



Inter - Society Color Council Newsletter

**Spring
2020 - Issue #490**

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*Photo taken at
Lighting Research Center |
Rensselaer Polytechnic Institute*

Board of Directors Corner

Luanne Stovall

Fellow color enthusiasts,

Amidst all the current turmoil, I hope that you and yours are staying well! It is a pleasure to serve as an ISCC Board member, and I'm eager to continue working with you.

By way of introduction, my background is in the fine arts. Because of my lifelong practice as a painter, color has always been front and center. In the early 2000s, I was invited to teach a color course at Tufts University for students working with a broad range of new and traditional media. Previous color courses had focused on paint mixing, but with so many students exploring digital technologies,

that approach was no longer relevant. So, I asked myself a question that led me down an unexpected rabbit hole: What is color? Answering this deceptively simple question allowed me to rethink the role of color—not just in the arts, but across culture and society. My approach has been to investigate multiple sources, ask lots of questions, and always seek to connect the dots. This exploration changed my life, convincing me that color is not just a window to aesthetic beauty, but a critical knowledge base for 21st century citizens. It is increasingly clear that a new color literacy paradigm is essential.

The New Color is my flagship color literacy course at the University of Texas in Austin. Designed as a STEAM learning model, this interdisciplinary course functions as a bridge between the arts and science, technology, engineering, and math. It covers the basics of color theory and unpacks the dense network of color codes that course through our lives every day. Evening color salons feature guest speakers from diverse disciplines,

including neuroscience, biology, chemistry, art history, design, theatre, and communications.

The Color Literacy Project, a partnership between the ISCC and the International Colour Association (AIC), is developing a foundational color education website. Intended for use by classrooms from Pre-K to university, industry professionals, and lifelong learners, the site will address basic misconceptions and provide state-of-the-art color literacy resources. As an artist and color theorist working at the university level, I'm honored to be part of the leadership team.

Due to the Coronavirus upheaval, the ISCC postponed the Color Impact Conference at Yale until June, 2021. Instead, for this year we're offering a one-day virtual symposium on Saturday, June 6 focused on color literacy and the future of color education. I'm particularly excited about approaching this work in a holistic way that weaves the arts directly into the conversation about why color literacy matters and how we can shape a dynamic new paradigm. The coming evolution from STEM to STEAM could not be more timely. I look forward to collaborating together in the months and years ahead.

***Yours in color,
Luanne***



Luanne Stovall

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Hue Angles:

Color/BW Tropes in Cinema.

Once again Carl Jennings has inspired a Hue Angles article from me. This time, Carl's description of Olafur Eliasson's black-and-white effect with narrowband light (ISCC News, Issue 489) reminded me of various color/black and white (BW) tropes in cinema. Whereas Tony Stanton's Munsell 2018 presentation (http://www.iscc-archive.org/Munsell2018_Presentations/Stanton-Break-out-HistoryOfColorCinema.pdf) is a more serious history that highlights the use of color/BW as part of the technological evolution, my essay here highlights some artistic uses of color/BW.

I'll begin with the Wizard of Oz (1939), wherein the black and white (actually sepia-tone dyed black and white) Kansas shots give way to the dazzling color of Oz. The transition wasn't trivial: "A set was painted sepia tone and Bobie Koshay, Judy Garland's double was outfitted in a sepia dress and given a sepia make-up job. Koshay walks to the door and opens it, revealing the bursting color of Munchkinland beyond the doorframe. She steps out of the way of the shot and the camera glides through the door, followed by Judy Garland, revealed in her bright blue dress." [1]

A similar trope occurs in Pleasantville (1998), in which real-life characters are injected into a black-and-white 1950s sitcom. Within the sitcom, the characters (and objects) appear in black and white until they transcend the repression implied by the sitcom and find emotional spontaneity and "modernity" of viewpoint. I find the message is too preachy, but if for nothing else, the film is noteworthy in being claimed to be the first new feature film created by scanning and digitizing recorded film footage to remove or manipulate colors ([https://en.wikipedia.org/wiki/Pleasantville_\(film\)](https://en.wikipedia.org/wiki/Pleasantville_(film))).

Certain resonances of Oz can be seen in Antonioni's Red Desert (1964), wherein the entire movie has a ghastly blue-green cast (the color, not the actors), until a fantasy scene at the end that opens out to abundant color and lets the audience sigh in relief. That one is not a black-and-white trope, but a reduced-color trope that recalls the Oz transition, but on a more subtle level.

A more powerful recent trope appears in Schindler's List (1993), which is filmed in black and white except for the Sabbath candles and a red coat worn by a young Jewish girl who is thereby individuated as a casualty of the

Holocaust. The emotional effect was a coup by Spielberg. And it used digital techniques for color replacement five years before the vaunted “first” of Pleasantville.

Finally, I must mention the comedic send-up of Psycho’s (1960) shower scene in Mel Brooks’s High Anxiety (1977), which is entirely in color. A bellboy has not-so-pleasant words with a patron in a hotel. The patron (Brooks) wants his newspaper brought to him, and the bellboy waits until the patron is in the shower and then rips the curtain aside and hysterically stabs at him with the rolled-up newspaper. (“There’s your paper!”) The paper falls under the water, and the black ink dissolves—and swirls down the drain in a vortex exactly like the black and white rendered blood that flows down the drain in Psycho. Pan to the patron’s apparently dead face: “That kid gets no tip!” [see https://www.youtube.com/watch?v=__2HB-krrlp4]

There’s no limit to what can be done with the tension between color and black and white. If you pay attention, you can see BW/color tropes in many other places. My most recent encounter was with the BW world comprising Saul Goodman’s drab alternate identity in Better Call Saul

(TV Series). In fact, our editors have experimented with BW/color tension in recent issues of ISCC News.

Michael H. Brill
Datacolor

[1] D. Faraci, *True movie magic: how the Wizard of Oz went from black & white to color*, written 16 Sep 2013, <https://birthmoviesdeath.com/2013/09/16/true-movie-magic-how-the-wizard-of-oz-went-from-black-white-to-color>, website accessed 27 Feb 2020.

