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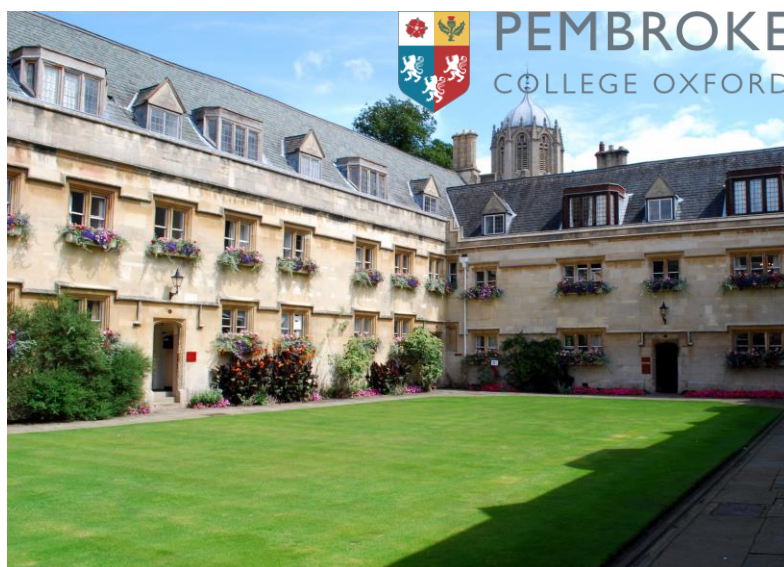
John S. Werner, PhD

Applications for the ICVS 2025 Summer School are due by April 1st

The next ICVS summer school will run from Sunday 10th August to Friday 15th August 2025.

As in previous years, it will take place at Pembroke College, Oxford, UK.

Applications should be sent before April 1st, 2025, to summerschool@icvs.info. See next page for more details.



Contents

ICVS 2025 Summer School	2
Nominations for the 2026 Verriest Medal	4
JOSA A 2025 Feature Issue	5
ICVS 2026	9
Book Review	10

International Colour Vision Society Summer School

10th August - 15th August 2025, Pembroke College, Oxford

We invite applications for the ICVS Summer School 2025 at Pembroke College, Oxford, UK, 10th August - 15th August 2025. The school will accept selected students and young researchers with basic knowledge of colour vision. It will focus on colour vision and its applications. The school will include lectures, discussion, and hands-on workshops, providing opportunities for formal and informal interaction with leading colour vision researchers. Applications should be emailed to summerschool@icvs.info before April 1st, 2025, with subject line "ICVS Summer School". Applications should consist of a single PDF containing

1. A short letter of motivation describing why you want to take the course and how it will be beneficial to you.
2. Your CV including current affiliation (including supervisor) and publications.

The fee is £1000 (which includes tuition, accommodation, breakfast, lunch and a conference dinner). A limited number of grants to help offset costs will be awarded. If a grant is essential for participation this should be justified in the letter of motivation, including information about where you will be travelling from to attend the course. Enquiries may also be sent to the email address above.

Organization: International Colour Vision Society (<https://www.icvs.info/>)

Organizing Committee:

Hannah Smithson (<https://www.psy.ox.ac.uk/team/hannah-smithson>)

Neil Parry (<https://www.manchester.ac.uk/research/neil.parry>)

David Brainard (<http://color.psych.upenn.edu>)

Takuma Morimoto (<https://sites.google.com/view/tmorimoto>)

Rebekah White (<https://www.psy.ox.ac.uk/people/rebekah-white>)

Confirmed Faculty:

David Brainard (Psychology, University of Pennsylvania); Jenny Bosten (Psychology, University of Sussex); Anya Hurlbert (Institute of Neuroscience, University of Newcastle upon Tyne); John Mollon (Psychology, University of Cambridge); Takuma Morimoto (Experimental Psychology, University of Oxford); Sérgio Nascimento (Physics, University of Minho); Neil Parry (Vision Science Centre, Manchester Royal Eye Hospital); Steven Shevell (Psychology and Ophthalmology, University of Chicago); Hannah Smithson (Experimental Psychology, University of Oxford); Andrew Stockman (Institute of Ophthalmology, University College London); Michael Webster

(Psychology, University of Nevada, Reno); Jack Werner (Biological Sciences, University of California, Davis)

With Thanks To Our Confirmed Sponsors:

International Colour Vision Society (<https://www.icvs.info>)

Pembroke College, Oxford (<https://www.pmb.ox.ac.uk/>)

VPixx (<https://vpixx.com/>)



Images of the ICVS Summer School 2023 at Pembroke College, Oxford, UK.

