



Inter-Society Color Council News

Issue 450

Mar-Apr 2011

Sixth Oxford Conference Postponed

We are disappointed to have to announce that the Sixth Oxford Conference on Spectrometry has been cancelled due to a lack of submissions. We are very appreciative of the authors who submitted the five papers we received. That is obviously insufficient for a multi-day conference. It is too soon to announce any rescheduling plans. The Board of Directors will address the issue at a future meeting. We do apologize for this change of plans.

President's Report

Barbara Martinson has resigned from the board of directors for personal reasons. We want to thank her for all her work over the past years. Michael Brill has graciously agreed to stand in as board member for the rest of her term.



The Board of Directors met in teleconference at the end of January. We discussed the excellent progress being made with the joint meeting of ISCC and AATCC which will be held in Charlotte, North Carolina April 23-24 2011, register before April 13 to save. Full information can be obtained on both the ISCC and AATCC websites.

The plans are progressing well for the Special Topics meeting at CIC 2011. The topic will be "Revisiting Color Spaces". After several discussions it has been decided to hold this meeting on Saturday, 12 November 2011. Robert Buckley and Francisco Imai joined us for this part of the meeting.

We have had serious difficulties in organizing our June meeting, with only five papers submitted at the time of the this writing. Therefore, we are forced to postpone this meeting indefinitely and move the annual meeting. Our tentative plan is to hold the ISCC annual dinner meeting to Friday, 11th. November 2011 before the ISCC Special Topics meeting after CIC 19.

We have a group looking at ways to update our By-Laws to allow, among other things, modern means of electronic communication. This group met after the BOD meeting and will report on the best way to proceed at a future date .

We are also going to survey the membership to see how we can make the ISCC more relevant to you. A first draft has been written and we are looking into the best way to conduct this survey.

I hope to see most of you in Charlotte at our joint ISCC/AATCC meeting.

Frank O'Donnell, *President, ISCC*

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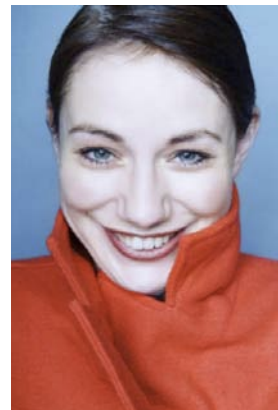
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Susanna Anastasia BÖSCH (1968-2010)

The Swiss Colour Community is very sad to announce that Susanna Anastasia Bösch, a member of the AIC 2011 Organising Committee, passed away on 23 December 2010 after a short and sudden illness. She was 42 years old. Susanna A. Bösch was buried in Winterthur, Switzerland, on Thursday, December 30th, a misty grey and cold day strongly in contrast to the name of her firm *farbe himmelblau* [colour of blue sky], which she founded in 2004 (www.farbehimmelblau.ch).

Susanna A. Bösch specialized in colour design and space concepts realizing colour concepts for architecture, interior design, corporate identity and signage in Switzerland including colour concepts for the new building *Zaunteam* in Neftenbach, *TCM Th. Falzone* in Winterthur, and the production hall of *Huber + Suhner* in Pfäffikon; the signage concept for the public baths *Badi Wülflingen* in Winterthur; the lighting concept for *Casinotheater Gala 05* in Winterthur; as well as corporate identity concepts for the medical kinesiology praxis *S. Szostek* and the *Bund Europäische Farbdesigner (BEF)*, the official representative association in Europe of the *International Association of Colour Consultants and Designers (IACC)*. She was also a colour consultant for the *Zurich Höhenklinik in Wald* as well as the *Psychiatrisches Pflegeheim Sonnhalde* in Gröningen. Broadly engaged as a speaker, her talks addressed such topics as 'Colour Accompanies Us', 'Colours for the Elderly' and 'Of Effects, Emotions, Qualities and Symbolic Meanings of Colours'. Her articles focused on single colours, e.g., mauve, lapis lazuli, scarlet and ruby-red.



Susanna A. Bösch's colour philosophy was closely related to the creation of humanly adapted living space and socially humane working environments. The human being was always at the centre of her reflections. She focused on applying the most recent findings in the psychology of colour as well as incorporating effects caused by the interaction of visual and ergonomic aspects. She was conscious that colours have always been important constitutive elements of human environments and that they affect the mood and well being of the inhabitants. She closely collaborated with architects, artisans, designers and trendsetters. After a session of the AIC 2011 organizing committee in 2009 we met and discussed issues related to working as a colour consultant. She told me how keen she has always been to follow up work-in-progress by visiting construction sites to see the application of her colour concepts in the actual architectural spaces.

