



iSCC
INTER-SOCIETY COLOR COUNCIL

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ISCC Board of Directors Corner

Alicia D. Keshishian

As an artist and designer all my life, I didn't know that working as a color professional was an option. So, at this ripe age, deep into a long career, I'm thrilled to be in the orbit of other color-obsessed people at ISCC. It took a while, but I feel like I've landed in the arena with my peeps. While an executive board member of the Color Marketing Group I attended The Munsell Symposium in Boston. As many of you recall it was a supercharged event which deepened my attraction to a group promoting art, design, education and science. So, now, I'm thrilled to be on the board of the ISCC.

If I could peek back at my life through a time machine, my observations would clearly reveal my life's path. Like so many of us, I had certain affinities that I didn't recognize. At a very young age, before I even knew what these were, I was obsessed with bad kerning and irregular leading in publications. I was flabbergasted to see people wearing outfits displaying "bad" color combinations and equally intrigued by a blue and red striped skirt that appeared purple. Clearly those curiosities fueled my career path forward.

My mother was a painter. My father was a photographer. My paternal grandmother was a painter. My maternal grandmother won awards for creating floral arrangements.

My aunt was a painter. My uncles were textile collectors. So, I was surrounded by active participation of art my entire life with an emphasis on color appreciation.

I began studying art at a very young age and that propelled me through my education toward a career in the arts. Majoring in fine art was dreamy until a professor pointed out to me that, in fact, I was a "designer." Though it was unclear what that meant; he was right.

I LOVE design. I rejoice in the entire process from concept to finished piece with a love of manufacturing thrown in. Magazines. Brochures. Surface Design. Textiles. Gift and product design. Craft. Teaching. Every job I've ever had has been in the visual arts and it became clear that COLOR was my language of choice. Other designers would hire me to "spec" their colors and I was honored. But a big question always puzzled me: Why was there such inadequate color training during my academic education? I learned while on the job, mostly because other designers had no interest in color matching or press checks. My first job, while in college, was with a textile silkscreen company. On day one, the owner commented that none of the people he'd interviewed for the job came out of art school knowing how to mix colors. Though I got the job, I was solidly in that lackluster group [of not knowing how to mix colors].

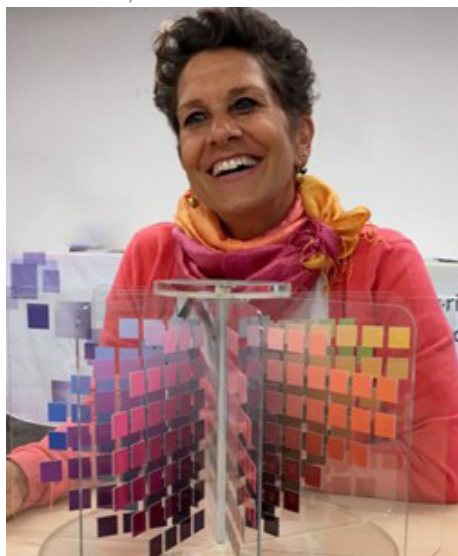
Fast forward – I decided I needed to KNOW more. So, I've been on a quest to learn, learn, learn. While intuition led me to creating "successful" color combinations, I wanted to know why or how these elements related or worked together. Mid-career I made it one of my life's missions to understand color. Now, at this ripe, mature age, the more I learn about color the more I realize a lifetime won't be enough. In the meantime, I'm happy to live in a world where color drives my daily orbit. I've studied the science. I've studied the psychology. I've studied the theory. But all from the perspective of a designer using color as an effective communication tool.

For over 25 years I designed and art directed magazines (politics, fashion, music, film, lifestyle, etc.) in addition to catalogs, direct mail and the social expression industry. I went on to design and art direct in a myriad of industries. All the time, I was dancing toward my current focus which is designing custom carpets. I'm third generation in the rug business, so apparently, I was destined to design and produce carpets.

Throughout my school years. I learned color through the primaries of red, blue, and yellow. For over 20 years, I worked in publishing where CMYK were my primaries. As I evolved into a surface designer the PANTONE system became the dominant color system. After taking many color classes, I have come to embrace the fact that color is not static and there are so many ways to use and observe color. At this point I delight at the chance to share my years of experience, using color, with other color enthusiasts.

As a member of the ISCC I am particularly excited to be working on the Colour Literacy Project with such an internationally diverse group of colorists, discussing and dissecting color. I love imagining a world with a new, transformative approach to color.

As a designer I embrace the opportunity to bridge the disciplines of science, art and education.



Alicia D. Keshishian

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Hue Angles

How to Stay Awake in Standards-Body Meetings

Michael H. Brill

Having recently returned from Committee E12's ASTM 125th Anniversary Celebration in Conshohocken, PA, I examined the promotional button that had been given to the attendees. It was plain and unassuming: black-and-white printing of the logo, the occasion, and the catch phrase "helping our world work better."

"Can't we jazz up this outreach?" I thought. Even our current members find it hard to stay awake in some of our sessions.

I am the Vice Chair of Committee E12 (Color and Appearance). Also, I am the Acting Chair. My friend Jack chairs three of E12's thirteen technical sub-committees. My friend Hugh does intensive work in all the sub-committees. We are all aging out of the ASTM, leaving no successors. A ballot is upon us. No wonder we are thinking about outreach.

On behalf of the ISCC News, Jodi Baker recently asked several of us to write a progress report on the activities of E12. As a first exercise, I found out that E12 originated five standards in the past ten years. The standards themselves do not give the impression of a crescendo of purposeful activity: Two of them pertain to retro-reflective materials, one is a statistical algorithm, one is a color-difference formula, and one is a well-used color-order system.

Such metrics as the number of standards per decade do not get to the heart of ASTM's progress, but Jodi's question surely got to the heart of our outreach problem.

By its nature, standards bodies are difficult to glamorize. A documentary standard represents a consensus between companies to combine their products, say, by company A (making spectrophotometers) buying components from company B (making lamps bought by company A to use in its spectrophotometers). Smooth commerce requires compatible complementary functions. On the other hand, too much collaboration begins to look like a monopoly, which is illegal.

A delicate balance must be struck between not enough consensus (e.g., railroad gauges don't match when they come from opposite sides of a country) and too much consensus (monopoly). In general, a standard does not come close to the bleeding edge of research because research is what distinguishes companies and grows their profits. Research is usually a corporate secret.

Because standards are consensus documents and not news reports, standards bodies are slow in their visible production, and color science particularly shows this tendency.

Without glamor, how are we to sell standards-body membership to our youthful successors? I think we must see standards bodies as a public work, allowing parts of a product from different companies to be assembled according to a public understanding. A documentary standard represents an open covenant among companies who declare compliance with the standard.

Keeping our standards in order requires vigilance, and that is where younger people can make a substantial contribution. We need our standards to be prescriptive (unambiguous in interpretation), current (not obsolete), and driven into existence by commercial necessity (not by the pride of authorship of a few individuals). Right now, ASTM and its volunteer members are working hard to achieve this vigilance. Users and technical contacts of each standard are continually reporting errors back to the originating technical committee, who then revises the standard to correct the errors. That measure improves the standard's prescriptiveness. Each standard is reviewed for revision or withdrawal every 5 years. That addresses the concern about obsolescence.

Finally, a standard announces no individual authorships (although internally ASTM retains lists of contributors so periodic awards can be made). Anonymity of authorship was intended to reduce the incentive of pride-of-authorship. (That measure is not entirely effective, as Danny Rich humorously noted in an ISCC paper from about 2010.)

So, how do you keep awake in a standards-body meeting? Do the necessary job, knowing its general importance, (To fortify my resolve, I have found it helpful to chew on coffee beans.) Also, get into lots of contentious technical discussions at the meetings. I have learned a lot from such discussions at ASTM.