Call for Nominations for the 2026 Verriest Medal



Nominations are open for the 2026 Verriest Medal. The Medal is awarded by the International Colour Vision Society (ICVS) to honour long-term contributions to the knowledge of colour vision. The Medal was established in 1991 in memory of Dr. Guy Verriest and is presented at the ICVS biennial Symposium. Medallists need not have been active in the affairs of the ICVS but must be either current or former members of the society. For more information about the International Colour Vision Society (see www.icvs.info).

To put forward a nominee, submit a letter of nomination and the candidate's curriculum vitae. Candidates previously nominated for the award will be reconsidered in the following two cycles, but their curriculum vitae should be updated. Please take the time to consider and nominate a worthy candidate.

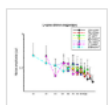
Previous recipients are Harry Sperling (1991), Marrión Marré (1993), Vivianne Smith and Joel Pokorny (1995), Jack Moreland (1997), John Krauskopf (1999), Donald MacLeod (2001), André Roth (2003), John Mollon (2005), Barry Lee (2007), Gerald Jacobs (2009), Steven Shevell (2011), Françoise Viénot (2013), Jack Werner (2015), David Foster (2017), Michael Webster (2019), Paul Martin (2021), and Karl Gegenfurtner (2024).

The 2026 Verriest Medal will be awarded at the 2026 ICVS Symposium, Brighton, UK.

Nominations should be submitted by June 1, 2025 via email to the chair of the Verriest Medal Committee, Mike Webster (mwebster@unr.edu). The other members of the Committee are Rigmor Baraas, Jan Kremers, Ichiro Kuriki, Paul Martin, John Mollon, and Manca Pompe.

JOSA A 2025 Feature Issue

There was a record number of 60 submissions to the Feature Issue. The review process is still ongoing, but we estimate that more than 50 papers will be published. The target publication date is May 1st, 2025. Once the issue is complete, all papers will be freely available for a limited time as part of JOSA A's promotional initiative. Below are the papers published so far.



ERG responses and the Ferry-Porter law

Jan Kremers, Avinash J. Aher, and Cord Huchzermeyer

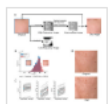
J. Opt. Soc. Am. A 42(5), B1-B7 (2025)



Averaging illumination colors of multi-illumination ensembles

Ruiqing Ma, Ruiqing Xue, and Keizo Shinomori

J. Opt. Soc. Am. A 42(5), B8-B22 (2025)



Visual cues for moisture perception of facial skin: a pilot study on the effects of enhancing high-spatial-frequency components of skin lightness to decrease perceived moisture levels in young Asian observers

Yuya Hasegawa, Hideki Tamura, Tama Kanematsu, Yuzuka Yamada, Yohei Ishiguro, Shigeki Nakauchi, and Tetsuto Minami

 J. Opt. Soc. Am. A 42(5), B23-B33 (2025)



iPhone-based anomaloscope for accessible, accurate color vision testing

Dragos Rezeanu, James A. Kuchenbecker, Maureen Neitz, and Jay Neitz

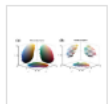
J. Opt. Soc. Am. A 42(5), B34-B42 (2025)



From a color-blind perspective: exploring frustration and confidence in schoolchildren with simulated color vision deficiency

Harpreet K. Dlay and Gabriele Jordan

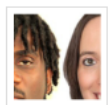
J. Opt. Soc. Am. A 42(5), B43-B49 (2025)



Optimal color sets to represent the colors of natural scenes by k-medoids clustering

José A. R. Monteiro, Dora N. Marques, João M. M. Linhares, and Sérgio M. C. Nascimento

