of the budget toward financing student travel and to facilitate attendance by members from under funded countries. The committee decided to invest a portion of the treasury over the 12-18 month period between annual meetings.

Future Meetings K. Knoblauch presented details of the preparations for the Lyon meeting to be held from July 8–12, 2005. Proposed venues of future meetings, Brasil 2007, Porto 2009, were discussed.

Committee Nominations The committee chose Joel Pokorny to replace André Roth as president, with term starting after the meeting. The committee decided to invest Anne Kurtenbach as official treasurer of the Society. Hereafter, the committee will rotate with half of its members coming up for reelection during each conference year. The current committee of directors and officers is composed of the following individuals: *President, Andre Roth, General Secretary, Ken Knoblauch, Treasurer, L. T. Sharpe, Membership Secretary, Anne Kurtenbach, Committee, Jenny Birch, Steven Buck, Stephen Dain, Kenji Kitahara, Barry Lee, Jean Leid, John D. Mollon, Jack Moreland, Joel Pokorny, Eberhart Zrenner.* The following members will end their terms: *J. Birch, L. T. Sharpe, J. Moreland, E. Zrenner.* The decease of *C. R. Cavonius* and the elevation of *J. Pokorny* to President, leave 6 vacancies to be filled. The committee selected the following nominees: *J. Neitz, S. Nascimento, F. Viénot, H. Smithson, S. Buck, J. Barbur, E. Zrenner.* Additional nominees will be sought from the general membership at the Business Meeting. The nominees were selected with the aim of including a broad cross-section, concerning expertise and country of origin. An effort was also made to include younger members in the process, if possible.

Committee for Verriest Medal Organization: The following members of the society were nominated for the next CVM: *André Roth* (coordinator), *Joel Pokorny* (ex officio); *Jay Neitz, John Barbur, Kenji Kitahara, Steven Buck, Gabrielle Jordan.*

Bye-laws discussed: Have decided to discuss the possibility of having the web site be redesigned by a professional web site designer.

The committee voted to nominate *André Roth, Jack Moreland* and *Jennifer Birch* to Honorary membership status, based on their statute as founders of the society and their long time service on its behalf.

Absent: E. Zrenner, J. Leid



John Dalton (1766-1844)

John Dalton described his own colour blindness in 1794. He confused scarlet with green pink and blue. Dalton supposed that his vitreous humor was tinted blue, selectively absorbing longer wavelengths. He instructed that his eyes should be examined after his death, but the examination of the humors revealed they were perfectly clear. Hunt et al., extracted DNA from Dalton's preserved eye and showed that his genetic make up was consistent with him being a deuteranope, lacking the middle wavelength sensitive photopigment. This diagnosis is compatible with the historical record of his phenotype, although it contradicts Thomas Young's belief that Dalton was a protanope.

Modified after Hunt, D.M., Dulai, K.S., Bowmaker, J.K., & Mollon, J.D. (1995). Science, 267, 984.

Left: Statue of John Dalton outside the Dalton Building of Manchester Metropolitan University.