Verena M. Schindler, *AIC 2011 General Chair*

4M Color Management: Multi-Media, Multi-Material Color Control Symposium

AATCC and the Inter-Society Color Council (ISCC) will jointly sponsor a symposium titled, 4M Color Management: Multi-Media, Multi-Material Color Control Symposium. This two-day program will be held April 28-29, 2011 at the Hilton University Place in Charlotte. The program will focus on on-line and multi-material color control, developments in digital color management in the supply chain, and color appearance models for multiple substrates.

Keynoting the program will be world renowned color scientists, Dr. James A. Ferwerda, Associate Professor, Rochester Institute of Technology; and Mr. Rolf G. Kuehni. Dr. Ferwerda's presentation, **Envisioning the Material World**, will discuss image synthesis techniques to develop psychophysical models of material perception that can relate the physical properties of materials to their visual appearances. He will describe how they have been taking advantage of the limits of material perception to develop new techniques for efficiently and realistically rendering complex scenes. Dr. Ferwerda will also discuss some recent efforts to develop advanced display systems that allow hands-on interaction with virtual materials and surfaces.

Color Control of Textiles: Paths to Move Forward will be the topic of Mr. Kuehni's presentation. He will discuss psychophysical system of color quality control (reflectance measurement and calculation) and the work executed in this area in the last 60+ years. Issues regarding the large number of variables and the magnitude of variabilities involving observers, methods, and materials as well as the pros and cons of some paths of improvement will be discussed. The investment needed to make measureable and statistically supported progress to solve this problem will also be addressed.

REGISTER* EARLY AND SAVE! Individuals registering on or before April 13 pay US\$749 (US\$499 for AATCC/ISCC members) and will include luncheons, breaks and a copy of all available papers. After April 13 the registration fee increases to US\$549 for AATCC/ISCC members and US\$799 for nonmembers. Refunds will be honored if cancellations are received on or before April 20, 2011. A US\$75 cancellation fee will be charged. To register on-line or download a form:

www.aatcc.org/events/symposia/4MColor.htm



Overnight accommodations are available at the Hilton Charlotte University Place, 8629 J.M. Keynes Dr., Charlotte, NC telephone 704-547-7444. The group rate is \$119.95 and reservations can be made directly with the hotel. Individuals must identify their attendance at the AATCC/ISCC symposium in order to receive the group rate. Reservations must be made by April 5 to ensure room availability.

General Papers for AATCC/ISCC Joint Meeting

Optimum Color Communications - John Darsey, Color Solutions International

Analysis of Variability in Perceptual Assessments of Color - Renzo Shamey, North Carolina State University

The Future of Lighting: Color, Efficiency, and Compliance - Ann Laidlaw, X-Rite Inc.

Digital Proofing of Spot Color - Michael Charlton, Sun Chemical Corp.

Automated Closed-Loop Systems to Control the Color of Extruded Plastics - Ken Phillips, X-Rite Inc.

Color for Packaging: Curves, Color Management, and Brand Colors - Mark Samworth, ESKOArtwork

G7: Enabling a Global Print Supply Chain - Jeff Budd, Hallmark Cards Inc.

Tolerable Tolerances: Managing the Complexities of Customized Tolerances - Chris Hipps, Datacolor

Managing Color on Multiple Textile Substrates - Andrew Fraser, Chico's

Palette Rationalization - Michael Charlton, Sun Chemical Corp.

Digital Textile Printing and The Question of Color - Kerry King [TC]2

Variables Influencing Color Reproducibility in Digital Printing - Carly Morrison, Cotton Incorporated

Digital Proofing of SPOT Color Packaging Inks Using a Desktop Inkjet Printer - Danny C. Rich, Sun Chemical Corp.



Hilton Charlotte
University Place



Charlotte skyline

HUE ANGLES

(Send contributions to mbrill@datacolor.com)

You may remember from the 1980s a vector model of color by Guth, Massof, and Benzschawel. The last author is Terry Benzschawel, a noted color-vision psychophysicist at Indiana University, Berkeley, and Johns Hopkins. But Terry has spent the past two decades as a Wall-Street “quant.” Here Terry writes of his journey:

From Color Science to Wall Street

For much of my life, I have wondered how and why I perceive myself as separate from my environment and other people. Studying the human visual system provided a perfect opportunity to think deeply about the relationship between mind and body.