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The issue begins with the article ***“Wpt (Waypoint) Shift Manifolds for Object Color Evaluation and Comparison”*** by Maxim W. Derhak, Lin Luo and Roy S. Berns. Wpt (Waypoint) normalization results in a color space representation that is approximately invariant to differences in illuminant and observer since the normalization process tries to minimize those differences linearly. Nonlinear differences still remain due to observer and illuminant differences resulting in Wpt coordinate shifts. When Wpt coordinates for a spectral reflectance are collected for a set of observer and illuminant combinations they form a Wpt Shift Manifold, which provides an excellent mechanism for exploring and understanding differences due to observer and illuminant metamerism. Using this mechanism, methods of defining spectral reflectances are explored to demonstrate how families of spectral reflectances can be formed so that they have relatively constant shifts in “appearance”. This provides a mechanism for manipulating spectral reflectances in a manner that preserves the relative “appearance” for changes in observer and/or illuminant.

In today’s digital society, consumers tend to judge products directly or by digital media (i.e., Internet through smart-

phones, PC, printed pictures on catalogs, cinema, TV, etc.) based on their visual aspects. Goniochromatic colors, which are often found on cars and in cosmetics, are examples of complex, demanding colors to be digitally reproduced because of their dynamic range on the photometric scale of the spectral radiance factor. Khalil Huraibat, Esther Perales, Valentin Vigueira, and Francisco Martinez-Verdu built a multi-primary display model based on the new Quantum Dots (QD) technology to enlarge the display color gamut. In ***“A Multi-Primary Empirical Model Based on a Quantum Dots Display Technology”*** they describe the development of their model and confirm its gamut

color patches that represents the colors used in a pattern or an image, are ubiquitous in color design. Therefore, Jie Yang, Yun Chen and Stephen Westland developed an algorithm for ***“Predicting Visual Similarity between Colour Palettes.”*** This algorithm is intended for digital design workflows where colour palettes are generated automatically using machine learning and for comparing palettes obtained from psychophysical studies to explore, for example, the effect of culture, age or gender on color associations.

In the next article, Primoz Weingerl, Ales Hladnik, and Dejana Javorsek present the framework for ***“Develop-***

Color Research and Application IN THIS ISSUE Vol. 45 Issue #3, June 2020 By Ellen Carter

enlargement, which also improves goniochromatic color reproduction.

Generative Adversarial Networks can create new original designs and this may pave the way for generative design systems in color, fashion and design. Recently there has been a proliferation of digital tools that can generate and share color palettes developed by designers and/or artists. Color palettes, i.e., a collection of

ment of a Machine Learning Model for Extracting Image Prominent Colors.” Prominent colors are the ones that the observer’s attention is first drawn to in a scene or image. Thus, knowing the prominent colors is useful in automatic color design and image categorization, and as a descriptor in content-based image retrieval, and image content analysis frameworks. In the process of this research, the authors also constructed

a database of images, with their associated human-extracted themes of prominent colors, that are open to the public and available to other researchers. They also identified the key factors affecting the perception of prominent colors that are associated with color coverage (which should be adjusted with a saliency map), color properties – lightness and chroma – and diversity of colors.

A major contribution from England to European medieval sculpture between 1350-1550, which is known as the English alabaster carvings, has been studied throughout the 1900s. Many of the alabaster carvings have been destroyed, however, collections of the alabasters remain. Alabaster is a fine-grained, translucent form of gypsum, which is typically white in color. Aurélie Mounier, Marcus Schlicht, Maud Mulliez, Romain Pacanowski Antoine Lucat and Paascal Mora undertook a study to determine the colors originally used in decorating the carvings. In their article, ***“In Search of the Lost Polychromy of English Medieval Alabaster Panels in Southwest France”***, they employ a multidisciplinary approach including Fiber Optic Reflectance spectroscopy in the visible spectral region, Fiber Optic Reflectance Spectroscopy in the Near Infrared region, LED μ -spectrofluorimeter, and microscopy. They plan to integrate their findings on the 3D models panels of two exam-

ples: The Assumption panel of Bordeaux’ Aquitaine Museum and The Adoration of the Magi of the Lormont’s church. They want to provide a better appreciation of the artistic taste of medieval spectators and a better reception for visitors of the Aquitaine Museum of Bordeaux.

Color Research and Application has published many articles on the use of color in diverse areas of our lives. Some of the articles test the assumption that color affects how we feel or what we will do from inspiring purchases, receiving warnings, gathering or sorting information about our food, environment or data we have collected. One area that we have not specifically published about before is color therapy. Domicile Jonauskaitė, Irina Tremea, Loyse Burki, Celine Ndeyane Diouf, and Christine Mohr tackle this problem, in their article ***“To See or Not to See: Importance of Color Perception to Color Therapy.”*** They conduct two experiments—one where they empirically assess the effect of color on stress and anxiety-reduction by focusing on the importance of actually looking at colors, and one where the subjects are asked to imagine the colors when engaging with a therapy routine. Their study showed that participants reported lower levels of stress and anxiety after, as compared to before, a session of a commercially available relaxation-through-color routine

whether participants physically saw colors or were asked to imagine the colors. They observed these reductions within sessions, and further reductions over repeated sessions. However, it is not clear what factors were responsible for these reductions, but it seems that the physical experience of seeing the color was not the sole cause.

Semantic-color mapping methods are often used for tagging and classification. For instance, color graphics can be indexed with semantical tags by matching semantic and color features to achieve semantic image retrieval and visualization. They may involve synesthesia studies. Synesthesia refers to the process in which similar sensations are evoked between stimuli of different senses such as visual, auditory, tactile and other cross-consciousness mechanisms, for example colors and specific musical pieces. In the next article, ***“Calculative Modeling for Quantified Semantics-Color Mapping”***, Guosheng Hu, Zheng Liu, Yun Wang, and Ai Sheng describe the construction of a semantic-color mapping model based on user-evaluated parameters of color relations and semantic dimensions. The model consists of six semantic dimensions corresponding to six multi-color relation scales. An attempt was also made to provide a synesthetic color combination corresponding to a user’s semantic expectation. The

cross-media mapping model can be applied not only in semantic-driven color design, but also in cross-media interaction, cognitive and expressive aid, and other customized design applications. In more advanced stages, the model of semantic-color mapping can also be used in customized design applications.