I invite you to get involved in ASTM activities (including individual and organizational membership). Please go to <https://www.astm.org/get-involved/membership.html>

A Blast from the Past: ISCC Newsletters 50 Years Ago

ISCC Newsletter No. 225

July – August 1973

Paula J. Alessi, Senior Color Scientist

The ISCC News No. 225 (1973) is a very interesting issue featuring many articles that highlighted the importance ISCC put on fostering international relationships with color organizations from countries around the world. Again, a full-color photo insert was included for all members to enjoy. One article discussed the color and lighting implications of a domed man-made environment. Car safety colors reinforced what we still know to be true today. The passing of Pablo Picasso at 91 years old prompted a discussion of the quality of his art.

INTERNATIONAL CONTRIBUTIONS

In 1973, the color evolution/revolution was not only booming in the United States. It was also prevalent in countries around the world, like Great Britain, Germany and Japan. International organizations dedicated to color like Commission Internationale, de l'Eclairage (CIE) and Graphic Arts Technical Foundation (GATF) were also very active and connected to ISCC.

The British Color Group had been publishing news of its color activities for quite a few years in *ISCC News*. This issue featured four abstracts from color papers given at their meetings:

- “Colour Discrimination and Adaptation” by Dr. M. R. Pointer from Kodak, Ltd.
- “Observations on Colour in Visual Information” by B. Gilmartin from City University London
- “1973 Colorimetric, Spectral and Goniophotometric Properties and Uses of Ceramic Colour Standards” by Dr. F. J. J. Clarke from Imperial College London
- “International Comparison of Instruments using the Ceramic Colour Standards-Preliminary Report from WP8 Colour Standards” by F. Malkin

Also, the very useful British Colour Group Bibliography, including many journals and color meeting proceedings, was reproduced in this issue of *ISCC News*. ISCC members had connections with the Council of German Industrial Designers (VDID). They shared information on identifying the most suitable color shades for specific color applications. Other shared interests were the manufacture of color pigments and preparations for such color applications as the coloring of plastics.

The ISCC News Editor, Robert W. Burnham, was visiting Tokyo and arranged to spend a day at the Japan Color Planning Center. His successful goal was to establish a communication link between this Center and ISCC.

He did this to create a desirable “East-West” balance between ISCC and color-interested countries in Europe and Asia. This newsletter, No. 225, featured abstracts from articles published by members of the Japan Color Planning Center. Here are some of the abstract titles that may be of interest:

- “The Recent Tendency of the Color Preferences of People” by Chijiwa, Hideaki
- Panel Discussion: “Kusaki-zome (Botanical Dyeing) and the Color of Today” by Minato, Yamanobe, Takeuchi
- “Color as Education” by Unagami, Masaomi
- Panel Discussion: “City Appearances and Color” by Ueda, Tanaka, Miwa, Nakamura
- “An Approach to Visual Methodology -- A Start From Phenomena” by Mukai, Shutaro and Kawazoe, Yasuhiro
- “Approach to Visual Methodology -- Seeing Colors with One’s Eyes Closed-Afterimage of the Sun” – No author names given
- “CPC Test on Color Sense” by Minato, Sachie

The abstracts for these Japanese papers as well as those from the British can be found at <http://www.iscc-archive.org/Newsletters/ISCCNews225.pdf>

This newsletter announced publication of the Proceedings from the 17th Session of the CIE held in Barcelona, Spain in 1971. ISCC members could purchase both volumes of these Proceedings from the United States National Committee of the CIE for \$50 postage paid. What a difference 50 years makes! Today we would not be purchasing hardcopy proceeding publications!

Finally, the last international group to publish an article in *ISCC News No. 225* was the Graphic Arts Technical Foundation (GATF). This Foundation’s membership was comprised of 1100 company members from about 40 countries around the world, including the U.S., Canada, Western Europe, Eastern Asia, Australia, Africa, Central and South America. This article reported on:

- Carl E. Foss's Color Order System being available to all GATF members,
- the 1970-1972 Color Survey results concerning color reproduction methods, GATF future research and educational activities in the area of color reproduction
- a new test image called the Ladder Target
- their revised and updated textbook on black and white stripping available to GATF members for \$4.75 (\$9.50 for non members).

Second ISCC Color Photo Insert

Once again, ISCC took advantage of the opportunity to include a color photo insert with the mailing of *ISCC News No. 225* to all 600 members. This time the National Wildlife Federation granted permission to use the following photo reprinted from the *International Wildlife Magazine*, Jan/Feb 1973, Copyright National Wildlife Federation – 1972. The photographer was Ray Atkeson.



As before, Progressive Color Corporation in Rockville, Maryland reproduced the photo for ISCC.

Color Implications of a Man-Made Environment

In 1973, the three main threats to our planet were overpopulation, congestion and pollution. There was serious fear that the future would involve building well-lit and ventilated colossal domes over large populations of people to protect them. In order to plan for such a bleak future, the American Institute of Architects (AIA) realized that color and lighting choices in a domed living environment would be extremely important. Faber Birren wrote some helpful articles in the AIA Journal to guide the architects and engineers who would potentially build these man-made environments.

Here we are 50 years later in 2023 finding that man-made domed environments did not become a reality, thank goodness! Now the most significant threats to our planet are global warming and climate change. As color-interested practitioners, have we thought about how our knowledge of color could help the efforts to stop the 2023 environmental threats to our planet?

Car Safety – Which Colors are Best?

In 1973, the National Safety Council published an article about a study that was carried out by an unnamed Swedish color expert, who studied data on more than 30,000 collisions. Results showed that black was the most dangerous color, meaning that most collisions occurred for cars that were black in color. Brown and grey cars came in a close second and third to black. The theory at the time, which still holds true today, is that dark cars like black, brown and gray are more susceptible to crashes because they are more difficult to see among trees and buildings and at dusk, when many accidents occur. Believe it or not, pink cars were the safest, meaning they experienced the fewest collisions. This is not surprising when one considers that a lighter car, like pink, is much easier to see among dark trees and buildings. The more surprising finding for me was the color pink and not white being found as the safest. An internet search revealed that in 1973, there were quite a few pink cars on the road as you can see from the following photos:



1973 Jaguar XJ6



1973 Ford Bronco



1973 Karmanna Ghia Convertible



1973 Volvo



1973 Holden Torana GTR



1973 Cadillac Deville

Pablo Picasso: A Gifted Artist or a P.T. Barnum Artist?

Pablo Picasso died in 1973 at the ripe old age of 91. The world mourned his death, but there were some who did not appreciate the artistic prowess of Picasso. Jeffrey St. John from CBS Radio Network was not fond of Picasso's work as he wrote:

The vast outpouring of praise for Picasso at his death tells us how completely the old Spaniard had conned the so-called cultured, educated and artistic of his time. Picasso was the P.T. Barnum of the art world. The tragedy of Picasso was that he had great gifts as a young artist. His earlier works when he was in his 20s make this much clearer. However, wealth and fame, not artistic excellence and craftsmanship, was his motivating force. One must admire him for the audacious hoax and fraud he fostered for almost four decades. One must loath him, on the other hand, for what Picasso helped do to art. He and others destroyed painting and nobility, substituting instead deformity and depersonalization. When one wonders why the world around us seems so decadent and destructive, one principal source of this moral and aesthetic decay is the mental illness called modern art. Those bowing down to Picasso and praising him as great at his death are bowing down to intellectual barbarism and are paying homage to institutionalized insanity.

St. John's words prompted me to find some of Picasso's paintings when he was in his 20s. Here are some of the paintings I found:



Picasso's Paintings When He was in His 20s

Do you agree with St. John that the above paintings show Picasso as a gifted artist?

It is fun to contrast these early paintings with those that Picasso completed in his late 70s and early 80s.