My post-doc trail took me through psychology, optometry, ophthalmology and engineering. But when I failed to secure a faculty position by my third post-doc, I became so despondent that I quit my last position and remained unemployed for nearly a year. Finally, I answered a New York Times ad, “Scientists – Earn Big \$\$\$ on Wall Street.” Upon meeting me, the recruiter told me that I was “totally unsuited for a career in finance.” To her surprise, a mathematician consulting for a prominent bank picked my resume out of a stack, interviewed me, and offered me a job. Thus, my career in finance was launched.

I was unprepared for the financial world. Although I was expected to master the financial literature and terminology, my environment didn't support that effort. I had to compete with people ten years my junior who had been preparing for finance for their entire career. Most of my immediate superiors had less education than I did. I had to overcome my Ph.D. arrogance and acknowledge that there are many very intelligent people in the world without Ph.D.s. (See Emmanuel Derman's book *My Life as a Quant*. My experience resonates with what is written there and I found the book entertaining.) Also, I had to give up publishing my research. Models similar to the proprietary ones I developed were published independently by academics several years after mine were in use.

My first job in finance was on the ill-fated 78th floor of the World Trade Center. My boss had a genetic algorithm to predict the likelihood of corporate bankruptcy. I was given information about the model only on a “need-to-know” basis. This was frustrating to me, but guarding information is common in the business world.

After about a year, my boss's contract was terminated and I faced unemployment. However, my original recruiter quickly found me a position building neural networks to detect fraud on credit

card transactions. Having built non-linear models of the visual system, I was able to build a successful network model that was used in the company's fraud early-warning call center. Still, salaries and promotions were frozen, so I was dissatisfied. While on vacation in 1992, I met a managing director at a bond trading house. He passed my resume to their Fixed Income Arbitrage Group, featured in Michael Lewis's book *Liar's Poker*. I interviewed, was offered a job, and gleefully accepted.

With prospects of wealth and glamour in the famous “Arb group,” I began the Associate Training program. The Arb group was engaged in “proprietary trading”, risking the firm's money, in contrast to their larger broker/dealer “sell side” business. In my second year, my direct supervisor resigned and my job suddenly worsened. Things got better after I built several successful models for pricing risky debt in emerging markets and we traded on those models. In 1998, after a corporate takeover, the Arb group was disbanded and we were all fired. The firm found me a job as a trader/strategist. I built neural network models and traded U.S. Treasury securities and the Mexican Peso while applying my credit models to help our customers manage their credit portfolios.

By 2002 I had gained some notoriety and began to travel the world visiting clients while building a research group. The great liquidity boom of the new century was on and I was riding high, helping clients manage their risk. Unfortunately, my firm didn't apply my methods to manage our own risk, but instead offered my wares to induce clients to buy our products. One advantage of working on “the customer side” is that I was encouraged to publish my work for clients and, at last, in journals and at conferences.

During the past decade, I have coordinated the recruitment and training of Ph.D.s for the firm's “quant” groups. In that role I travel to major universities and give talks about our firm. I speak with hundreds of talented young prospects each year and review resumes of several times that. Supervising young staff, both interns and full-time hires, has been a satisfying aspect of my job. Having

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(Hue Angles, continued from previous page)

temporary help, such as interns, has allowed me to do more speculative work I do not have to justify to the trading desks. I also coordinate a weekly seminar series featuring speakers from our firm and faculty at major universities.

In late 2008 I become a partner, called a “managing director”---no small achievement for someone of my temperament. There were challenges. With the financial crisis, much credit business was lost or curtailed. During this period, I’ve made myself useful by applying my methods to help manage risk within the firm. Only recently, as market activity returns, I’m back helping clients manage their credit portfolios.

The markets are relentless. They open every business day and proceed regardless of one’s mood or personal problems. Workdays are consistently long. Personally, I have had a lot to learn both about finance and life. I still do.

Even after 20 years, I sometimes view myself as an academic “spy,” probably because my ambitions are atypical for this business. My interests are not always on the direct track to short-term corporate revenue, so the road to partner was longer than typical. But because I established a pipeline of speculative projects that have come to fruition, I have bought the freedom to explore issues not directly related to our trading business.

