



ICVS Officers

John D. Mollon, DSc, FRS
President

Sérgio Nascimento, PhD
General Secretary

Neil Parry, PhD
Treasurer

Board of Directors

Jenny Bosten, PhD

Jan Kremers, PhD

Paul R. Martin, PhD

Yoko Mizokami, PhD

Maureen Neitz, PhD

Galina Paramei, PhD

Manca Tekavčič Pompe, MD, PhD

Keizo Shinomori, PhD

Hannah Smithson, PhD

Michael Webster, PhD

John S. Werner, PhD

Dear colleagues and friends,

Our next ICVS meeting is planned for the beginning of July 2024 (most likely 5.-9.7.2024) in Ljubljana, Slovenia. Our organizing committee has already started activities in hope of preparing a memorable event, both from scientific and social points of view. We are looking forward to meeting you all in Ljubljana and have some unforgettable days together.

Kind regards,

Manca Tekavčič Pompe in the name of ICVS 2024 Organizers



Organizing committee members:

Manca Tekavčič Pompe, MD, PhD, *Paediatric Ophthalmology, University Eye Clinic, Ljubljana*

Marko Hawlina, MD, PhD, *Neuro-ophthalmology & Retinal dystrophies, University Eye Clinic, Ljubljana*

Gregor Belušič, PhD, *Animal physiology, University of Ljubljana*

Maja Šuštar Habjan, PhD, *Laboratory for visual electrodiagnostics, University Eye Clinic, Ljubljana*

Andrej Meglič, PhD, *Laboratory for visual electrodiagnostics, University Eye Clinic, Ljubljana*

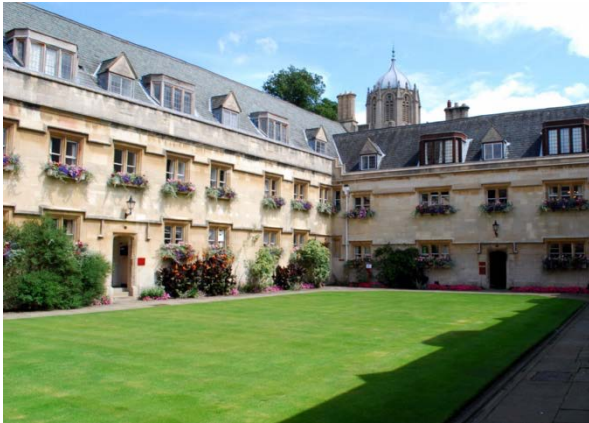
Nika Vrabič, MD, *University Eye Clinic, Ljubljana*

Ana Rozman, PhD, *School of Psychology, University of Sussex*

Contents

ICVS Symposium 2024	1	ICVS Summer School 2023	2
Call for Verriest Medal Nominations	3	JOSAA Feature Issue	3

ICVS Summer School, 30th July - 4th August 2023



We're pleased to report that the summer school has now become a regular fixture on the ICVS calendar. One of the society's biggest priorities is the future of colour science. With this in mind, back in 2015, Sergio Nascimento proposed that we could help promising young people with a high-quality Summer School, in the 'quiet' period between the 2-yearly symposia. So far over 100 young researchers have benefitted, many forming lasting links with their peers and senior members of the society.

Since its inception in 2016 it has been held at Pembroke College, Oxford. Although the pandemic forced us to run the

2020 school as an on-line only event, we are back on track for an in-person residential school this year. For each summer school, we have hosted about 35 to 40 students, and 2023 promises a similar-sized school. In July we expect to welcome 39 participants from 11 different countries in North and South America, Europe, Africa and India.

We have been able to offer grants to about one third of the students, thanks to the generous support of our sponsors, Vision Research (Elsevier), VPixx, the Colour Group (GB), Cambridge Research Systems and ICVS. We are also grateful to Pembroke College and Optica for their organisational and financial assistance.

Students and faculty will be together for the whole week, engaging with basic lectures, hands-on practical labs and networking activities. Social events will present the opportunity for less formal discussions. They will have the opportunity to build an LED-based anomaloscope, designed specifically for this school. They will also be encouraged to develop an outreach activity for 100 high school students who will be attending Pembroke College's Access Week at the same time.

The school is fully booked and we are unable to take any further applications, but it's not too early to start thinking about 2025, so keep an eye on the ICVS website.