Picasso's Paintings in His Late 70s and Early 80s

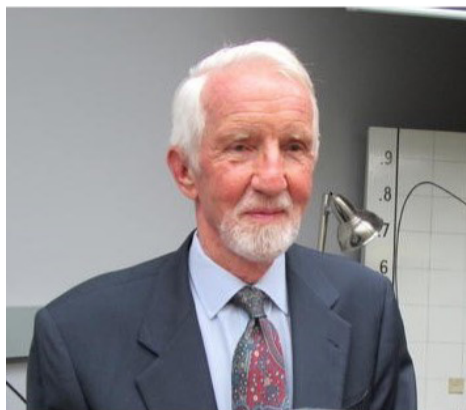
The latter paintings skyrocketed Picasso to fame. Are they P.T. Barnum art or gifted art? The decision is yours!

ISCC Member to Receive the 2023 AIC Judd Award

Paula J. Alessi

The AIC Vice President Maurizio Rossi recently announced that the 2023 AIC Judd Award recipient is our own ISCC member Rolf Georg Kuehni. This coveted award was established 50 years ago in 1973 by Betty Judd, the wife of Deane Brewster Judd, to honor his memory.

The award was established to recognize outstanding lifelong work in the field of color science. The selection process is a very comprehensive one. The selection committee is chaired by the AIC Vice President and its members are past recipients and AIC Past Presidents. This award is given every two years at an AIC Congress.



Rolf's extensive research on color tolerances, metamerism, and hue perception modeling has had a profound impact on the international color community. As the former editor of *Color, Research & Application*, he played a crucial role in advancing the field. Kuehni's translations of influential German articles, his mentorship of aspiring color scientists, and his authored

books have further solidified his status as a prominent figure in the field. With over 100 peer-reviewed articles, his expertise has significantly contributed to the understanding of color.

Recognition for his exceptional work includes prestigious awards such as the Olney Medal, the Munsell Centennial Award for Science, and the ISCC Godlove Award. The Judd Award rightfully acknowledges Kuehni's lifelong dedication and influential contributions to color science.

Rolf Kuehni joins the following Judd Award recipients:

- Dorothy Nickerson 1975 (nominated by ISCC)
- Gunther Wyszecski 1979 (nominated by Germany, ISCC, and Canada)
- David Lewis MacAdam 1983 (nominated by ISCC)
- Leo Maurice Hurvich and Dorothea Jameson 1985 (nominated by ISCC)
- Tarow Indow 1989 (nominated by ISCC and Japan)
- Fred Wallace Billmeyer, Jr. 1999 (nominated by ISCC)
- Roy S. Berns 2013 (nominated by ISCC)
- John McCann 2021(nominated by France)

ISCC is proud to learn of the news that Rolf Kuehni will be the 2023 recipient of the prestigious AIC Judd Award.

Respectfully submitted,

Paula J. Alessi, ISCC Liaison to AIC

Nickerson Service Award - Call for Nominations for 2024 Award

Ann Laidlaw, Nickerson Service Award Committee, Chair

The Nickerson Service Award was established by the Board of Directors at a meeting held on February 3, 1980. This award is presented as the occasion arises but no more frequently than once a year. The Nickerson Service Award is presented for outstanding, long-term contributions toward the advancement of the Council, and its aims and purposes. The contribution may be in the form of organizational, clerical, technical or other services that benefit the Council and its members. The candidates must be members of the Council and must have been active in the affairs of the Council.

We have consolidated the award nomination forms into a single document. Send to the ISCC office (details are on the form). Or you can scan the form and email it to us.

<https://iscc.org/resources/Documents/PDFs/UniversalNominationForm.pdf>

Information and previous recipients are listed here:

<https://iscc.org/NickersonAward/>

Please submit nominations by Dec 1, 2023. Please also reach out to Ann Laidlaw (ACL99colors@yahoo.com) if you are interested in serving on the Nickerson Service Award committee. This is an important task, very enjoyable, and takes little time.

Call for Board Nominations

Dave Wyble. Chair, Nominations Committee

The Nominations Committee is seeking nominations for the position of Director. We have three outgoing Directors, and will hold an election later this year to fill these seats. But we need your help. The best set of Directors are those that represent the membership, so we ask for your help in putting names forward. PLEASE do not think that you have nothing to offer towards this effort! Scan your contacts, scan your list of connections on LinkedIn or other social media. Just look at each name and ask yourself this question: "Would I want this person representing me on the Board of Directors?" We ask for you to make this simple effort to help keep the ISCC the great organization that it is.

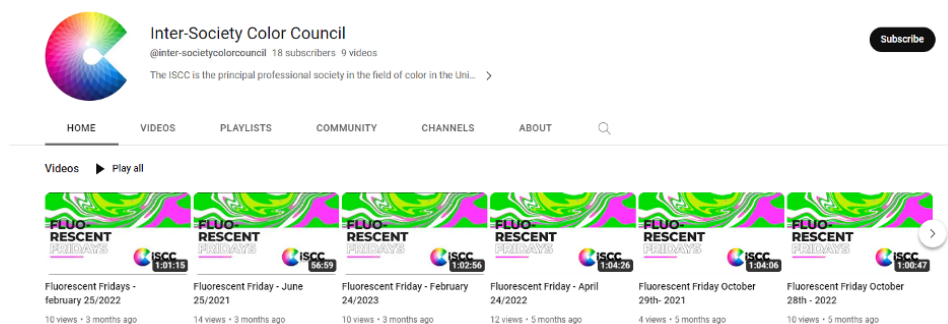
We offer our sincere thanks to Shoshana Burgett, Kate Edwards and Ellen Divers for their service on the Board over the last three years. We will miss you all, but are confident that your contributions to the Council will continue, albeit in different ways.

VIP Update

Ellen Divers

With the successful Color Impact 2023 conference behind us, the Visual Identity Project (VIP) team (Luanne Stovall, Lina Cárdenas and Ellen Divers) regrouped this week to see where we are and resume our work on the website and the many branding projects associated with it. The deeper we delve into the project the clearer it becomes that branding is an ongoing process, not a task to be checked off list!

Redesigning and branding the website involves more than just changing the look of the current web pages. A website ideally is a dynamic content holder and every time we upload fresh content it increases our SEO (search engine optimization) which makes it easier for people to find us online. Ultimately, that optimization is important if we want to drive visitors to our site. So, we want to include space on the home page where we can post new content – and we already have content to post: Fluorescent Friday (FF) videos. However, if you go to the ISCC YouTube channel (did you know we have one?), you will notice that all the videos currently look the same, as you can see below. Therefore, before we upload them to the website, we need to design an FF branded thumbnail so that each recording has a unique look and topic description. This means we will be working on the website and the recordings simultaneously. Once we are through this process with FF, it will serve as a template for future video content.



In the meantime, a question has arisen about the branding guidelines document, because its purpose is to help us keep a cohesive “look” in all our many color endeavors and initiatives. While we look forward to soon having this document as a reference for color and font decisions, we remind members that the logo is for official ISCC uses (and we are initiating discussions to define what is meant by “official uses”). We ask that if you need to use the logo, contact us directly at vip@iscc.org and we can work with you on a case-by-case basis.



Color Research and Application Highlights

Michael J. Murdoch

In this column, I highlight articles by ISCC authors in Color Research & Application. The recent issues, Volume 48, Issue 3 and Volume 48, Issue 4, include one Color Forum and two Research Articles by ISCC members.

On the Questionable Utility of Color Space for Understanding Perception

Mark D. Fairchild

<https://doi.org/10.1002/col.22853>

Should we give up on the search for a perfect color space? In this Color Forum article, Professor Mark Fairchild takes the provocative position that – gasp! – color spaces are not helpful in describing and understanding perception. Given the ubiquity of spaces like CIELAB, RGB, LMS, etc., it may seem surprising to question their value, yet Fairchild begins by showing the stark lack of consensus about how to even define “space” before addressing the futility of constructing color appearance spaces. We tend to think of color as having three dimensions (for example hue, value, and chroma), but the point is that these may be considered separately, and little value is gained by assembling them in a 3D space.

Fairchild does acknowledge the value in visualization of plotting relationships in 2D or 3D, and leaves room for the utility of computing small color differences by weighting differences in multiple perceptual attributes.