I am grateful for my past and present opportunities. Much of my time now is spent on innovation and my mental life is as stimulating as it was when I was a vision scientist. I am certain that this is rare for someone in finance. I continue to have a passion for learning and enjoy collaborating with talented younger people.

Terry L. Benzschawel



CIE Seminar, May 19

The CIE/USA Seminar on Photometry, Colorimetry and Application of Solid-State Lighting will be held at the Courtyard Philadelphia Airport Hotel on Thursday, May 19, 2011 from 8 AM to 5 PM allowing coordination with LightFair at the Philadelphia Convention Center. For information visit www.cie-usnc.org or contact Tom Lemons 978/745-6870.

Pantone Color of the Year for 2011: PANTONE 18-2120 Honeysuckle

Energizing Honeysuckle Lifts Spirits and Imparts Confidence to Meet Life's Ongoing Challenges

CARLSTADT, N.J., Dec. 9, 2010 – Pantone LLC, an X-Rite company (NASDAQ: XRIT), and the global authority on color and provider of professional color standards for the design industries, today announced PANTONE® 18-2120 Honeysuckle, a vibrant, energetic hue, as the color of the year for 2011.

While the 2010 color of the year, PANTONE 15-5519 Turquoise, served as an escape for many, Honeysuckle emboldens us to face everyday troubles with verve and vigor. A dynamic reddish pink, Honeysuckle is encouraging and uplifting. It elevates our psyche beyond escape, instilling the confidence, courage and spirit to meet the exhaustive challenges that have become part of everyday life.



“In times of stress, we need something to lift our spirits. Honeysuckle is a captivating, stimulating color that gets the adrenaline going – perfect to ward off the blues,” explains Leatrice Eiseman, executive director of the Pantone Color Institute®. “Honeysuckle derives its positive qualities from a powerful bond to its mother color red, the most physical, viscerally alive hue in the spectrum.”

Eiseman continues, “The intensity of this festive reddish pink allures and engages. In fact, this color, not the sweet fragrance of the flower blossoms for which it was named, is what attracts hummingbirds to nectar. Honeysuckle may also bring a wave of nostalgia for its associated delicious scent reminiscent of the carefree days of spring and summer.”

Honeysuckle is guaranteed to produce a healthy glow when worn by both men and women. It's a striking, eye-catching hue that works well for day and night in women's apparel, accessories and cosmetics, and in men's ties, shirts and sportswear. Add a lively flair to interior spaces with Honeysuckle patterned pillows, bedspreads, small appliances and tabletop accessories. Looking for an inexpensive way to perk up your home? Paint a wall in Honeysuckle for a dynamic burst of energy in the family room, kitchen or hallway.

Color Research and Application IN THIS ISSUE, April 2011

We open this issue with an article in which Grigorios Polymeropoulos, Nikolaos Bisketzi, and Fragkiskos Topalis propose “A tetrachromatic model for colorimetric use in mesopic vision”. The authors observed that while trichromatic color matches can be made at any light level, once a tetrachromatic match is made it holds for all radiances. Although it has not been confirmed how the rods interact with the cones these authors hypothesize that rods output share the identical channel with two or three kinds of cones, in every stage and that their actions are competitive. With this observation and hypothesis, the developed and tested their new tetrachromatic model for use in the region where both rods and cones are active.

Our next article also was the result of a surprising observation by the authors. Maria Nadal, Cameron Miller and Clarence J. Zarobila noticed discrepancies in the measurements of two commonly used colored ceramic tiles when the illumination was changed from broadband to monochromatic, and the detection systems were changed from spectral to broadband. In their article “Reflectance Factor Measurement Complications Due to Near Infrared Fluorescence” they describe the near infrared fluorescence that they found in the orange and red tiles and how this affected the reflectance factor measurements in the visible region.

Color has been used as a coding device effectively for both sorting and search tasks. The selection of the coding and the efficiency of the tasks have been widely studied. In a search task, the target of a specified color is presented in a field containing other items (called distractors) which may vary in color and number. In our next article Patrick Monnier examines the effect of the “Color Heterogeneity in Visual Search.” He found a gradual drop in search performance as the heterogeneity of distractors increased. This result was true across different observers, different targets, and different search tasks, but also individually observers showed various levels of distraction.