The faculty:

- David Brainard (Psychology, University of Pennsylvania)
- Jenny Bosten (Psychology, University of Sussex)
- Karl Gegenfurtner (Psychology, Giessen University)
- Anya Hurlbert (Institute of Neuroscience, University of Newcastle upon Tyne)
- John Mollon (Psychology, University of Cambridge)
- Neil Parry (Vision Science Centre, Manchester Royal Eye Hospital)
- Sara Patterson (Center for Visual Science, University of Rochester)
- Steven Shevell (Psychology and Ophthalmology, University of Chicago)
- Hannah Smithson (Experimental Psychology, University of Oxford)
- Allie Hexley (Experimental Psychology, University of Oxford)
- Andrew Stockman (Institute of Ophthalmology, University College London)
- Sérgio Nascimento (Physics, University of Minho)
- Michael Webster (Psychology, University of Nevada, Reno)

From the organisers: Neil Parry, David Brainard, Hannah Smithson and Allie Hexley

Call for Nominations for the 2024 Verriest Medal

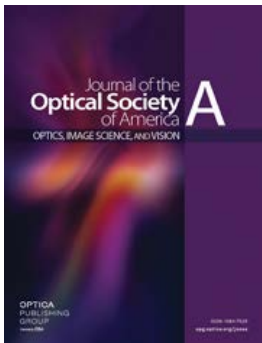
Nominations are open for the 2024 Verriest Medal. The Medal is awarded by the International Colour Vision Society (ICVS) to honour long-term contributions to the knowledge of colour vision. The Medal was established in 1991 in memory of Dr. Guy Verriest and is presented at the ICVS biennial Symposium. 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 automatically in the following two cycles. Please take the time to consider and nominate a worthy candidate.

Previous recipients are Harry Sperling (1991), Marrion 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), and Paul Martin (2021).

The 2024 Verriest Medal will be awarded at the 2024 ICVS Symposium, Ljubljana, Slovenia.

Nominations should be submitted by June 1, 2023 via email to the chair of the Verriest Medal Committee, David Foster (d.h.foster@manchester.ac.uk).



Feature Issue Based on 2022 ICVS Symposium

Color Vision 2023: Introduction by the feature editors

John S. Werner, Jenny Bosten, David H. Brainard, Marina Danilova, Anya Hurlbert, Thanasis Panorgias, and Neil Parry

J. Opt. Soc. Am. A 40(3), CV1-CV2 (2023) View: [HTML](#) | [PDF](#)

Verriest Lecture

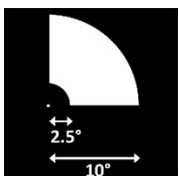


The Verriest Lecture: Pathways to color in the eye and brain (/abstract.cfm?uri=josaa-40-3-V1)

Paul R. Martin

J. Opt. Soc. Am. A 40(3), V1-V10 (2023) View: [HTML](#) (/viewmedia.cfm?uri=josaa-40-3-V1&seq=0&html=true) | [PDF](#) (/viewmedia.cfm?uri=josaa-40-3-V1&seq=0)

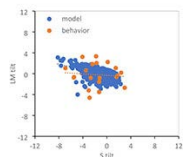
Color Discrimination, Appearance, and Performance



Reaction time measures of non-chromatic contamination in opponent stimuli

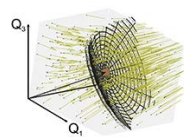
Ian J. Murray and Neil R. A. Parry

J. Opt. Soc. Am. A 40(3), A114-A120 (2023) View: [HTML](#) (/viewmedia.cfm?uri=josaa-40-3-A114&seq=0&html=true) | [PDF](#) (/viewmedia.cfm?uri=josaa-40-3-A114&seq=0)



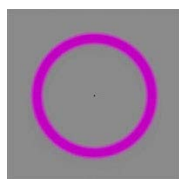
Using equiluminance settings to estimate the cardinal chromatic directions for individuals

Alex J. Richardson, Kassandra R. Lee, Michael A. Crognale, and Michael A. Webster
 J. Opt. Soc. Am. A 40(3), A169-A177 (2023) View: HTML (/viewmedia.cfm?uri=josaa-40-3-A169&seq=0&html=true) | PDF (/viewmedia.cfm?uri=josaa-40-3-A169&seq=0)