He uses CAM16 and CAM16-UCS as an existence proof to emphasize that no space can describe appearance attributes (CAM16) while maintaining relatively uniform color difference magnitude throughout (CAM16-UCS).

This article was the inspiration for a workshop, “There’s No Such Thing as Color Space...Prove Me Wrong,” hosted by Dr. Fairchild at the recent ISCC Color Impact Conference at RIT. The discussion there was lively—comparing color difference calculations, acknowledging nuances—but in the end he was not proven wrong. I’m sure, though, that CR&A would be interested in a follow-up Forum article presenting a different perspective.

A Comprehensive Test of Colour-Difference Formulae and Uniform Colour Spaces Using Available Visual Datasets

Ming Ronnier Luo, Qiang Xu, Michael Pointer, Manuel Melgosa, Guihua Cui, Changjun Li, Kaida Xiao, Min Huang
<https://doi.org/10.1002/col.22844>

One of the main uses for a 3D “space” representation of color is in the computation of differences between points in that space, thus quantifying color differences. However, because color spaces are generally not perceptually uniform, one can choose to craft a non-Euclidean distance measure, as in CIEDE2000, or to distort an appearance space to make Euclidean distances more similar to perceptual differences.

The authors of this paper lay out a grand comparison of 17 color-difference formulae using 28 existing color difference datasets and summarize the results. STRESS, the standardized residual sum of squares, is the usual method for comparing how well a set of visual color difference data matches a set of computed color difference values, and a lower STRESS value is better.

Many color difference formulae may be adjusted for different applications using parameters of kL , which is a relative scaling on lightness differences compared to chroma and hue differences, and γ , which is an overall nonlinearity that can weight smaller or larger color differences more strongly. Combinations with and without both of these parameters were tested.

Their computational results show that differences computed with CAM16-UCS are consistently better than those computed with other formulae, although the results of CIEDE2000 and for ULAB are nearly as good, especially for smaller color differences. Tweaking the kL and γ parameters can improve the performance of any color difference formula, and it appears that doing so doesn't create major advantages for any formula over the others.

These results may be useful to anyone interested in using the best computational estimate of visual color differences.

Spectral Reflectance Estimation from Non-Raw Color Images with Nonlinearity Correction

Peng Xu, Jila Hosseinkhani, Sreeraman Rajan, Hangjun Wang, Jie Yang

<https://doi.org/10.1002/col.22862>

The ability to accurately extract properties of scene objects from camera images is a tantalizing one that much camera characterization and image understanding research has addressed, generally getting better results with RAW images from well-controlled cameras. This paper looks closely at spectral estimation using the kind of ubiquitous, nonlinearly encoded RGB images that are common from mobile and consumer cameras, and shows some very interesting differences between some methods.

In the early days of image processing, images were typically viewed on cathode ray tubes (CRTs), which are quite nonlinear in translating voltage levels into intensity. It was common to apply a nonlinear function to the data before sending it to a CRT display to compensate for the CRT's nonlinear response. Applying this nonlinearity also improved the intensity resolution of digital 8-bit encoding. As a result, the sRGB image encoding standard includes a nonlinear function, despite the fact that CRTs are virtually nonexistent today.

Authors Xu, Hosseinkhani, Rajan, Wang and Yang first look at simulated camera responses with typical sRGB nonlinearities, which could be considered a “best case” scenario and illustrate the vast improvement in spectral and colorimetric accuracy gained when the nonlinearity is properly corrected. The authors state “The sRGB values were calculated according to IEC 61966-2-1 which are theoretically the ideal RGB values for most of the commercially available color cameras.” Unfortunately, the reality is that cameras perform all sorts of proprietary and setting-dependent color manipulations that deviate from this theoretical ideal. So, the authors also tested a real camera, and again showed the value of correcting the nonlinearity, especially when the nonlinearity was modeled with a 5-parameter polynomial function.

Additionally, they observed that a pseudoinverse characterization model (a 3x3 matrix optimized with test colors) performed better than polynomial (3x11 matrix) and kernel (combination of Gaussian functions) models, because the latter two seemed to overfit the data. Perhaps the imperfections in the fit are exaggerated by the more-flexible polynomial and kernel models, so the regularization caused by the 3x3 pseudoinverse model is a benefit for robustness.

Interestingly, this paper doesn't try to suggest a newer, better method of spectral reconstruction from pristine images. Rather, it shows the importance of basic linearity correction when dealing with imperfect images that are common everywhere: it makes a valuable improvement in accuracy, even if it cannot guarantee excellent colorimetric or spectral estimation.

The nuances of model aside, these authors clearly illustrate the importance of linear input images, either by starting with linear RAW images or by linearizing encoded images. This may come as no surprise to some readers, but it is an important lesson for everyone else!

ISCC Webinars Series

Ann Laidlaw and Dave Wyble

As most readers know, the ISCC has offered webinars on many topics. Live webinars are free, and anyone can attend. ISCC members can access recorded webinars at their convenience. Here is a link to the library of recorded webinars: <https://iscc.org/Members-only-content>. To access the list, you need to log in and register for the recording. Most presentations are about one hour in length, including Q&A.

We have taken a little breather after the outstanding 2023 Color Impact conference and are now ready to schedule webinar presentations for the rest of 2023 and for 2024. To suggest presenters, email Ann Laidlaw at ACL99colors@yahoo.com.

Please reach out if you would like to help with this important task. It does not require much time, and we always appreciate fresh input.

Thank you for your help!

Fluorescent Fridays

Luanne Stovall

Upcoming Fall Event

The Fluorescent Fridays team is currently working on the Fall schedule of events. Stay tuned for the next event planned for October 27, 2023.

Recent Event

Friday, April 21
Color & Light: Spotlight on RIT
Munsell Color Science Lab

Speakers:

Christopher Thorstenson, Assistant Professor, Color Science and Munsell Color Science Laboratory (MCSL), Rochester Institute of Technology (RIT)
Che Shen, Ph.D. candidate, MCSL at RIT
Leah Humenuck Ph.D. candidate, MCSL at RIT
Lighting students at the MCSL at RIT.

On Friday, April 21, faculty and students from MCSL at RIT presented their ongoing research focused on the human perception of color, lighting, and its applications. The topics included recent work modeling color and light adaptation, harnessing low-cost lighting and imaging systems for the purpose of preserving cultural heritage, and investigating whether the Helmholtz-Kohlrausch effect extends to LED lighting.

Fluorescent Friday (FF) host John Seymour welcomed Zoom participants from the United States and around the world, before introducing RIT faculty Chris Thorstenson, an ISCC Board Director with a particular interest in the social information conveyed through changes in facial coloration. His research explores how the human face and the visual system interact, forming a powerful tool to transmit the myriad information that regulates social interactions. Thorstenson provided an overview of the RIT campus (no, it is not in New York City!) with its vision “to shape the future and improve the world through creativity and innovation...leveraging the power of technology, the arts, and design for the greater good.” Chris proceeded to introduce the students working in the Program of Color Science at the Munsell Color Science Laboratory (MCSL).

**FLUOR-
ESCENT
FRIDAYS**

The first speaker was Leah Humenuck, a Ph.D. candidate in Color Science at the MCSL at RIT. She holds a B.S. in Chemistry from Sweet Briar College and an M.A. with honors in Conservation from West Dean College of Arts and Conservation. Leah is also a book and paper conservator who informs her color science research of archival items. In her talk, Leah shared her research in imaging, color reproduction, and lighting with focus on cultural heritage use.

The next speaker was Che Shen, a Ph.D. candidate in the MCSL who earned his Bachelor of Science degree in Gem and Material Engineering from Hebei GEO University, China in 2016 and his Master of Science degree in Gemology from China University of Geosciences in 2019. In addition to his academic pursuits, he serves as a Technical Committee Member at CIE Division 8 (8-18), demonstrating his commitment to the advancement of HDR research. Che focused his talk on his current research involving chromatic adaptation, observer metamerism, individual color matching functions, and unique hue perception.