News Flash - one visual step of Munsell Value will appear three times as large as one step of Munsell Chroma, at least for certain experimental conditions. Where did this news flash come from? S. Y. Zhu, Guihua Cui, Changjun Li, and M. Ronnier Luo report it in their article “Comparing Large Colour-Difference Data Sets.” They examined six data sets with color differences averaging about 10 CIELAB units and used ten

different color difference metrics in the evaluation. They found the Munsell data set stood out from the other as separate and different. The results clearly showed that all the formulae fitted better to the Munsell(3:1) data than the Munsell(2:1) data.

Our next article explains “Why higher resolution graphics cards are needed in colour vision research.” Luis Garcia-Suarez and Alexa Ruppertsberg examined 8-bit and 14-bit per channel graphics cards and found that while the 8-bit resolution was sufficient for color discrimination tasks when only the luminance varies, it was inadequate for color discrimination experiments where stimuli only vary in chromaticity. The 14-bit per channel cards allows more accurate measurements of achromatic and chromatic discrimination threshold and avoids experimental (spatial or luminance) artifacts, such as bandings that can occur on achromatic or chromatic gradients.

Over the past several years we have been publishing a series of articles chronicling the research on color harmony that was conducted by Antal Nemesics over a period of 19 years at the Budapest University of Technology. In the current installment, “Experimental determination of laws of color harmony Part 5 The harmony content of the various hue triads” Dr. Nemesics discusses selecting and studying hue triads in the Coloroid System. He found that the saturation level of the elements in the hue triads, influences significantly their harmony content. Also, the experimental data also show a way to apply the study to interpret the conclusions in other color systems.

Just a couple of months ago, the Color Science Association of Japan hosted the Nayatani-Yoshinobu Memorial Symposium, which was initiated by Dr. Shoji Tominaga. The speakers were Dr. Tominaga, Dr. Noboru Ohta, Dr. Hirohisa Yaguchi, (all three associated with this journal editorially), Dr. Hideki Sakai and others. In this issue, we have the final article that Dr. Nayatani submitted a couple of months before his death. Throughout his retirement he continued to work on contributions that would help not only color scientists, but also designers and other practitioners using color in important ways. In “Predictions of Munsell Values with the Same Perceived Lightness at Any Specified Chroma Irrespective of Hues - Determination of Any Tone Colors” Yoshinobu Nayatani and Hideki Sakai describe a simple formulae that can be used for predicting Munsell colors with the same tone values no matter the hue. The concept described in the present study is that a

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common chromatic strength function can be used for transforming each of the three kinds of color attributes (hue, lightness, and chroma) from their uniform color space metric to their corresponding color appearance space attribute.

With spring arriving, our final article gives us a refreshing look at the magnificent colors produced by flowers. For those interested in the color measurement in the garden, do not miss “Diffuse reflectance-factor measurements of rose petals” by Gottipaty N. Rao, James Garofalo, and Elias Lanides.

We end this issue with the Associate Editor from the United Kingdom presenting a report on the 2nd CIE Expert Symposium on Appearance and Romesh Kumar reviewing the new edition of *High Performance Pigments* edited by Edwin Faulkner and Russell J. Schwartz.

Ellen Carter

Editor, *Color Research and Application*

Rutgers Program in Perceptual Science

In anticipation of funding from the National Science Foundation, the Rutgers Program in Perceptual Science invites applications for a new Research Experience for Undergraduates (REU) program in Perceptual Science and Technology, spanning Computer Science, Cognitive Science and Information Science.

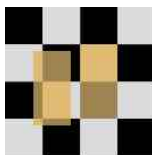
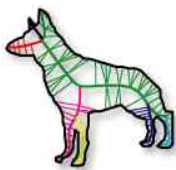
The program will recruit eight college undergraduates to Rutgers in summer 2011 to conduct research under the guidance of faculty mentors here. The positions come with a stipend as well as on-campus housing and travel reimbursement.

Participants will be part of a larger community of undergraduate research interns at Rutgers, including participants in the RISE and DIMACS REU programs. We welcome applications from women, minorities and students with disabilities.

Complete details about the program, including an announcement, description of research opportunities and an online application form, are available at:

ruccs.rutgers.edu/persci_reu/

Review of applications will begin February 21, 2011, and will continue until all places are filled.