The next two articles pertain to applications of color science in the textile industry. Appropriate colors and patterns of color can not only help to sell clothing, but can be applied for other uses, such as camouflage—to make wearers less noticeable in their surroundings. Saeid Salehi, Mohammad Khajeh Mehrizi and Bidoki, Sayed Mansour studied the effect of two mineral pigments of black and activated carbon on viscose/polyester blend fabrics printed with vat/disperse dyes having black and green colors. In the article, **“Comfort and Reflectance Properties of Viscose/Polyester Blend Fabric Printed by Vat/Disperse Dyes in Visible/Near-Infrared Region”**, they report on the many colorimetric and physical properties of the fabric that was printed by disperse and vat dyes and the addition of black and activated carbon nanoparticles to match the reflectance characteristics of the NATO black and green hues with forest environment in the Vis-NIR reflection spectrum.

In a completely different textile context, Jianxin Zhang,

Junkai Wu, Xinen Zhang, and Xudong Hu were concerned with the measuring and matching of the individual strands of yarn that were woven into textiles. With the development of the digital imaging technology, the spectral imaging technology is now regarded as an alternative technique for color measuring and matching of textiles. In their article **“Color Measurement of Single Yarn Based on Hyperspectral Imaging System”**, they describe how a novel segmentation method of a single yarn in hyperspectral image and accuracy yarn color measurement using hyperspectral image system developed. Then they compared their method and a modified K-means clustering method. Experimental results show the proposed method can keep the edge information of single yarn better than the modified K-means clustering method, and the color of the yarn segmented by the proposed method is more similar to the actual color of yarn.

One segment of the printing industry is what is now called smart packaging. Smart packaging adds environmentally sensitive qualities such as recyclability, sensing of internal quality, and safe (edible) inks to the traditional requirements for durable containers marked with clear marketing information. In the article, **“Natural Ink Production and Printability Studies for Smart Food Packaging”**, Arman Emine Kandirmaz and

Arif Kandirmaz Ozcan relate how an edible ink was produced from a red-magenta natural dye synthesized from red beets. They studied the physical and chemical qualities of the newly synthesized ink. The ink can be used not only for an antimicrobial preservative, but also as a freshness indicator.

The next two articles deal with color in the environment, first in natural surroundings and then in commercial areas. The first article explores how color plays a key role in place identity and people’s experience in the environment. In **“Investigating Seasonal Color Change in the Environment by Color Analysis and Information Visualization”**, Muhe Yang examines crowdsourced photos of four gardens collected in each of the four seasons to analyze the seasonal environmental colors. The gardens chosen were the Humble Administrator’s Garden in China, Ryoanji in Japan, the Garden of Versailles in France, and Central Park in New York in the USA. The study investigates people’s visual experience of seasonal color change in the environment, and combines techniques of color analysis and information visualization to analyze and present the color change. The results not only show direct comparisons about seasonal color change patterns in different environments and reflect the characteristics of people’s color experience through their pictures in the gardens, but also

has potential applications in landscape design and color research.

What better place to represent commercial areas than a shopping mall? So Fashu Yi and Jian Kang look at the ***“Impact of Environment Color on Individual Responses in Public Spaces of Shopping Malls”*** by going to the real public spaces of large shopping malls in China. Their process involved surveying diverse large and small shopping malls to investigate the features of people’s perception of the audio-visual environment in actual public spaces. Then photographic and audio recordings activities in the malls were collected to be used in their laboratory experiments. The participants were asked to identify the audio and visual elements they noticed and then note their evaluation of the environment. To develop realistic scenarios for their laboratory-controlled experiment, the participants were then asked to answer questionnaires based on the pleasure-arousal-dominance emotion and approach-avoidance behavior theories. The results showed that hue has a weak effect on individual responses, whereas saturation was found to have a significant effect.

Business signboards displaying the name, logo, or colors associated with a product or store are mounted on the outside of buildings, especially in urban environments.

To fulfill their functions, the signboards should be easy to read, but because of their size and frequency, they should also be harmonious with their surroundings. This can be an issue for color decision makers, including designers and public officials, who deal with the visual pollution of numerous outdoor advertisements. In the next article, Seahwa Won, YounJin Lee, and Yung Kyung Park present the results of their study on ***“The Impact of Signboard-Building Color Combinations on Color Harmony and Legibility.”*** Since their preliminary survey showed the three major types of building exteriors (brick, stone and glass), they selected surround colors of brown tones for the brick, grey tones for stone, and blue tones for the glass in their laboratory study of relationship between color harmony and legibility of signs. Readers will see that while their study confirmed many of the expected relationships, they also found unexpected results (hint: think white).

With the continuing trend toward urbanization in China, there have been several published articles in the past on the goals of organizing and promoting unique environments, giving each city its own particular identity. The planning involved setting up detailed urban color planning objectives and included considering the opinions of residents about the scope of urban color planning objectives.

To provide a model for input from the residents, Jiangbo Wang, Lingyun Zhang, and Aiping Gou constructed an experiment using Shanghai as an example. In ***“Study on City Color Image Preferences Based on a Logistic Model: A Case Study of Shanghai”***, a logistic regression model was used to analyze the results of residents’ choice to conclude the significant factors influencing residents’ preference for city color image. This process lays a foundation for setting the development direction and goal of urban future color planning, and promoting more scientific and humanized urban future color planning.

For the last article in this issue, Eva Chang describes the ***“Conceptual Compatibility of Recycle Bin Color: From a Cross-Cultural Perspective.”*** Her hope was to make resource recycling more convenient for the public by using color-redundant coding for recycling information identification across not only Taiwan, but all East Asian and Pacific (EAP) region countries. Among the 418 participants, they did an average of resource recycling five to six days a week. However, the statistical result of pairings of container colors (red, green, blue, and yellow) with particular recyclable materials (paper, plastic, metal, and glass) showed that the choices were not consistent in the different regions. Except for the pairing between paper and green, all remaining pair-

ings were different between the two groups of participants. It is now more common to use the same color for all recycling bins regardless of the type of materials, and to help users identify which type of material is collected by using eye-catching words and graphics to find the correct bin to recycle for each material,

rather than different container colors.

At the end of the issue, readers will find a book review by Michael H. Brill, in which he introduces Kassia St. Clair who reveals *The Secret Lives of Color*. The issue closes with a piece entitled *Publications Briefly Mentions*, which pro-

vides information from the International Commission on Illumination (CIE) about the publication of the CIE x046:2019 Washington Quadrennial Proceedings and the new update of Joint ISO/CIE Draft International Standard ISO/CIE DIS 11664-2:2020 Colorimetry – Part 2: CIE standard illuminants.