Two students co-presented the final project. Sofie Herbeck, a Ph.D. student in the MCSL holds a B.A. in Computer Science and Theatre from the University of California, Berkeley. Sofie's previous research experience was in probing color vision at the level of individual cone photoreceptors (aided by adaptive optics); their current research interests are still developing but revolve around chromatic adaptation and lighting. Saeedeh Abasi is also a current Ph.D. student at the MCSL who received her B.S., M.S. and Ph.D. degrees in Textile Engineering from Amirkabir University of Technology, Iran. Her research interests are color science and image processing. She is currently working on hue scales and brightness quantification.

Sofie and Saeedeh presented a class research project studying the Helmholtz-Kohlrausch (H-K) effect, which suggests that some hues appear brighter than their luminance alone would predict.

The H-K effect has been studied for reflective colors and emissive displays, and their project is testing whether it behaves in a similar way for LED illumination.

Bonus

The FF team chose to highlight RIT's Program of Color Science in advance of Color Impact 2023, the June conference that took place in Rochester on the RIT campus. It was an inspiring and eye-opening experience to tour the facilities, meet the faculty and students, and learn more about their state-of-the-art research!

The **Inter-Society Color Council** created **FLUORESCENT FRIDAYS** as an online platform for international university students from diverse color-related disciplines to share their research and network with color professionals. The goal is to build a global student chapter that positions color as a multidisciplinary STEAM model (Science, Technology, Engineering, Arts, Math) and provides state-of-the-art color research by scientists, artists, designers, industry professionals, and university students. Hosts for Fluorescent Fridays are "John the Math Guy" Seymour, an applied mathematician and color scientist and Adjunct Professor at Clemson University, and Dr. Lina Cárdenas, an assistant professor at the school of design at the Pontificia Universidad Católica de Chile and former member of the ISCC Board of Directors.

We are in the process of planning Fluorescent Friday events for the Fall and Spring 2024 season, reaching out to international colleagues in universities who conduct rigorous, forward-thinking research with their students in the arts, design, and sciences. Stay tuned for updates!

Colour Literacy Forum

Luanne Stovall

The [Colour Literacy Forum](#) is a virtual platform featuring presentations and interactive conversations focused on updating and expanding 21st century color education at the university level. The Forum is an international, collaborative effort of the joint ISCC/AIC Colour Literacy Project and Cumulus (<https://cumulusassociation.org/>), the leading global association of art and design research.

The goal of this global collaboration is to align higher level color education with current design needs in the culture and develop an interdisciplinary STEAM (Science, Technology, Engineering, Arts, Math) model that aligns color education with current needs in the culture, provides cutting-edge resources, and offers dynamic networking opportunities for all stakeholders. For more information, see <https://colourliteracy.org/colour-literacy-forum>.

Upcoming Forum (Save the Date)

Colour & the Perceiver II: Colour Vision

Friday, September 29, 11 am - 12:30 pm EST (via Zoom)

Join us for Colour Literacy Forum #6, Color & the Perceiver, Part 2, which will take place on Zoom. This forum is the fourth in a 4-part series about color perception. (The first focused on color and light, the second on color and materials, and the third introduced color perception in relation to the perceiver).

Be part of the forum to take a deeper dive into the phenomenon of color vision -- from the evolution of color vision in animals to psychophysics and variabilities in the way we perceive color.

Stay tuned to learn about the panel of speakers!

Summary of Past Events

Forum #5 is available on YouTube at <https://youtu.be/Ce3R9WlclKU>.

Talk 1: Colour Communication from Design to Production

Dr. Ming Ronnier Luo, Professor at the College of Optical Science and Engineering, Zhejiang University (China) has published over 750 peer reviewed papers in the fields of color science, imaging science and illumination engineering. In his talk, Dr Luo focused on the complex challenges involved in color specification within the global supply chain, and revealed recent developments in accurate and fast color communication technology designed to achieve supply chain management.

He explained that a system has been developed to achieve this by accurately simulating the total appearance of the final product by projecting colored light on white substrates. The appearance of the virtual samples can then be precisely reproduced between systems. As a result, designers can invent colors based on a color selection tool and can visualize the same color on multiple textured substrates. Color specifiers can make crucial selection decisions to finalize a digital color specification, and dyers can accurately reproduce physical swatches to match the specification.

For more information see: <http://cel.zju.edu.cn/2019/0309/c27449a1076553/page.htm>.

Talk 2: The role of context and memory in colour experience

Dr. Maria Olkkonen holds a Ph.D. in natural sciences from Justus Liebig University Giessen, Germany and is currently a Principal Color Scientist at Microsoft as well as an adjunct professor at the University of Helsinki. She is especially interested in how short- and long-term memory affects and interacts with the perception of color and uses behavioral methods to investigate perceptual responses to images and to quantitatively characterize the computational mechanisms of perception.

Dr. Olkkonen began her talk by reviewing the basic physiology of color vision. She explained that our color experience cannot be fully understood by information processing at these early stages. The spatial and temporal context in which a stimulus is viewed, as well as previous experience with colored stimuli affect how a given color appears to a given observer. In other words, the physical properties of a colored stimulus do not determine its color appearance. She moved on to discuss the ways perceptual context, short- and long-term memory, and prior knowledge interact with sensory information to create our color experience. She also touched on how these factors may give rise to individual differences in color perception.

For more information, see [Maria Olkkonen | University of Helsinki](#).

Her twitter account is @MariaOikkonen.

Talk 3: Teaching Universal and Accessible Design for Colour Vision Diverse Individuals

Bill Fischer is a professor and founder of the Digital Art & Design program at Kendall College of Art and Design, Grand Rapids, Michigan and executive producer for The EPIC Project (a media production and research initiative), as well as author of the I-See-U blueprint for creating Inclusive, Socio-Emotional, Entertaining, and Universal media.

In his talk, Mr. Fischer focused on current research dedicated to creating accessible and universal design practices that can provide qualitatively equal experiences for persons with a wide range of sight abilities. He explained that though 4.5 % of the population (8% of men and .5% of women) experience different types of limited color vision, the vast majority can actually see color. They just can't see the fuller range of colors that color-typical persons perceive; their range is narrower and exists on a spectrum.

He laid out a sequential lesson aimed at college level learners, designed to provide equitable outcomes for individuals with limited color vision. The lesson is centered around the understanding and application of accessible and universal design practices, and includes tips for using color-blindness simulators, critical tools for understanding what color blindness looks like -- and building empathy for equitable design practices.

For more information, see www.i-see-u.info

Color Impact 2023: A Post-Pandemic Success Story

Dave Wyble

Over 100 color enthusiasts came together at Rochester Institute of Technology (RIT) in Rochester, New York to discuss and celebrate “Color and the Human Experience” at Color Impact 2023, June 12-15, 2023. This was the first in-person ISCC meeting since meeting in Minneapolis in March 2019 BC (Before COVID). Given that travel and other restrictions were still in place around the globe, planning an in-person meeting was a calculated risk on the part of the ISCC. Regardless of the risk, the strategy paid off and the conference was a resounding success.

Each of the four days began with a stimulating keynote presentation. The featured speakers were Domicela Jonauskaitė, Kory Stamper, Peter Donahue, and Roy Berns. Many thanks to these four for their excellent presentations. They successfully set the stage for each morning of themed sessions.

After a lunch break, the afternoon sessions featured a variety of short courses, tours, and other activities. These kept everyone quite busy traversing the RIT campus in search of the various buildings and rooms. As I walked around campus handling all the housekeeping details, my most common question to conference participants was “Do you know where you are going?” Even for those who answered “yes,” a bit of guidance was often needed.