8-Year-Olds Publish Scientific Bee Study: Blackawton bees

(from www.wired.com, December 2010)

A group of British schoolchildren may be the youngest scientists ever to have their work published in a peer-reviewed journal. In a new paper in *Biology Letters*, 25 8- to 10-year-old children from Blackawton Primary School report that buff-tailed bumblebees can learn to recognize nourishing flowers based on colors and patterns.

“We discovered that bumblebees can use a combination of colour and spatial relationships in deciding which colour of flower to forage from,” the students wrote in the paper’s abstract. “We also discovered that science is cool and fun because you get to do stuff that no one has ever done before.”

The paper itself is well worth reading. It’s written entirely in the kids’ voices, complete with sound effects (part of the Methods section is subtitled, “the puzzle’...duh duh duuuhhh”) and figures drawn by hand in colored pencil.

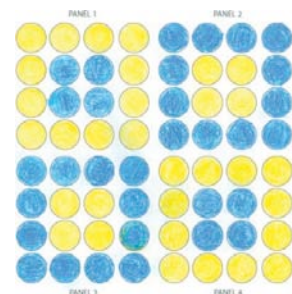
The project, which began three years ago, grew out of a lecture neuroscientist [Beau Lotto](#) of University College London gave at the school, where his son Misha was a student. Lotto spoke about his research on human perception, bumblebees and robots, and then shared his ideas on how science is done: “Science is nothing more than a game.”

“Nature’s way for us to discover patterns and relationships is to play. That’s the same aim that science has,” Lotto said. “I think everyone does science every day. The scientific process is part of life.”

After the talk, Lotto and [Dave Strudwick](#), Blackawton Primary School’s head teacher, decided to try to do an original research project with the students where the kids would have full control. Lotto also ran a scientific outreach program called [Street Science](#), whose aim was to get non-scientists to do original experiments outside the lab. He and Strudwick wondered if the same idea would work in a classroom.

[Editor’s note: as of this writing the background of the formal publication is available online at rsbl.royalsocietypublishing.org.

Search for “Blackawton”]



Member Body News: SCAD Presents the 2010 E.B. Clark Award

The Society for Color and Appearance in Dentistry presented the 2010 E.B. Clark award at its Second Annual Meeting in Newport Beach, CA on September 24-25, 2010. This year's recipients were **Stephen F. Bergen DDS, MSD** and **Jack D. Preston DDS**.

Stephen F. Bergen is currently the Chief of the Dental Service at the New York Department of Veterans and Professor of Prosthodontics at New York University, College of Dentistry. He earned a Master's Degree in Dentistry from New York University in the field Color Science and Education as it applies to dentistry. He is a Board Certified Prosthodontist concentrating in Maxillofacial Prosthetics having achieved Diplomate status in 1979. He is extremely active in his specialty organizations as well as many other dental societies being elected to over 30 positions on their Board of Directors. He was President of 5 national prosthodontic dental organizations. He has published numerous articles in dental journals and became a nationally known dental lecturer.



In the Department of Veterans Affairs, he has been a leader and proponent for the development and continuous improvement of the electronic dental record. In 2002 he was recognized by the VA by being awarded the Mark Wolcott Award for Clinical Excellence in the Clinical Care Leadership, the first and only dentist to be so honored.



Jack D. Preston received his dental degree from the University of Southern California in 1957, and completed a residency in fixed prosthodontics at Fitzsimmons General Hospital in 1967. He served 11 years in the US Army. This was

followed by 9 years at the Veterans Administration in Los Angeles, California where he established and directed the resident training program in fixed prosthodontics. He then was recruited by the University of Southern California where he was a tenured professor and held the Harrington Chair in Esthetic Dentistry. He also conducted a private practice in Brentwood, CA. He has authored numerous publications, and served as president of numerous professional organizations and was an examiner on the American Board of Prosthodontics.

He retired from the profession in 1999, and now he and his wife, Charlotte, farm three acres of Bordeaux grapes, and enjoy home winemaking in Central California.

ABOUT SCAD: *The Society for Color and Appearance in Dentistry was founded in 2008 as a consortium of dental professionals and other experts interested in this area of aesthetic dentistry specifically related to scientific investigation and application of color and appearance in dentistry.*

CFP: "Colour" — Special Issue of the Journal of Design History

Deadline for submissions: 1 December 2011

Colour is a major aspect of design practice that has a long, tumultuous history. It has been the subject of countless publications and exhibitions about visual culture, symbolism, science, fashion, and aesthetic meaning. By contrast, this special issue of the Journal of Design History focuses on the work of colour practitioners, rather than on the colours themselves.