Gultekin Celikiz:

1930 – 2019

Gultekin Celikiz, better known as “Tek,” was a Turkish-North American chemist, born in Istanbul, Turkey. Celikiz received a BS degree from Robert College, Istanbul, Turkey and a BS in textile engineering from Philadelphia University.

He studied at the Georgia Institute of Technology, Atlanta, where he was awarded a Master of Science (MSc) degree in Textiles. From 1957 to the mid-1990s, he taught Chemistry at the Philadelphia College of Textiles and Science, later integrated into Thomas Jefferson University. He presented at numerous conferences on color measurement in the textile industry, and he was a member of the American Chemical Society, the American Association of Textile Chemists and Colorists, and the New York Academy of Sci-

ence. In 1983, with Rolf Kuehni, he published the AATCC book *Color Technology in the Textile Industry*.

Celikiz joined the ISCC in 1959. He served as Editor of the ISCC News from 1995-2010, and from 2010-2019, he was Editor Emeritus. He was also an active member of Problem Committee 25 – Determination of the Strength of Colorants. In 2005, he was awarded the ISCC Nickerson Service Award.

He was an enthusiastic photographer, winning prizes for his photographs, and maintained other interests in traveling, music, animals and movie history, and was a member of Woodmere Art Museum, Chestnut Hill. Celikiz died in Erdenheim, Pennsylvania, on September 26, 2019.

Public obituary: <https://www.murrayfuneralhome.com/obituary/gultekin-celikiz>



Gultekin Celikiz

ISCC webinars are the perfect way to shelter in place, while learning and connecting with the color community at the same time. We've already had four webinars in 2020, with another event scheduled for May.

Ken Butts:

“Ultra-Portable Color Measurement – A Spectro in Your Pocket?”

In January, Ken Butts of Datacolor gave us a review of “Ultra-Portable Color Measurement – A Spectro in Your Pocket?” Approximately 50 people attended the webinar where Ken compared the features and specifications of several commercially-available ultra-portable devices. He concluded that they are useful and have the potential for new applications, but are not intended to perform the same as a traditional spectro. In February, Ruthanne M. Hanlon presented “Color + Culture, COLOR & DESIGN TRENDS” to approximately 60 attendees. Ruthanne gave a fascinating review of color trends and their relation to our collective identities. Color trends are in fact an outcome; a product of timing, events, and moods. Our March webinar celebrated International Day of Color, and featured Ellen Divers speaking on “The ‘Blind Spot’ in Architectural

Color.” Seventy attendees participated as Ellen described the work of interior designers and how design students learn about color. She introduced her research and a new framework for investigating the human response to color. Our April webinar was provided by Shelli Sedlak on “Light & Color with LED” on April 14, 2020. Shelli’s webinar dealt with how our eyes can play tricks on us when it comes to color and how the eyes adapt. Lighting designs are affected, positively and negatively, by this. Understanding basic vision science, and how the eye perceives colors of objects and the environment, are important elements in design considerations. Comprehending color metrics that are used with conventional and LED sources will allow for a more thoughtful technical and artistic approach to the design.

ISCC Webinar May Summary

Sally Augustin:

“The Science of Designing with Color: Making the Right Choices”

Sally Augustin presented “The Science of Designing with Color: Making the Right Choices” on May 5. Sally’s webinar described how neuroscience research is clear—surface colors influence how we think and behave. Seeing particular colors has been tied to enhanced creative performance and getting along better with others, for example. Other shades have been linked to degraded analytical performance. The emotional implications of seeing particular colors are based in their saturation and brightness levels while groups form strong associations to hues.

The science-based findings shared in this session support confident selections of hues and saturation and brightness levels, ones that positively influence the physical, emotional, and cognitive wellbeing of individuals and groups, and encourage desired experiences/outcomes. Cultural factors and individual differences, such as personality and gender, will also be addressed in the context of color selection.

Register for the free May webinar at [ISCC.org](https://www.iscc.org). As always, current ISCC members can access recorded webinars in the Members Only materials. And, if you have a topic to suggest for an upcoming webinar, please email us at seminars@iscc.org.

A Blast from the Past: ISCC Newsletter from 50 Years Ago.

ISCC News No. 206 May-June 1970

This newsletter began with memorial tributes to two iconic ISCC members who sadly passed away in 1970: Dr. Gertrude Rand and M. Rea Paul.

Dr. Gertrude Rand

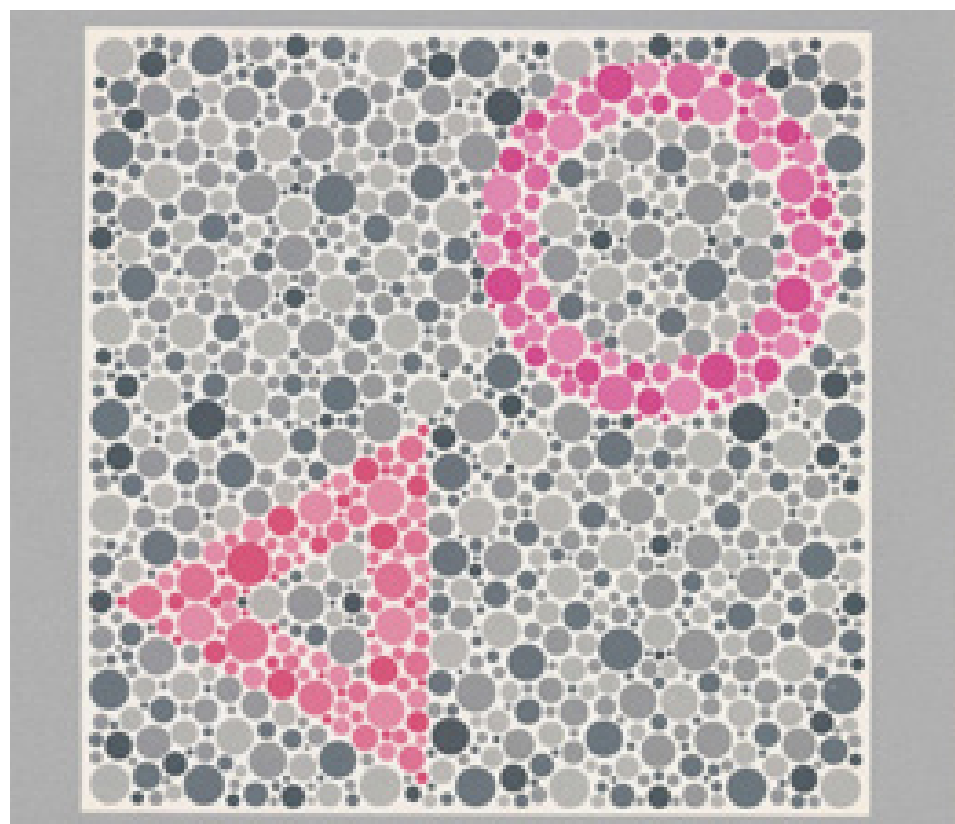
M. Catherine Rittler wrote a heartfelt homage to her colleague, Dr. Gertrude Rand, an expert in the field of lighting and color vision. Most notably, Dr. Rand worked with LeGrand H. Hardy and M. Catherine Rittler to develop the Hardy-Rand-Rittler Pseudoisochromatic Plates for testing color vision. These plates were developed as part of the work