The evenings were filled with fun. On Monday we had a reception at the world-renowned George Eastman Museum, where we enjoyed lots of good food, a live jazz ensemble, tours of the historic mansion, and of course, each other’s company. Tuesday about 45 folks attended a local minor league baseball game, where the Rochester Red Wings won 16-10. Loads of fun and plenty of good food and drink were consumed. Wednesday evening was the official conference reception at the RIT University Gallery. The evening started with a poster session, followed by a heartfelt tribute to Dr. Danny C. Rich by Paula Alessi and Roy Berns. The final presentation was the inaugural Danny C. Rich Memorial Lecture, titled “Illuminating Color Measurement,” given by yours truly.

Due to the months of effort by many folks on the conference committee, there are very few places where the meeting could have been significantly improved. We all owe the committee members a great debt of thanks and I offer my sincere gratitude to each of them. Everyone on the committee usually had just one answer to my requests: “yes!” I can’t say this made my role as the conference chair easy, but it went a long way towards making it possible. While it is tempting to try to thank everyone involved, and invariably miss someone, I am calling out just one name: Kate Edwards. Kate was the Program Chair, and when I asked her to serve in this capacity her response was something like “I have no idea what that means, but yes.” So even as this was a learning experience for all of us, it was a particular learning experience for Kate. In the end, she fulfilled the role as well as anyone I have ever worked with. Thanks, Kate, for your tireless efforts!

There will be future ISCC meetings, and while I cannot recommend the role of conference chair to everyone, I can encourage everyone to sit on a conference committee at least once to get a flavor for how these things really work. You will make new friends along the way, and I promise you will consider your time well spent. It was my great pleasure and honor to serve the organization in this way, and I look forward to future meetings with the vibrant color community that we call the ISCC.

Color Impact 2023: Color and Human Experience Steering

Committee:

Karen Braun, RIT, Local events
Robert Buckley, Xerox (retired), Short courses
John Conant, Aerodyne (retired), Finances
Kate Edwards, Datacolor, Program
Jean Hoskin, Macy's (retired), Program
Romesh Kumar, Clariant (retired), Sponsorship
Alicia Keshishian, ADK Carpets
Ann Laidlaw, X-Rite (retired), Sponsorship
Maggie Maggio, Smashing Color, Vice Chair
Michael Murdoch, RIT, Munsell 40th Anniversary
Robin Myers, RMIImaging, Short Courses
Rachel Schwen, 3M, Registration
Karen Triedman, Rhode Island School of Design, Program
Amy Woolf, Amy Woolf Color & Design, Website
Dave Wyble, Avian Rochester, General Chair

Color Impact 2023: Color and Human Experience Sponsors

We owe a big thank you to our conference sponsors: Konica Minolta Sensing Americas and Datacolor, as well as a personal donation by Justin Laird. Your generosity helped support the conference as a whole, as well as ISCC educational programs moving forward.

Thank you!

Presentations from Color Impact 2023

Monday Morning

Theme: Color Response

Keynote: Domicela Jonauskaitė,
“Colors and Emotions across
Cultures and Individuals”
Udo Schliemann “Color as a Tool
to Identify and Attract People to
Community and Art Centers”

Theme: Color Experience

Bill Fischer, “Color, Its Impact on
the Visually Impaired, and How to
Address it with Universal Design”
Nello Marelli, “Color Forecast in
Virtual Reality”

Panel on Color Psychology

Moderator: John Seymour
Panelists: Christopher Thorstenson,
Ellen Divers, Domicela Jonauskaitė

Tuesday Morning

Theme: History and Art & Design

Keynote: Kory Stamper, “Black,
White and Read All Over: The ISCC,
Webster’s Third New International
Dictionary and the Quest to Define
the Rainbow”
Mary Mann, Sarah Lowengard, Ezra
Sardes, Mackenzie Williams, “Your
Instructor Will Wear Gray: A History
of Color Pedagogy at The Cooper
Union”

Theme: Color in the Environment

Maria Fernanda Brandi, João Carlos
de Oliveira Cesar, Josivan Pereira da
Silva, “Color and Memory: A Case
Study of Brazilian Brutalism”
Jiawei Lin, Dingding Ren, Zhenhang
Cai, Muzi Li, “Applying Colored
Paper Material into Landscape
Architecture”
Yuhao Zhu, “Color-Perception-
Guided Display Power Reduction for
Virtual Reality”
Sajeesh Kulappurath, “Monitor-
Based Color Assessment:
Opportunities and Challenges”

Lightning Talks:

Anna Kmita, “Project of Colour
Parametrisation of the Historic Folk
Embroidery”
Jiangning Che, Xu Yang, Jingxin
Guo, Ivana Avancena, “Sustainable
Natural Textile Coloration Using
Agriculture Waste”
Christopher A. Thorstenson, “Using
Color to Convey Emotions in Social
Robots”

Wednesday Morning

Theme: Education

Keynote: Peter Donahue, "TikTok as Color Theory's One-Room Schoolhouse"

Petronio Bendito, "From Paint to Pixels in Color Design Education"

Laura Crehuet Berman, "Reflections on Color and Printmaking"

Theme: Printing/Reproduction

Carinna Parraman, Susanne Klein, Harrie Fuller, Abigail Trujillo Vazquez, "RGB Colour Printing and Halftoning for the Reproduction of Structural Colour Images"

Susanne Klein, "Printing the Shadows: Variations in Colour Recording and Reproduction"

Ming Ronnier Luo, "Individual Colour Reproduction"

Poster Previews:

Keith Hoover, "LEDSimulator - The Color Box"

Kerry Jones, "Munsell Color Theory in Personal Color Harmony"

Theresa-Marie Rhyne, "Translating Color Harmony into Data Color Schemes"

Tianqi Lu, "A Study of Color Concept in Home Decoration Design During the Republic of China"

Isabell Moyer and Leah Humenuck, "Identifying Multispectral Imaging Wavelengths to Create 'Recipes' for Analysis of Non-Visible Information on Parchment and Paper"

Yuan Tian, "The Influence of Gloss on Color Perception in Artificial Human Faces"

Julia Verstedden, "Evaluating Facial

Skin Appearance in Social Robots"

Leah Humenuck, "Comparison of Mobile Phone Cameras and Prosumer Cameras to Produce High Dynamic Range Images for Cultural Heritage Documentation within a Multispectral Imaging System"

Panel on Art Exhibition

Moderator: Amy Woolf

Panelists: Mark Fairchild, Jean Hoskin

Details on the Art Exhibition are in a separate article in this issue.

Thursday Morning

Theme: Technology

Keynote: Roy S. Berns, "Why Does My Artwork Reproduce So Poorly?"
Michael Murdoch, "Color Appearance in Optical See-Through Augmented Reality"

Saeedeh Abasi, Mark D. Fairchild, "Modeling Hue Perception"
Tom Lianza, "The Color Teachings of Leonardo Da Vinci as They Apply to Modern Virtual Motion Picture Production Techniques"

Theme: Spotlight RIT

Luke Hellwig, Dale Stolitzka, Mark D. Fairchild, "The Brightness of Chromatic Colors"

Gabrielle Brogle, "Incorporating High Dynamic Range into Multispectral Imaging for Cultural Heritage Documentation"

Isabell Moyer, James Falotico, Kyra Schultz, Etta Arnold, David Messinger, Juilee Decker, "Visualization of Multispectral Imagery for Cultural Heritage Exploration"
Susan Lakin, "Frameless Labs at Rochester Institute of Technology"
Michael Murdoch, "The 40th Anniversary of the Munsell Color Science Laboratory"

Workshops, Activities, and Tours

The Eye Opener Series: An Intro to the Color Literacy Project - Maggie Maggio and Robin Kingsburgh

Measuring, Modeling and Rendering Surface Appearance
- James Ferwerda

Techniques for Creating Colorful, Decipherable Images for Color-blind and Sight-impaired Persons
- Bill Fischer

Guided Tour of the RIT Glass Laboratory (two sessions) Beyond the Pale (Ale) and Behind the Blush (Wine): The Colors of Potent Potables
- Mark Fairchild and Stephen Viggiano