Measurement of individual color space using a luminous vector field

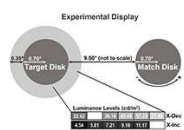
David Alleysson and David Méary
 J. Opt. Soc. Am. A 40(3), A199-A207 (2023) View: HTML (/viewmedia.cfm?uri=josaa-40-3-A199&seq=0&html=true) | PDF (/viewmedia.cfm?uri=josaa-40-3-A199&seq=0) [Suppl. Mat. (3)]



Differences in color fading and recovery under sustained fixation

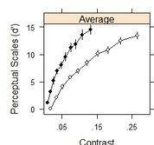
Rytis Stanikunas, Alvydas Soliunas, Remigijus Bliumas, Karolina Jocabalte, and Algirdas Novickovas
 J. Opt. Soc. Am. A 40(3), A33-A39 (2023) View: HTML (/viewmedia.cfm?uri=josaa-40-3-A33&seq=0&html=true) | PDF (/viewmedia.cfm?uri=josaa-40-3-A33&seq=0)

Achromatic and Chromatic Mechanisms



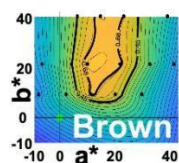
Parabolic achromatic color matching functions: Dependence on incremental and decremental luminance

Michael E. Rudd, Osman Kavcar, and Michael A. Crognale
 J. Opt. Soc. Am. A 40(3), A57-A64 (2023) View: HTML (/viewmedia.cfm?uri=josaa-40-3-A57&seq=0&html=true) | PDF (/viewmedia.cfm?uri=josaa-40-3-A57&seq=0)



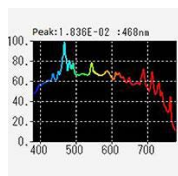
Color appearance of spatial patterns compared by direct estimation and conjoint measurement

Frédéric Devinck and Kenneth Knoblauch
 J. Opt. Soc. Am. A 40(3), A99-A106 (2023) View: HTML (/viewmedia.cfm?uri=josaa-40-3-A99&seq=0&html=true) | PDF (/viewmedia.cfm?uri=josaa-40-3-A99&seq=0)



Perception of brown with variation in center chromaticity and surround luminance

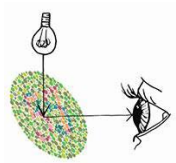
Keizo Shinomori and John S. Werner
 J. Opt. Soc. Am. A 40(3), A130-A138 (2023) View: HTML (/viewmedia.cfm?uri=josaa-40-3-A130&seq=0&html=true) | PDF (/viewmedia.cfm?uri=josaa-40-3-A130&seq=0)



Melanopsin-driven surround induction on the red/green balance of yellow

Tanner DeLawyer and Keizo Shinomori
 J. Opt. Soc. Am. A 40(3), A40-A47 (2023) View: HTML (/viewmedia.cfm?uri=josaa-40-3-A40&seq=0&html=true) | PDF (/viewmedia.cfm?uri=josaa-40-3-A40&seq=0)

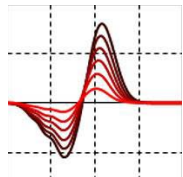
Color Deficiency and Assessment Mechanisms



Screening for mild anomalous trichromacy using the Ishihara plates test

Lucy P. Somers and Jenny M. Bosten

J. Opt. Soc. Am. A 40(3), A208-A219 (2023) View: [HTML \(/viewmedia.cfm?uri=josaa-40-3-A208&seq=0&html=true\)](#) | [PDF \(/viewmedia.cfm?uri=josaa-40-3-A208&seq=0\)](#)



Modeling D15 test sequences in red-green anomalous trichromacy

Renārs Trukša, Sergejs Fomins, Zane Jansone-Langina, and Jānis Dzenis

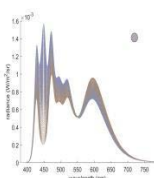
J. Opt. Soc. Am. A 40(3), A85-A90 (2023) View: [HTML \(/viewmedia.cfm?uri=josaa-40-3-A85&seq=0&html=true\)](#) | [PDF \(/viewmedia.cfm?uri=josaa-40-3-A85&seq=0\)](#)



Recommendations and requirements for the wavelengths in Rayleigh equation anomaloscopes

Stephen J. Dain and Jeffrey K. Hovis

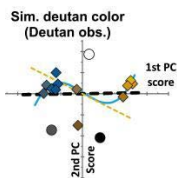
J. Opt. Soc. Am. A 40(3), A121-A129 (2023) View: [HTML \(/viewmedia.cfm?uri=josaa-40-3-A121&seq=0&html=true\)](#) | [PDF \(/viewmedia.cfm?uri=josaa-40-3-A121&seq=0\)](#)