Dr. Gertrude Rand

<http://www.feministvoices.com/gertrude-rand/>

of ISCC Problem Committee 11 on Color Blindness Studies. The plates were used to screen and test color-defective subjects in a qualitative and quantitative manner.

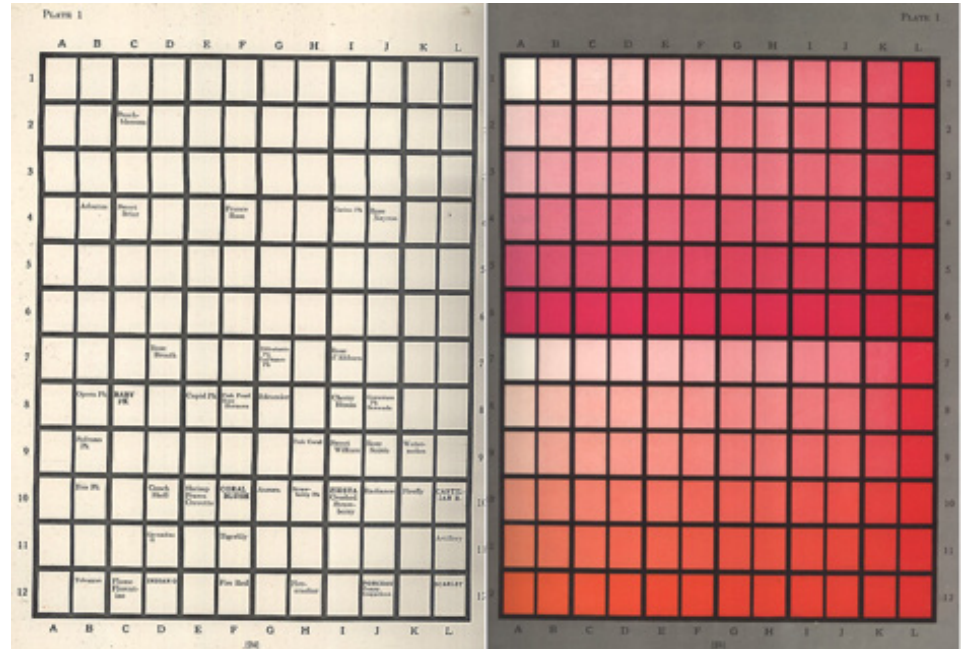


Example Plate from Hardy-Rand-Rittler Pseudoisochromatic Plates
https://www.researchgate.net/post/Does_anyone_know_about_the_Hardy-Rand-Rittler_Test

M. Rea Paul

Deane B. Judd wrote a very touching tribute to M. Rea Paul, the first Secretary of ISCC. Paul was an extremely talented resource for ISCC because his expertise spanned a variety of functions. Paul was a “colorist, paint technologist, organizer, practical psychologist and leader in color control and color designation.” Paul was a natural leader as evidenced by him being among the first to encourage industry to better control color standards through the use of spectrophotometric measurements. In 1930, he and Aloys Maerz pioneered a dictionary of color names called, ***A Dictionary of Color***, that many people still refer to today. The first edition defined 4,000 color names for colors displayed on 64 charts. Here is what the first edition (<https://www.worthpoint.com/worthopedia/dictionary-color-maerz-paul-1930-1735353442>) looked like with its Table of

Note: The Table of Contents and other images from the dictionary were copied from <https://www.amazon.com/Dictionary-Color-Maerz/dp/B0000CHTAN>. As an example, here is the layout for reds with their color names:

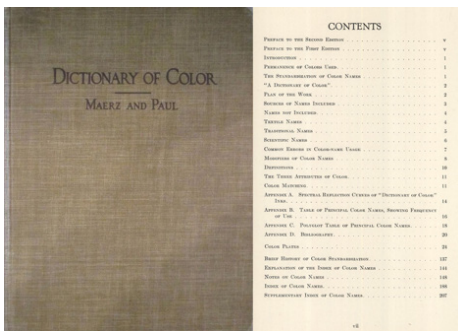


Red Plate from Dictionary of Color 1st Edition

It is obvious from the preceding plates that a range of color samples can have the same name.

Two rather humorous examples were cited to illustrate that Paul was a man who was not afraid to take action when he believed in something. First, he wanted to test the theory that the color red was irritating to people. So, he painted his office and the furniture in it a bright “fire engine red.” After the first hour, guests in his office did not seem to be bothered by the red color at all! This support-

ed Paul’s theory that people can get used to anything! Second, Paul wanted to test how the appearance of food might affect people’s appetite. He served turtle soup, coffee and gravy among other foods and switched the lighting from incandescent, where those foods looked brown to mercury-vapor, where they appeared as various shades of green. Slowly his guests started leaving the table with nausea refusing to continue to eat the food that changed to unappetizing greenish colors. Would you have liked to be a guest at the table of M. Rea Paul?