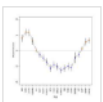
J. Opt. Soc. Am. A 42(5), B50-B55 (2025)



Assessing chromatic discrimination in individuals varying in iris color and ethnic origin

Galina V. Paramei, Nnaemeka Nwanedo, Robin Owen, Margarita Zlatkova, and Irene Senna

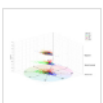
J. Opt. Soc. Am. A 42(5), B56-B67 (2025)



Warm/cool judgments as a function of hue, value, and chroma

Frédéric Devinck and Kenneth Knoblauch

J. Opt. Soc. Am. A 42(5), B68-B75 (2025)



Color statistics of images created by generative AI

Yujin Wang, Mike A. Webster, and Daniel S. Joyce

J. Opt. Soc. Am. A 42(5), B76-B80 (2025)



Influence of chromatic properties of background on color constancy for a two-dimensional stimulus

Tengxuan Hou, Ruiqing Ma, Tanner DeLawyer, and Keizo Shinomori

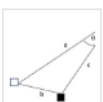
J. Opt. Soc. Am. A 42(5), B81-B100 (2025)



Highlighting illumination color by three-dimensional perception of scene moderates color constancy decline by systematic surface color change in stimulus background

Tengxuan Hou, Ruiqing Ma, Tanner DeLawyer, and Keizo Shinomori

J. Opt. Soc. Am. A 42(5), B101-B117 (2025)



Five problems with color constancy metrics: discussion

Adam Reeves

J. Opt. Soc. Am. A 42(5), B118-B123 (2025)



Changes in illumination color induce powerful illusory rotations

Sylvia Pont and Katja Doerschner

J. Opt. Soc. Am. A 42(5), B124-B132 (2025)



Frequency of mismatching surface colors in the wild

David H. Foster

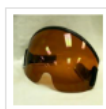
J. Opt. Soc. Am. A 42(5), B133-B147 (2025)



Visual search for warm and cool colors

Jake Manalansan, Camilla Simoncelli, and Michael A. Webster

J. Opt. Soc. Am. A 42(5), B148-B154 (2025)



Method for quantifying loss of central and peripheral color discrimination with tinted lenses

Andrew J. Coia, Andrew J. Mojica, Christopher P. Bartak, Joseph M. Arizpe, and Alan Ashworth

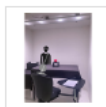
J. Opt. Soc. Am. A 42(5), B155-B166 (2025)



Effect of stimulus size on chromatic discrimination

M. V. Danilova and J. D. Mollon

J. Opt. Soc. Am. A 42(5), B167-B177 (2025)



Near-metameric illumination changes affect visually perceived food attributes

I. Cebioglu, M. Mistry, R. Vasey, and A. Hurlbert

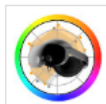
J. Opt. Soc. Am. A 42(5), B178-B189 (2025)



Multicenter evaluation of the color vision screener test

Benjamin E. W. Evans, Marisa Rodriguez-Carmona, Franziska G. Rauscher, Emsal Llapashtica, Vilhelm F. Koefoed, Focke Ziemssen, Rudolph Nitsche, Alessandro Farini, Elisabetta Baldanzi, Luis Gómez-Robledo, Amanda Douglass, Madeline Baker, Roland Quast, Sabine Roelcke, Steven C. C. Ho, and John L. Barbur

J. Opt. Soc. Am. A 42(5), B190-B198 (2025)



Impact of field of view on color constancy in virtual reality

Killian Duay and Takehiro Nagai

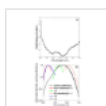
J. Opt. Soc. Am. A 42(5), B199-B213 (2025)



Modeling wavelengths and spectral half-power bandwidths for Rayleigh equation anomaloscopes

Stephen J. Dain and Jeffery K. Hovis

J. Opt. Soc. Am. A 42(5), B214-B224 (2025)



Gated amplification of spectrally tuned channels: a neurally motivated potential mechanism for chromatic brightness and the broadened spectral sensitivities of Pi4 and Pi5