Color constancy for daylight illumination changes in anomalous trichromats and dichromats

Stacey Aston, Gabriele Jordan, and Anya Hurlbert

J. Opt. Soc. Am. A 40(3), A230-A240 (2023) View: [HTML \(/viewmedia.cfm?uri=josaa-40-3-A230&seq=0&html=true\)](#) | [PDF \(/viewmedia.cfm?uri=josaa-40-3-A230&seq=0\)](#)

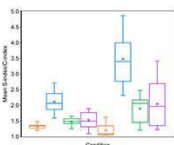


Word and color impressions measured with normal and simulated deutan color stimulus sets in color vision normal and deuteranopic observers ([/abstract.cfm?uri=josaa-40-3-A65](#))

Ippe Negishi and Keizo Shinomori

J. Opt. Soc. Am. A 40(3), A65-A84 (2023) View: [HTML \(/viewmedia.cfm?uri=josaa-40-3-A65&seq=0&html=true\)](#) | [PDF \(/viewmedia.cfm?uri=josaa-40-3-A65&seq=0\)](#)

Clinical Applications



Effect of laser eye protection devices on color perception

Kate Coney, Larry Abel, Renee Karas, Maria Gavrilesu, and Amanda Douglass

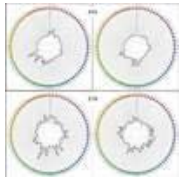
J. Opt. Soc. Am. A 40(3), A9-A15 (2023) View: [HTML \(/viewmedia.cfm?uri=josaa-40-3-A9&seq=0&html=true\)](#) | [PDF \(/viewmedia.cfm?uri=josaa-40-3-A9&seq=0\)](#) [Suppl. Mat. (1)]



Clinical analysis of the Konan-Waggoner D15 color vision test using the Surface-Pro display

Ali Almustanyir, Reema Alduhayan, Mosaad Alhassan, and Jenery K. Hovis

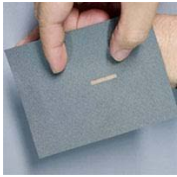
J. Opt. Soc. Am. A 40(3), A91-A98 (2023) View: [HTML \(/viewmedia.cfm?uri=josaa-40-3-A91&seq=0&html=true\)](#) | [PDF \(/viewmedia.cfm?uri=josaa-40-3-A91&seq=0\)](#)



Elimination of the color discrimination impairment along the blue–yellow axis in patients with hypothyroidism after treatment with levothyroxine as assessed by the Farnsworth–Munsell 100 hue test

Kalina Racheva, Tsvetalin Totev, Emil Natchev, Nadejda Bocheva, Raymond Beirne, and Margarita Zlatkov

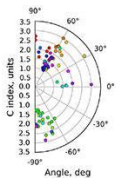
J. Opt. Soc. Am. A 40(3), A26-A32 (2023) View: HTML (</viewmedia.cfm?uri=josaa-40-3-A26&seq=0&html=true>) | PDF (</viewmedia.cfm?uri=josaa-40-3-A26&seq=0>)



Demonstration of the bluish color on veins

Chanprapha Phuangsuan, Mitsuo Ikeda, and Janejira Mepean

J. Opt. Soc. Am. A 40(3), A107-A113 (2023) View: HTML (</viewmedia.cfm?uri=josaa-40-3-A107&seq=0&html=true>) | PDF (</viewmedia.cfm?uri=josaa-40-3-A107&seq=0>)

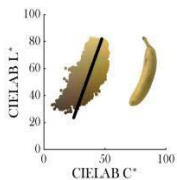


Evaluation of color vision related quality of life changes due to cataract surgery

Zane Jansone-Langina and Maris Ozolinsh

J. Opt. Soc. Am. A 40(3), A139-A148 (2023) View: HTML (</viewmedia.cfm?uri=josaa-40-3-A139&seq=0&html=true>) | PDF (</viewmedia.cfm?uri=josaa-40-3-A139&seq=0>)

Color in Natural Objects and Surfaces



Perception of saturation in natural objects

Laysa Hedjar, Matteo Toscani, and Karl R. Gegenfurtner

J. Opt. Soc. Am. A 40(3), A190-A198 (2023) View: HTML (</viewmedia.cfm?uri=josaa-40-3-A190&seq=0&html=true>) | PDF (</viewmedia.cfm?uri=josaa-40-3-A190&seq=0>)