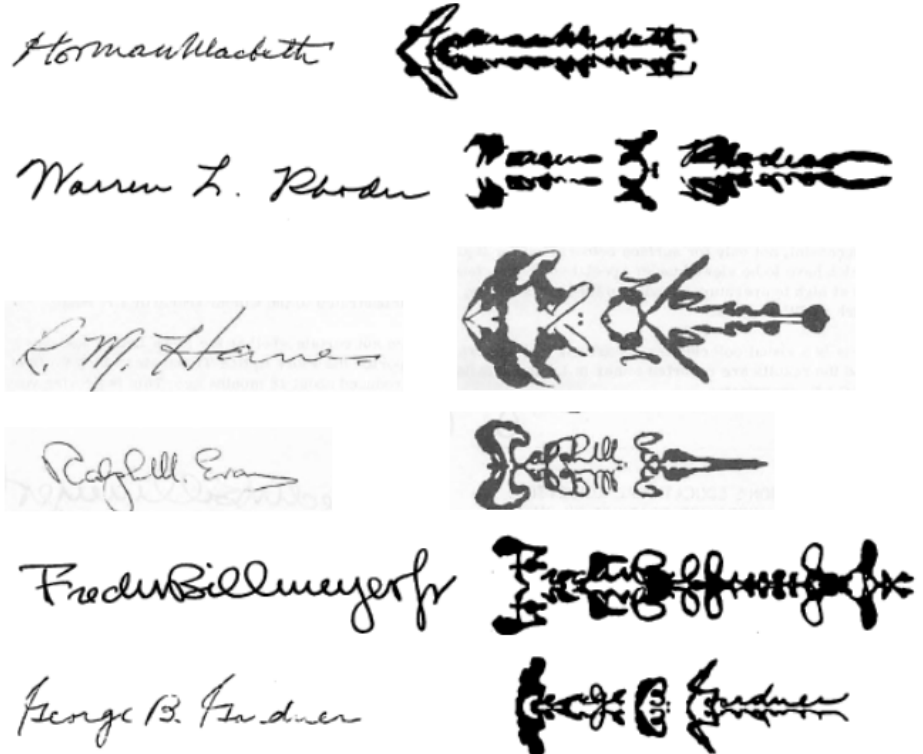


1930 Dictionary of Color 1st Edition
with Table of Contents

A Blast from the Past: ISCC Newsletter from 50 Years Ago.

Highlights of Newsletter

My curiosity was piqued after noticing that this newsletter was sprinkled with signatures and ink blot interpretations of six very prominent ISCC members:



As a painter and art professor at Queens College, City University of New York, Herb Aach felt that a person's signature is just as personal as his reaction to color. To some, 1970 was known as "The Age of Aquarius, when people turned to the sciences for interpretations and forecasts". So, Herb combined the ink-blot interpretations with his astute understanding of the color personalities to paint modern works of art (known as "color graphological projections") dedicated to Norman Macbeth, Warren L. Rhodes, Randall M. Hanes, Ralph Evans, Fred W. Billmeyer, Jr., and George B. Gardner. He used fluorescent paint and all six

paintings were displayed at the 1970 ISCC 39th Annual Meeting. These paintings had a very pleasing look in normal daylight with an even more appealing glow when illuminated by black light! Lacking the ability to publish newsletters in color in 1970, these exquisite pieces of art are left to our imagination and what we know about each of the six ISCC experts!

Finally, an article called "BREAKTHRU" discussed a huge success for ISCC Problems Committee 30. Both the American Institute of Architects (AIA) and the American Registered Architects (ARA) agreed to accept the Inter-

Society Color Council (ISCC) and the United States Department of Commerce's National Bureau of Standards (NBS) Method of Designating Colors as their comprehensive color naming system. This ISCC-NBS Method of color naming is known as the Universal Color Language. This UCL is built on 13 color categories consisting of 10 hue names (pink, red, orange, brown, yellow, olive, yellow green, green, blue and purple) and 3 neutral categories

(white, gray, and black). There are also 13 intermediate hue categories like reddish orange. Its level 3 identifies 267 color blocks. For example, block #176 is Vivid Blue. This block uses synonyms and near-synonyms to name colors. Some of the color names associated with the Vivid Blue block are Ultramarine Blue, Cerulean Blue, Bonnie Blue, Sevres, Bradley's Blue, Methyl Blue, Rood's Blue and Spectrum.

As with ***A Dictionary of Color***, a range of color samples can have the same name. The names associated with this blue in the Maerz and A Dictionary of Color are Alexandria Blue, Armenian Blue, Bonnie Blue, Caeruleum, Cerulean Blue, Coeruleum, Ch'ing, Cleopatra, Cloisonné, Cyanine Blue, Directoire Blue, Egyptian Blue, Genuine Ultramarine (Blue), Hathor and Leitch's Blue.

The ISCC-NBS Universal Color Language acceptance into the architecture industry truly was a huge milestone for ISCC in 1970 because it paved the way for some guidance, consistency and intelligence for color naming and designations. In 1970, ISCC members were pioneers forging into uncharted color education waters that served as a tremendous help to industry. Fifty years later in 2020, where there is a plethora of color information in hardcopy textbooks and on the web, ISCC's Color Literacy Project is very busy trying to dispel the myths, correct the misunderstandings and collect the best color education tools possible! The strength of ISCC's traditions in art, science, industry and education will ensure their success!

2.5PB 2/12 #003484	5PB 2/12 #002F85	5PB 2/14 #002D93	2.5PB 3/14 #004DAD	5PB 3/14 #0047AD	10B 3/14 #0053AA
5PB 3/16 #0046BD	5PB 3/18 #0045CB	2.5PB 4/14 #0066C6	5PB 4/14 #0061C7	10B 4/14 #006CC3	2.5PB 4/16 #0067D5
5PB 4/16 #0060D6	10B 4/16 #006ED2	2.5PB 4/18 #0068E4	5PB 4/18 #0060E6	5PB 4/20 #005FF7	2.5PB 5/14 #0081E3
5PB 5/14 #007BE4	10B 5/14 #0087E0	2.5PB 5/16 #0082F3	5PB 5/16 #007BF4	10B 5/16 #0089EF	2.5PB 5/18 #0083FF
5PB 5/18 #007BFF	10B 5/18 #008AFC	2.5PB 6/14 #009CFF	5PB 6/14 #2796FF	10B 6/14 #00A1FF	10B 6/16 #00A3FF

ISCC-NBS Block #176 Vivid Blue with Munsell Designations and UCL Hexadecimal Code

Louis (Lou) Atkins Graham:

March 27, 1925 – March 17, 2020

My **Mentor**, my **Boss** and my **Friend** passed away on March 17, 2020. He was one of the good guys who spent his life promoting the advancement of color knowledge and integrating the science and psychology of color into our everyday lives. I worked for Lou from 1972 until 1987 at Burlington Industries, where he managed the Color and Dyeing laboratories and the R&D computer center.