Vincent A. Billock, Erica Poole, and Adam M. Preston

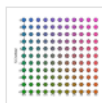
J. Opt. Soc. Am. A 42(5), B225-B234 (2025)



Assessing chromatic discrimination in women on hormonal contraceptives

Galina V. Paramei, Catherine Ainsworth, and Irene Senna

J. Opt. Soc. Am. A 42(5), B235-B244 (2025)



Achromatic loci in normal and anomalous trichromats

Fatemeh Basim, Arsiak Ishaq, Jesse R. Macyszko, Erin Goddard, Vanessa Honson, Juno Kim, Kimberly A. Jameson, and Michael A. Webster

J. Opt. Soc. Am. A 42(5), B245-B255 (2025)



Dynamics of S-cone contributions to the initiation of saccadic and smooth pursuit eye movements

Yuan Zhang, Giulia Agosti, Shuchen Guan, Doris I. Braun, and Karl R. Gegenfurtner

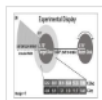
J. Opt. Soc. Am. A 42(5), B256-B265 (2025)



Does background color influence the perception of facial expression? Adjustment to neutral expression by Caucasian and Japanese participants

Tarja Peromaa, Kaisa Tiippana, Kun Qian, and Maria Olkkonen

J. Opt. Soc. Am. A 42(5), B266-B273 (2025)



Dependence of brightness induction on the contrast polarity of a disk-annulus stimulus

Osman Kavcar, Michael E. Rudd, and Michael A. Crognale

J. Opt. Soc. Am. A 42(5), B274-B281 (2025)



Evaluation of participants' awareness of color vision deficiency: a comparative analysis of self-reported diagnosis and objective diagnostic testing

Zane Jansone-Langina and Renars Truksa

J. Opt. Soc. Am. A 42(5), B282-B288 (2025)



Color screening outcomes on uncalibrated "home" displays—assessment of variability in sRGB color standard parameters on commercial visual displays

Benjamin E. W. Evans, Marisa Rodriguez-Carmona, Emsal Llapashtica, and John L. Barbur

J. Opt. Soc. Am. A 42(5), B289-B295 (2025)

ICVS 2026

ICVS 2026 will be in Brighton, UK on 14th-18th August 2026. We look forward to welcoming you at the Attenborough Centre for Creative Arts at the University of Sussex. The venue is easily accessible from Brighton city centre and is in close proximity to a train station and bus links. It is a lovely venue with an auditorium that seats up to 350, refurbished in 2016.

Jenny Bosten, Anna Franklin, Ana Rozman, John Maule, Alice Skelton, Tom Baden, Ian Pennock, Daniel Osorio and Christoph Witzel



Book Review

A review of *Supporting Colour Blindness in Education and Beyond*, by Marie Difolco, with a Foreword by Anya Hurlbert. Routledge, 2025.

Here is a book written by the mother of a protanope, who has been much exercised by her son's dichromacy. Recalling her first realisation of his diagnosis, she writes: "I was horrified. I did my best to hide my shock..." So it is a campaigning book, directed primarily at other parents of children with variant forms of colour perception, and it argues forcibly that colour blindness should be recognised as a Disability and as a Special Educational Need. The book prompts the question of whether ICVS should be embracing the view that any 'colour deficiency' is a disability or whether we should be celebrating the glorious diversity of different forms of human colour perception. Those who work in Psychology Departments will be keenly aware of the analogous debate that divides conflicting approaches to Autism Spectrum Disorder.

Difolco's account of the molecular biology and the retinal physiology of colour vision is best passed over. This is not a book that will well explain colour vision and its variants to other parents. And almost all the references are to websites and secondary sources. But the great strength of Difolco's book is the listing it offers of the many ways in which a dichromatic child may be handicapped in our modern colour-coded world. Among our own members, the late Barry Cole collected comprehensive examples of the challenges that faced the colour blind in the twentieth century, but Difolco has much extended the list of difficulties that a daltonian student may nowadays face in the classroom, in the examination hall, in the lecture theatre, and on the sports field. After 2009, screening of schoolchildren's colour vision was withdrawn in England, apparently on the basis of an analysis of the 1958 British Birth Cohort. That analysis found no effects of CVDs on educational attainment by the age of 33 (Cumberland, 2004, BMJ, 329, 1074). Yet the members of the 1958 cohort would have largely been instructed with white chalk on blackboards and with textbooks that had few illustrations in colour. Today, colour is cheap, and is used endlessly and casually in educational books and websites; and yet, in England at least, children go unscreened.