Today, colour standards and colour forecasts are so ubiquitous that they are taken for granted, their chaotic history forgotten. But the technical and cultural challenges of colour perplexed the practical men of the industrial era and inspired design theorists from Chevreul to Owen Jones to Le Corbusier. Over the course of the twentieth century, colour was standardized according to Taylorist principles and rational colour practice was added to the designer's toolkit. Practitioners debated the compatibility of rational standards and the creative needs of the style and fashion industries.

This special issue seeks papers on the historical aspects of colour and design practice that are based on original research in designers' archives and other historical records, artifact collections, and oral histories.

Topics include but not limited to the following themes:

- Histories of colour in retailing, advertising, graphic design, and branding
- The role of consumers in usurping corporate definitions of colour practice and offering new uses or interpretations
- The practice of colour forecasting as it evolved in different locales, cultures, and historical moments, and its relationship to design futures
- The transnational transfer and global circulation of colour theories and practices
- Colour in the fashion and beauty industries
- The impact of new technologies (e.g. colorimetry or digitalization) on colour in the design professions and in the fashion industries
- Colour, patriotism and national identity
- Colour in architecture, and at trade fairs and world's fairs
- The communicative aspects of colour in local, regional, national, and global discourses.

Please forward enquiries to:

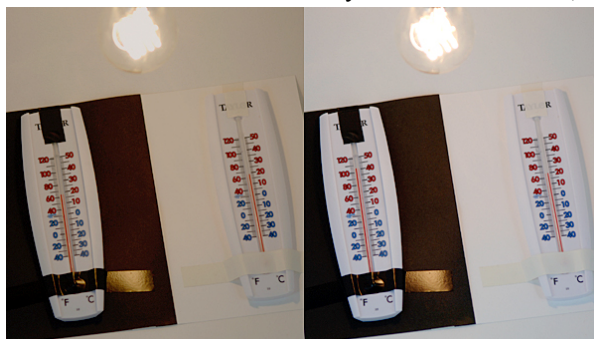
jdh@genesys-consultants.com. Submissions should be in the form of full papers of up to 8,500 words that adhere to the guidelines of the Journal of Design History along with an abstract of 300-400 words and a brief biography of up to 250 words. They should be submitted online via www.jdh.oxfordjournals.org, by 1 December 2011.

Papers for special issues will be subject to the usual double-blind refereeing and selection procedures of the Journal of Design History.

Metameric Blacks: A Color Curious Column

Ever wonder ... "would a dark color M&M melt faster than a light one?"

One of the most common questions I receive about color is about the relationship between the colors of objects and how fast, or how much, they heat up in the sun. An alternative involves which color of a popsicle or ice cream melts the fastest in the sun. (Chocolate will melt faster than vanilla due to the color. Chocolate with almonds will melt faster still due to the salt on the almonds, which lowers the freezing point of water.) I took this image of two identical thermometers mounted on white and black cardboard with white and black tape. After being stored in a cool dark place, both thermometers read the same temperature of about 20 deg. C (left) when the light was first turned on (shown in the dimmer image). However, after the light was on for a while you can see that the thermometer on the black background reads a significantly higher temperature of about 40 deg. C (right). This is because the black background absorbs a lot of light energy (that's why it looks black) and converts that energy into heat. The white background reflects most of the light and doesn't heat up as much.



So what does this have to do with melting M&Ms. Well, assuming that the colorants (chemicals giving a material its color) in the various M&Ms have no significant impact on its properties (see the website for a case where this assumption fails), then in a darkened room followed by a darkened mouth, all M&M colors will melt at an equal rate. More details about M&Ms melting can be found on the website.

Content of this column is derived from *The Color Curiosity Shop*, an interactive website allowing curious students from pre-school to grad-school to explore color and perhaps become interested in pursuing a science education along the way. Please send any comments or suggestions on either the column or the webpage to me at mdf@cis.rit.edu or use the feedback form at whyiscolor.org.

-Mark D. Fairchild

The Mystery of the Discolored Van Goghs

Los Angeles *Times*, February 14, 2011

It's hard to imagine some of Vincent van Gogh's signature works without the vibrant strokes of yellow that brightened the sky in "Starry Night" and drenched his sunflowers in color. But the yellow hues in some of his paintings have mysteriously turned to brown--and now a team of European scientists has figured out why.