Effects of specular roughness on the perception of color and opacity

Yuyang Cai, Hiroaki Kiyokawa, Takehiro Nagai, Leyla Haghzare, Matthew Arnison, and Juno Kim

J. Opt. Soc. Am. A 40(3), A220-A229 (2023) View: HTML (</viewmedia.cfm?uri=josaa-40-3-A220&seq=0&html=true>) | PD(</viewmedia.cfm?uri=josaa-40-3-A220&seq=0>)



Task-dependent extraction of information from videos of iridescent and glossy samples

Li Shiwen, Takuma Morimoto, Julie M. Harris, and Hannah E. Smithson

J. Opt. Soc. Am. A 40(3), A160-A168 (2023) View: HTML (</viewmedia.cfm?uri=josaa-40-3-A160&seq=0&html=true>) | PDF (</viewmedia.cfm?uri=josaa-40-3-A160&seq=0>)

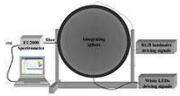


Sensory representation of surface reflectances: assessments with hyperspectral images

Hamed Karimipour, J. Kevin O'Regan, and Christoph Witzel

J. Opt. Soc. Am. A 40(3), A183-A189 (2023) View: HTML (</viewmedia.cfm?uri=josaa-40-3-A183&seq=0&html=true>) | PDF (</viewmedia.cfm?uri=josaa-40-3-A183&seq=0>) [Suppl. Mat. (1)]

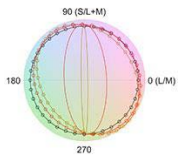
Computational Models of Color Discrimination, Appearance and Constancy



Accurate luminance and chromaticity controls of digital colors using CIE-based RGBW algorithms

Ni Tang, Jiyong Wang, Baofeng Zhang, Hao Chen, and Min Qiu

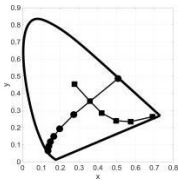
J. Opt. Soc. Am. A 40(3), A178-A182 (2023) View: [HTML \(/viewmedia.cfm?uri=josaa-40-3-A178&seq=0&html=true\)](#) | PDF ([/viewmedia.cfm?uri=josaa-40-3-A178&seq=0](#))



Gaining the system: limits to compensating color deficiencies through post-receptoral gain changes

Kara J. Emery, Zoey J. Isherwood, and Michael A. Webster

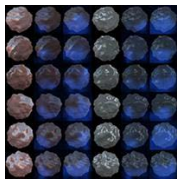
J. Opt. Soc. Am. A 40(3), A16-A25 (2023) View: [HTML \(/viewmedia.cfm?uri=josaa-40-3-A16&seq=0&html=true\)](#) | PDF ([/viewmedia.cfm?uri=josaa-40-3-A16&seq=0](#))



From cones to color vision: a neurobiological model that explains the unique hues

Dragos Rezeanu, Maureen Neitz, and Jay Neitz

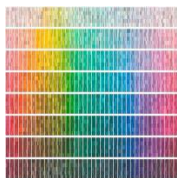
J. Opt. Soc. Am. A 40(3), A1-A8 (2023) View: [HTML \(/viewmedia.cfm?uri=josaa-40-3-A1&seq=0&html=true\)](#) | PDF ([/viewmedia.cfm?uri=josaa-40-3-A1&seq=0](#))



Modeling surface color discrimination under different lighting environments using image chromatic statistics and convolutional neural networks

Samuel Ponting, Takuma Morimoto, and Hannah E. Smithson

J. Opt. Soc. Am. A 40(3), A149-A159 (2023) View: [HTML \(/viewmedia.cfm?uri=josaa-40-3-](#)



Object-based color constancy in a deep neural network

Hamed Heidari-Gorji and Karl R. Gegenfurtner

J. Opt. Soc. Am. A 40(3), A48-A56 (2023) View: [HTML \(/viewmedia.cfm?uri=josaa-40-3-A48&seq=0&html=true\)](#) | PDF ([/viewmedia.cfm?uri=josaa-40-3-A48&seq=0](#))

All members are welcome to contribute to *Daltoniana*. Past issues can be accessed via www.icvs.info. Along with the Society's published Proceedings, they provide an historical record of many major advances in the field of colour vision.