He was born in southern Virginia and grew up in Farmville, Virginia. He was a Navy veteran (1942-1945) and earned his B.S. in Chemical Engineering from the University of Virginia and his M.S. in Chemical Engineering from the University of Louisville. He started work at American Viscose, a division of FMC in Parkersburg WV. While there, he met and married his wife, Jean Nelson. They had one child, Natalie Graham Hinkle, of Temple Texas.

Lou became a member of the ISCC in 1957 and continued to be an active member until well after semi-retirement

in 1987. He was a delegate and delegation chair for the American Association of Textile Chemist and Colorists (AATCC). He served the ISCC on numerous committees, including as chair of the Long-Range Planning Committee, which helped focus the future directions of the Council. He served as president of ISCC from 1982 to 1984 and received the Nickerson Service Award in 1998. He was also an active member in The Optical Society of America and the Society of Dyers and Colorists.

While chair of Project Committee 23, Expression of Historical Color Usage, he was instrumental in the formation of the Color Marketing Group along with Everett Call and Robert Eppinger. Lou served as the CMG's first President from 1962 to 1965. In Lou's words, **"At the time, ISCC had a lot of wonderful scientist(s), technologist(s) and practitioners, but there were very few people who were at that edge where someone sold something to somebody else"**. A major problem while

working at American Viscose producing solution dyed fibers was that by the time products hit the market, the colors had gone out of style. Thus, there was a need for a group to help predict coming trends in color.

At one of the "real" Williamsburg Conferences, I had the pleasure of sharing the podium with Lou as we gave a two-person presentation. Lou was instrumental in getting me involved in both ISCC and AATCC and was my teacher, challenger and promoter for my whole career. Throughout his career at Burlington he was keen on color education. We ran several courses a year for both plant personnel and New York Stylist. He was a pioneer in understanding that good color communication in the supply chain was critical to a company's success.

In his semi-retirement, with Lou Graham and Associates, he worked for the International Executive Service Corporation and served tours of duty in Zimbabwe and Mauritius.



"Lou" Atkins Graham

He also developed the HVC Color Vision Skill Test which was a replacement and improvement of the ISCC/CCA Color Aptitude test.

He expected your best and helped you to achieve it. He and his wife Jean were some of the kindest and most generous people I have had the opportunity to know.

A favorite poem of Lou's:

***"Remember the days...a long time back
When the cars by Ford...all came in black?
And those silent films with plots so trite
Were kinda dreary in black and white?
And that fine new kitchen...so clean and bright,
The "refrig" you bought...could only be white?"***

***But, before long...colors did abound,
In paper and paints...and all around,
Floor coverings too, and synthetic yarn,
Had colors galore, some red as a barn.
With effects quite stunning...in every hue,
Each one claiming...his was the right blue!"***

Ronald Connely, April 2020

COLOR IMPACT

2020

Virtual Symposium

As the threat of the COVID-19 pandemic grew in early March, the decision was made to postpone the ISCC/IACC Color Impact 2020 conference originally scheduled for this June at Yale University. We are happy to report that the event has been successfully rescheduled for next year at the same time and place. Look for more information on the updated Color Impact 2021 conference in the next newsletter.

The original plan for this year's joint ISCC/IACC conference included two tracks – Color in Education and Color in the Built Environment. Given the current situation, the existing program was reimagined as two separate events. Color Impact 2020 will focus on Color in Education and Color Impact 2021 will focus on Color in the Built Environment.

The 2020 event will be a one-day ISCC Virtual Symposium held on Saturday, June 6, 2020. The theme of this first-ever ISCC online conference is “A New Vision for Color

Education.” We are very grateful that the breakout session speakers and panelists from the education track of the original program all agreed to shift gears and join us for the virtual event.

The symposium will be hosted by Maggie Maggio and Robert Hirschler, co-chairs of the Joint ISCC/AIC Color Literacy Project and will open with a keynote address by Philip Ball, author of the seminal book *Bright Earth: Art and the Invention of Color*.

This will be a one-of-a-kind event with thought-provoking sessions focused on teaching and learning about color across multiple disciplines. There will be chat rooms and engaging activities as well as presentations on four state-of-the-art color education programs, a debate on the role of traditional color theory, and a panel discussion on color as a subject in art and design programs. The day will conclude with the launch of the public phase of The Color Literacy

project.

Saturday, June 6, 2020 is a special day for everyone who is curious about or wants to be involved in the future of color education. Don't miss it!!

Given the financial uncertainty of the COVID-19 situation, there are three levels of registration. The first level is the full registration fee and supports the cost of the event as well as funding the ISCC student scholarship program and The Color Literacy Project. The next two levels for attendance are options to pay what you can.

In this extraordinary time, we invite you to spend the day with your color colleagues and explore the world of color in a new light.

For more information, see ColorImpact2020.com

Maggie Maggio
Organizing Committee
ISCC Color Impact 2020 Virtual Symposium

Color Literacy Project Update

Following the ISCC/AIC Munsell 2018 Symposium in Boston, a group of colour researchers proposed a joint ISCC/AIC Colour Literacy Project (CLP) with a dual purpose:

- *Identify and address the most basic, current misconceptions and misinformation about colour*
- *Build a bridge between the art and science of 21st century colour education.*

The objective of the CLP is to develop a foundational colour education website that provides state-of-the-art, introductory, interdisciplinary information and materials on the art, science and industry of colour for use in classrooms.

The project was approved by the ISCC board in

August 2019, and the AIC Executive Committee approved the Joint ISCC/AIC Colour Literacy Project in January 2020.

The first phase of the project—research on existing resources and teaching materials—concluded that the time is ripe to radically rethink basic colour education by introducing an experience-based colour learning model and recast colour as a collaborative arts and science subject at the elementary and secondary school level in STEAM programs and at the professional level across art, science, and industry.

The official report on the findings of the first phase and the launch of the second phase of the project—development and testing of prototype learning modules—will take place at the “ISCC Color Impact 2020 Virtual Symposium: A New Vision for Colour Education” on June 6, 2020.

More information on the Colour Literacy project will be available on a dedicated website to be launched in June 2020.