Fifty Shades of Feeling
- Ellen Divers and Domicela Jonauskaitė

Beyond RGB: Low-Barrier-to-Entry Multispectral Imaging for Color-Accurate Art Documentation and Reproduction
- Leah Humenuck

There's No Such Thing as Color Space...Prove Me Wrong
- Mark D. Fairchild

LED Lighting: The Intersection of Color Science and Design
- Michael J. Murdoch and Kimberly R. Mercier

The Natural Colour System: A Toolbox for Colour Designers
- Anders Nilsson

Fundamentals of Psychophysics
- James Ferwerda

Connecting with Color
- Jason Bemis

Guided Tour of the Vignelli Center for Design Studies (two sessions) Color Explorer Room
- Maggie Maggio and Robin Kingsburgh

Turning the Kaleidoscope: Two perspectives on the meaning of color
- Ellen Divers

Alphabet Soup of Color Notation
- Robin Myers and Robert Buckley

Expanded Color Gamut Printing
- Abhay Sharma

Color For Everyone
- Jean Hoskin, Ann Laidlaw and Jodi Baker

Selection of Pigments for Color Applications
- Romesh Kumar

Digital Color Management: From Basics to ACES
- Edward J. Giorgianni

Light Bathing
- Michael J. Murdoch

Guided Tour of the Labs at the Center for Imaging Science (two sessions) The Power of Red
- John Seymour

Color Literacy Project Forum: Color & the Perceiver

Munsell Color Science Laboratory Open House

Tour of the MAGIC Center (two sessions)



AIC 15th Congress

**Chiang Rai, Thailand,
November 28 - December 2, 2023**

Paula J. Alessi, ISCC Liaison to AIC



AIC Congress Updates

The Congress organizers are proud to announce that 221 short abstracts were accepted for submission. The technical committee agreed that 104 of the submissions will be given as oral presentations and the remaining 117 will be given as poster presentations.

There will be a General Assembly ceremony where voting will occur and awards will be given.

Registration opened on July 1. ISCC members are encouraged to visit www.aic2023.org to register!

Two Workshops

Two workshops will be given on November 27, 2023. The first is called Cultivating Calm and Focus: NeuroArt as a Gateway for Understanding the Mind by Petronio Bendito from College of Liberal Arts at Purdue University. The second is called Watercolour by Suphawat Hiranthanawiwat from the Faculty of Architecture at

Chulalongkorn University.

Invited and Keynote Speakers

The invited and keynote speakers are:

- Piyanan Prasarnrajkit – What color is Thai?
- Petronio Bendito – Digital Color Literacy, Media, and Design Education
- Stephen Westland – Colour, Machine Learning and Creativity
- Alain Tremeau – Invariance of Colour Constancy Models to Complex Lighting Conditions
- Alessandro Rizzi – On Why the Nature of Colour is Spatial
- Andrew Stockman – Cone Fundamentals, Colour Matching Functions, and Individual Differences
- Vien Chung – The Pink Tax
- Berit Bergström – Can We Change Colour Education to an Attractive and Inspiring Subject in Design and Architecture?
- Jose Caivano – The Concept of Cesia (Visual Appearance Other Than Colour), Antecedents, Developments, and Applications
- Ming Ronnier Luo – Advanced Colorimetry for Imaging Colour Reproduction
- Nicole Tse – Managing Museum Collections, Climate, and Colour Change
- Takahiko Horiuchi – Physical and Perceptual Worlds of Maternal Appearance

Thailand is a beautiful country! All ISCC members are encouraged to attend the AIC 15th Congress, which promises to be a colorful international event! We hope to see you there!

Online Art Exhibit

Color impact 2023

Karen Triedman

The Online Art Exhibit that was part of the recent Color Impact 2023 aimed to both reflect the ISCC mission and enhance the theme of the conference—Color and Human Experience. The goal of the exhibit was to focus on creative thoughts and expressions on color with respect to emotions, observations, theories, research, memories and culture. We wanted to include creatives interested in all aspects of the color community—the science, technology, and aesthetics of color—and share creative expressions of their feelings and experiences.

To further our interdisciplinary approach, we engaged two jurors: Mark Fairchild, a Professor in the Program of Color Science and former Director of the Ph.D. Program of Color Science and Munsell Color Science Laboratory at the Rochester Institute of Technology and Danielle Siembieda-Gribben whose experience bridges the gap between arts, marketing, curation and practice. She is the Senior Arts Manager for the City of San Jose Office of Economic Development and Cultural Affairs in California and former Chief Creative Officer of the enterprise think tank Leonardo/ISAST.

We established judging criteria focusing on color work that was impactful, interesting, appealing, or expressive. We also considered whether the work challenged the viewer's understanding of color and crossed over boundaries between art, technology, science and education. Creatives were asked to submit work in any style as well as visual expression of scientific exploration. Mediums included everything from fine arts paintings and photography to digital media including animation, video and photography, environmental design and architecture, graphic representations of color data, or a novel use of color in data visualization. Participants included students, amateurs, and professionals. The jury process was highly competitive. Only 73 works were selected from over 370 images.

Due to the lack of available physical space, the show was displayed virtually. Having a virtual show was also beneficial for the artists because it eliminated shipping costs and the commitment of physical artwork, and it allowed for a geographically larger applicant pool. The artists and their work served as a basis for a panel discussion at the conference itself. This allowed for a lively conversation and interchange about the jury process and the variety of work that was received and its relationship to the conference theme: Color and Human Experience. Best of Show and Honorable Mention Awards were announced in each division: Professional, Amateur and Student.

Here is a link to the video that was shown at Color Impact 2023:

<https://youtu.be/jBvFO8mPDhY>

Award Winners

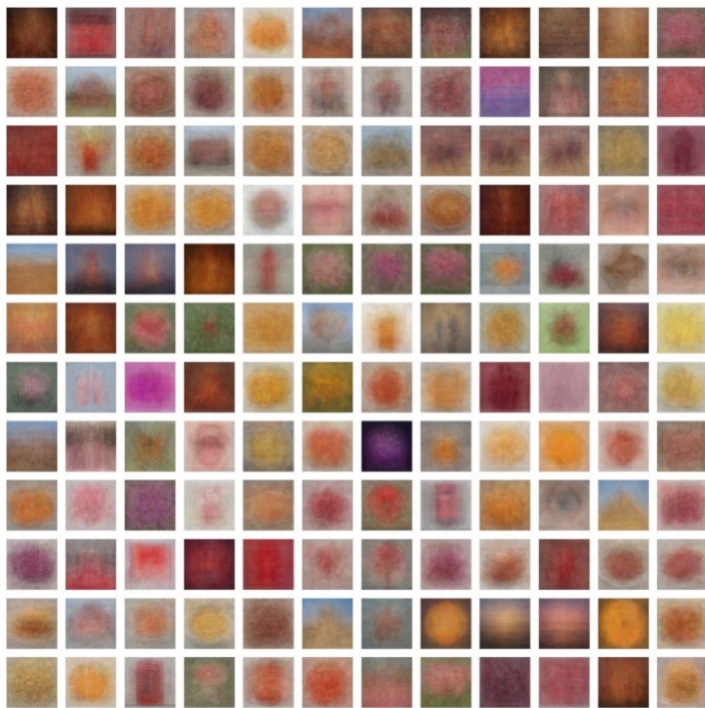
Professional Division

Best of Show – Andrew Reach, QUADRAMID V, using UV-cured inkjet on acrylic/aluminum and cut out on CNC



Reach's current work evolved as a response to health issues from the practice of architecture to working in the realm of digital media. He describes his relationship to color as a: "proxy to express energy, movement and joy." The quadrant structure contains a choreographed mix of 14 colors of varying degrees of saturation and value plus black and white. He says: "The piece comes alive as an optical tapestry and a symphony of color to produce a moment of optical joy and uplifting spirit." He concludes with "color equals life."