Although Difolco gives her reader some awareness that there are degrees of colour deficiency, a troubling feature of her text is that she often lumps together the myriad different forms ("Colour Blindness is a non-visible, physical disability affecting 1 in 12 males"; "One in seven women will be a carrier of the 'Colour Blind gene'."). All the many simulations in the book are dichromatic ones. Yet many anomalous trichromats – despite giving the alternative readings of the transformation plates of the Ishihara – have a firm grasp of the difference between red and green, and indeed can discriminate spectral power distributions that are metamers for the normal. It would be inappropriate to encourage such people to see themselves as disabled. Much harm

might well be done by engendering feelings of inferiority in anomalous children at an early age – and by engendering guilt and anxiety in their mothers.

It is a nice question, however, whether even true dichromats should be encouraged to think of themselves as disabled rather than as diverse. Many members of ICVS will have had the experience of diagnosing an adult dichromat at the anomaloscope – and then being taken aback as the dichromat correctly volunteered the colours of objects in the room. Most dichromats are trichromatic for large fields or for objects that they can manipulate and can view at different angles. And of course, in some compensation for the ubiquitous colour coding that has come upon our world, there are now telephone apps that would allow every young daltonian to carry a colorimeter in his pocket (provided his school agrees).

Nevertheless, although we might not want to declare them disabled, dichromats are unquestionably disadvantaged; and much could be done – as Difolco presses – by avoiding confusable coding of thin lines and small details in educational materials and by educating trainee teachers. Difolco has a long and thoughtful list of adjustments that can be made in the classroom and on the sports field. ‘Universal Color Design’ in Japan were pioneers in this field and achieved national success in changing books intended for schoolchildren.

And perhaps too we should be offering active training in the use of secondary cues. Justin Broackes has drawn attention to one such group of cues – the relative change in sensation-luminance as an object is tilted between say, sunlight and skylight, or is moved between the macula-filtered central field and a more parafoveal position. Implicit, passive perceptual learning is often powerful, but it’s a slow business. Sometimes all that is needed is conscious attention to a relevant cue. It would be well worth investigating experimentally whether young daltonians could gain from explicit instruction.

Certainly, there should be routine early testing of colour vision so that daltonians can be guided away from professions that manifestly require good colour discrimination, so that teachers can make appropriate adjustments to educational materials, and perhaps so that children can be taught the use of both artificial and natural aids. However, the nature of the screening needs thought. The century-old Ishihara is a wonderfully sensitive instrument, but it is ‘failed’ by many anomalous trichromats with good red-green discrimination (and by the occasional child who simply misreads those curly Japanese 6’s and 9’s). It is useful for anomalous trichromats to know that they have variant forms of colour vision, but then they need a rather sophisticated explanation of what that means in a given case (neither children nor parents would get such an explanation from the present book). A useful phenotypic boundary might be the absence of a major transposition on that old faithful, the D15. But work would be needed to discover how to establish such a boundary economically with modern equipment in national screening programs. A dichotomous classification may not be

enough. And even then, the most difficult task would be that of conveying to students, teachers, and parents the significance of the classification.

For my own part, I'd be reluctant to classify any of the common forms of CVD as disability, although the chromatically challenged child may well be disadvantaged. When talking to children with variant forms of colour vision (and to their parents), I try keenly not to rouse anxieties or to hint at handicap or deficit. I speak of the diversity of human colour perception, discuss the known ability of the daltonian to penetrate chromatic camouflage that defeats the wild-type observer, and encourage parents to speak to their children in terms of warm and cold colours. But not every member of ICVS will agree with me. 'Disability, Diversity, or Disadvantage?' might recommend itself as the title of a discussion at a future symposium of our Society.

Anya Hurlbert's Foreword is thoughtful, accurate, and tactful. It is the wisest part of this book.

John Mollon