Maggie Maggio
Colour Literacy Project Chair



Arrangement by Maggie Maggio

COLOR IMPACT 2021



For the Built Environment

Yale University from June 6-9, 2021

Due to the COVID19 pandemic, ISCC had to rework the Color Impact 2020 conference, but great ideas have emerged.

The first is the Virtual Symposium on Color Education described by Maggie Maggio in her article. Like many others, we were pushed into the future of online events, but are excited about the speakers and the audience we can recruit worldwide.

The second is the rescheduling of the Color Impact conference at Yale. With the university's help, our team was quick to reschedule for the same time next year. Having two meetings, gives us the great opportunity to focus on education in 2020 and on the built environment in 2021. Most of our speakers have been able to transition with us.

I am excited about additional planning time. As with any creative process, great ideas

come along the way and sometimes they are too late. But now we get to implement them by adding speaker presentations in areas of science, materials and technology for design. Please visit the Color Impact 2020 website in mid-June for details. This conference is a collaboration between the Inter-Society Color Council (ISCC) and the International Association of Color Consultants - North America (IACC-NA).

Yale University was chosen as the site for the conference due to its strong architecture, design and art departments, and also its connection to the Bauhaus through Josef and Anni Albers. It is the home to the Faber Birren Color Library and numerous buildings of architectural significance. Don't miss the chance to visit all of these interesting places by joining us at Yale University, June 6-9, 2021.

Whether you are an architect, interior or industrial designer, artist, student or color scientist, this conference is the place to be. Explore with us the influence of lighting and color science on design. Meet researchers who have developed innovative studies and applications into many facets of color.

I am thrilled to announce that we have internationally known art and design professionals, who will speak on the impact color has had on their lives and careers. Whether or not you are familiar with their work, you will leave the conference inspired.

• **Shashi Caan** – Design Futurist with dedication and commitment to furthering human betterment through and by design

• **Jill Pilaroscia** – Accredited IACC Designer who believes in the power of color, which shaped her quest to educate the public and design professionals about the value of color

• **Eve Ashcraft** – Designer who consults on color for everything from interiors, exteriors, and corporate branding to paint lines and knitting yarn.

• Speaker to be confirmed
In addition, we will hear from four expert researchers on education and application of color.

• **Robert Hirschler** – Bauhaus Influence on Color and Design

• **Renzo Shamey** – Color Pioneer Faber Birren

• **Leslie Harrington** – Aug-

mented Color Intelligence

• **Kory Stamper** – “Rose” by any other Name, The Color Name Problem from the Language Specialist’s Point of View

Additional learning opportunities for attendees include:

- A webinar series in Fall 2020
- 24 Breakout Sessions
- Research Posters
- Lighting Panel and Science – Materials Panel
- Networking Events
- Student Poster Competition with prizes, Fall 2020 deadline to be announced
- Short Courses on Color Literacy, Josef Albers Color Experiments, Measuring Color, and Humane Color Design
- Tours of the campus architecture, the Birren Library, and the Albers Foundation
- ISCC and IACC-NA Annual Meetings

Visit [colorImpact2020.com](https://www.aic-color.org/colorImpact2020.com) to sign up for the newsletter, to get program updates. Registration will open this Fall.

If you are still confined to your homes, take time to read about color. My recommendation is the informative book of abstracts from AIC 2019 *Colour and Landscapes*. There are several topics directly related to Color Impact 2021.

<https://www.aic-color.org/publications-proceedings/>

See you at Yale in 2021.

*Jean Hoskin,
Conference Co-Chair*

AIC 2020: Interim Meeting.



The AIC 2020 Interim Meeting is scheduled for October 6-9 in Avignon, France. This meeting is hosted by the Centre Français de la Couleur (CFC). The theme of the meeting is “Natural Colours – Digital Colours”. The deadline for the third and final Call for Abstracts was moved up to April 5, 2020 to assess the number of presenters and get a feeling for the number of potential participants in consideration of this COVID-19 pandemic year.

The number of abstracts submitted was 130, which is a formidable number! So, the meeting will take place, but the format remains flexible. To ensure that all submitted abstracts/presentations can be presented and published, the CFC will explore the use of various formats. ISCC will continue to monitor the situation and get information to all members as it becomes available. In the meantime, please feel free to check the meeting website at www.aic2020.org for updates.

Paula J. Alessi, ISCC Liaison to AIC

Calendar 2020	
May 14-15	CMG 2020 ChromaZone® #4 Info: https://colormarketing.org/event/virtual-workshop-four/
May 20-21	CMG 2020 ChromaZone® #6 Info: https://colormarketing.org/event/virtual-workshop-six/
Jun 4	CMG 2020 ChromaZone® Atlanta, Georgia Info: https://colormarketing.org/event/chromazone-atlanta-2020/
Jun 9-10	CMG 2020 ChromaZone® #5 Info: https://colormarketing.org/event/virtual-workshop-five/
Jun 9-10	ASTM E12 International, West Conshohocken, PA Info: https://www.astm.org
Jun 14-19	4th workshop on Visual Understanding by Learning From Test MSG Web Data, Seattle, Washington. Info: http://www.vision.ee.ethz.ch/webvision/workshop.html
Jun 15	New Trends in Image Restoration and Enhancement workshop, Seattle, Washington Info: https://data.vision.ee.ethz.ch/cvl/ntire20/
July 14	CMG 2020 ChromaZone® Minneapolis, Minnesota Info: https://colormarketing.org/event/chromazone-chicagol-2020/
Aug 6-8	Illumination Engineering Society Annual Conference, Hilton New Orleans Riverside, New Orleans, Louisiana Info: https://www.ies.org/events/annual-conference/
Oct 1-3	Techtextil, Atlanta, Georgia Info: https://techtextil-north-america.us.messefrankfurt.com/us/en.html?us/en.html
Oct 5-7	15th International Symposium on Visual Computing, San Diego, California. Info: http://www.isvc.net
Oct 6-9	AIC Interim Meeting on Natural Colors-Digital Colors, Avignon, France Info: http://aic2020.org
Nov 2-6	CIC28, Makuhari Messe, Chiba, Japan Info: http://www.imaging.org/site/IST/IST/Conferences/CIC/CIC_Home.aspx
Nov 2	ICC DevCon 2020, Chiba, Japan Info: http://www.color.org/DevCon/devcon2020/index.xalter
Nov 19-21	CMG International Summit, Austin, Texas Info: https://colormarketing.org/upcoming-events/

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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