Honorable Mention – Ethan Nadler and team, 144 *Red Words*,
Concepts Associated with Red, Colorgram tiles



The work that Nadler and his colleagues developed at Comsyn is a result of developing new scientific and artistic methods to understand how color *thinks* as a form of aesthetic computation. The software uses research of public repositories linking images and concepts to search for the colors associated with any concept of interest. This is done by aggregating images into a single spyglass visualization they call the colorgram.

Amateur Division

Best of Show – Anamaria Rezende, *Cores ao acaso*



(Random Colors), 2021

Rezende is interested in exploring the relationship between color identities and public spaces. She has been researching color as a language and identity element applied in different environments and mediums. She describes it as “a chromatic artistic intervention using augmented reality on the facade of a cultural center in Sao Paulo, Brazil.” - The site, composed of over 500 glass bricks becomes a backdrop featuring captivating chromatic animations referencing the Aurora borealis. The visualization of the augmented reality portrays the expansion and contraction. It represents her vision of the energy of each color by materializing colors on the glass surface

to experience new visual encounters by embracing the magic and mystery.



Honorable Mention – Casey Sheppard, *Peaches nâ Cream*, 2023,
epoxy resin

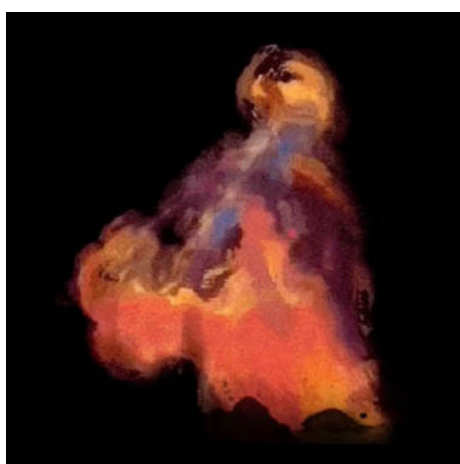
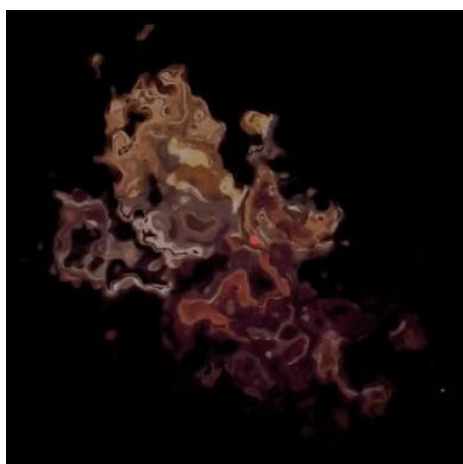
Shepard states simply; “Each piece represents my obsession with colors and their flow. Truly an extension of my kaleidoscope mind.”



Honorable Mention – Mckormick Brubaker, *Blue on Blue*, 2019,
digital photography
The photo is part of a larger series called “Blues of Solitude” that

focuses on a lonely Cape Cod bathroom on the beach in a parking lot taken during the blue hour.

Student Division



Best of Show – Mark Chicoine, *Moving Through Fire*, 2022,
film and dance

Marc Chicoine, a visual artist and dancer and an MFA student from Pratt Institute in Brooklyn, New York describes his work as “both technically informed and raw.” His work “bridges the universal with the intimately psychological.” In describing his film, “*Moving Through Fire*, 2022,” he says “What do you see flickering in the embers? Since

the times of Prometheus, we've come to use, respect, and fear fire." Marc believes that his movement practice is integral to his visual



work.

Honorable Mention – Shiqing Li, *If I were a hedgehog...*, 2023, textile (cotton, beads, wool)

Shiqing li, a Chinese artist living in New York City with an MFA in textiles from Parsons School of Design, New York, New York talks about her piece. She says: "I make textile art with a positive attitude to express what others define as 'negative' psychological issues. I have suffered from depression, so I want to communicate with those who suffer from psychological issues through textile. In creating my work, I use traditional techniques and materials while pushing the boundaries of the medium through experimentation and innovation.

Calendar 2023

Aug 3 - 5	IES 2023 Annual Conference, Chicagoland Renaissance Schaumburg Hotel and Convention center https://www.ies.org/events/annual-conference/
Aug 14 - 17	Optica Imaging Congress Boston, Massachusetts Hybrid event https://www.optica.org/en-us/events/congress/imaging_and_applied_optics_congress//registration/
Aug 28 - 31	CMG Summit Reveal World Color Forecast 2025+ Virtual https://colormarketing.org/event/2023-cmg-summit-reveal/
Aug 31	AIC Full paper submission deadline for AIC 2023 Early Bird registration closes https://aic2023.org/
September 12 - 14	AATCC textile Discovery Summit Greenville, South Carolina https://www.aatcc.org/aatcc-events/summit/
September 29	Color Literacy Forum 11 am-12:30 Eastern Zoom meeting
September 18 - 20	Society of Plastics Engineer (SPE) CAD RETEC https://specad.org/cad_retec_2023_homepage/
September 12 - 14	National Association of Printing Ink Manufacturers (NAPIM) Fall Technical Conference, Hilton Chicago/Oak Brook Hills Resort and Conference Center https://www.napim.org/aws/NAPIM/pt/sp/falltech
September 15	Abstracts due for annual meeting of Council for Optical Radiation Measurements https://cormusa.org/second-notice/
September 20 - 21	IS&T Advances in Printing Technology Tokyo, Japan and online https://www.imaging.org/IST/Conferences/AdvPrintTech/AdvancesPrintTech_2023/PrintTech2023.aspx
Oct 4 - 5	Detroit Colour Council Understanding and control of Automotive Effect Colors VisTa Tech Center Schoolcraft College 8:30 – 4:30 https://detroitcc.org/events/dcc-understanding-and-control-of-automotive-effect-colors/

Oct 12 - 13	International Color Consortium (ICC) Meeting Cupertino, CA https://www.color.org/schedule.xalter
Oct 29 - Nov 1	Illuminating Engineering Society Street and Area Lighting Conference (IES) Indianapolis, Indiana https://www.ies.org/events/street-area-lighting-conference/
Nov 6 - 8	Council for Optical Radiation Measurements Annual meeting - Virtual https://cormusa.org/news-events-3-2/
Nov 7 - 9	AATCC Fall 2023 Research Committee Meetings https://www.aatcc.org/aatcc-events/research/
Nov 10 - 11	SCAD Annual Conference Chicago Marriott Downtown https://scadent.org/events/newportbeach-2023
Nov 13 - 17	IS & T Color and Imaging Conference Paris, France https://www.imaging.org/IST/IST/Conferences/CIC/CIC2023/CIC_Home.aspx?hkey=2b-9f077c-88d0-4baa-b55f-98ed886aba94
Nov 28 - Dec 2	AIC 2023 15th congress Chiang Rai, Thailand https://aic2023.org/
Jan 21 - 25 2024	IS&T Electronic Imaging Hyatt Regency San Francisco Airport https://www.imaging.org/IST/Conferences/EI/EI2024/EI2024.aspx
Jan 24, 2024	E12 Color and Appearance Meeting West Conshohocken, PA ASTM International
Jan 29 - 31	IS & T Advanced Ink Jet Technology 2024 Fribourg, Switzerland and Online https://www.imaging.org/IST/Conferences/AdvInkjetTech/Advanced_Inkjet_Tech_2024/Advl-JTech_Home.aspx?WebsiteKey=6d978a6f-475d-46cc-bcf2-7a9e3d5f8f82&hkey=6d559591-f2c1-4027-9b19-3d0caf378688&7e2e4e0e07d9=1#7e2e4e0e07d9
June 12, 2024	E12 Color and Appearance Meeting Philadelphia, PA ASTM International

Sustaining Members

Sustaining members of the ISCC are organizations who support the mission and goals of the ISCC through financial or other support. With our member bodies, Sustaining Members also provide a critical connection to the color community. If you feel your company or organization should support the ISCC in this way, please contact the office for more information about member benefits.



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