Using sophisticated X-ray machines, they discovered the chemical reaction to blame--one never before observed in paint. Ironically, Van Gogh's decision to use a lighter shade of yellow paint mixed with white is responsible for the unintended darkening, according to a study published online Monday in the journal *Analytical Chemistry*.

"This is the kind of research that will allow art history to be rewritten," because the colors we observe today are not necessarily the colors the artist intended, said Francesca Casadio, a cultural heritage scientist at the Art Institute of Chicago who was not involved in the work.



"The Starry Night" by Vincent Van Gogh

You should have received your 2011 ISCC Membership Invoices in email already. If you did not, please contact Cynthia Sturke at isccoffice@cs.com or (703)318-0263

Note from the Editor – How You Can Help!

As I continue to develop the processes and strategies that work for me as the newsletter editor, the help I receive from others remains near the top of my list. I doubt anyone reading this thinks assembling the newsletter is easy or trivial. Given the quality of the product in the past, these are some large boots I seem to have stepped into. But it turns out, none of my predecessors worked alone, and now I am asking for help from you all.

One of the chief aspects defining the unique society we call the ISCC is the interconnection between many related organizations. To stay informed of all the happenings of these organization – our Member Bodies – we need an up-to-date calendar, both online and in this newsletter. The newsletter team needs a dedicated person willing to scour the web pages of the member bodies and extract interesting events that should be shared with the ISCC membership. Ideally, this is a job completed by everyone in ISCC, since in principle everyone is here because of a relationship through one or more of the member bodies. So all I am really asking is for you to send me the events that you already know about.

Related to upcoming events, send me short reports from your meetings. These will help spread the word for that meeting next year.

In summary, it would be very helpful for you to please send me:

- Upcoming events related to your professional organizations.
- Short reports from the meetings you have already attended. If you went, chances are it is interesting to someone else.
- Any tidbits on color that you find interesting. Who knows. I just might put it in for all to see and enjoy.

With everyone’s help, we can maintain a high-quality, relevant newsletter that the organization can be proud of.

Dave Wyble
 Editor, ISCC News
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ISCC News Issue #450 Mar/Apr 2011

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Newsletter Team

Cynthia Sturke, Mary McKnight, Mike Brill, YOU!

All submissions must be in English. Please submit materials by the 15th of each even numbered month.

So, you think you know the ISCC...

On a hint from a helpful newsletter contributor (thanks to Mark Fairchild), I went on a search to see what other organizations who could also rightfully claim the moniker “ISCC.” The results were varied and sometimes surprising. If there was a trend, I’d say sports and dogs. In no particular order, here’s what I found in a few minutes of surfing.



- International Skating Center of Connecticut
- IEEE Symposium on Computers and Communications
- International Society of Canine Cosmetologists
- International Society for Children with Cancer
- Invasive Species Council of California
- Intestinal Stem Cell Consortium



- Indiana Statistical Consulting Center
- Institute for the Study of Christianity and Culture
- International Sustainability and Carbon Certification
- International Solar Cities Congress
- Intercollegiate Student Chemists' Convention
- Irish Setter Club of Colorado



- Islamic Society of Carroll County
- Iowa State Sailing Club
- Idaho Soil Conservation Commission
- International Super-Cricket Committee
- Integrated Solar Combined Cycle

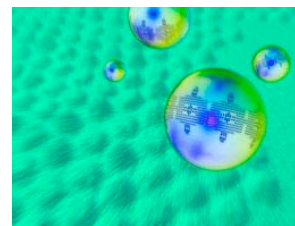
And these are just the non-profits, professional, and community organizations. If you start looking at for-profit companies and consortia The Google will just bury you. I leave you with the logo of what we all know is the one true ISCC.



Connect the Quantum Dots for a Full-Colour Image

Nature News Published online 20 February 2011

Ink stamps have been used to print text and pictures for centuries. Now, engineers have adapted the technique to build pixels into the first full-colour 'quantum dot' display--a feat that could eventually lead to televisions that are more energy-efficient and have sharper screen images than anything available today.



Engineers have been hoping to make improved television displays with the help of quantum dots--semiconducting crystals billionths of a metre across--for more than a decade. The dots could produce much crisper images than those in liquid-crystal displays, because quantum dots emit light at an extremely narrow, and finely tunable, range of wavelengths.

The colour of the light generated depends only on the size of the nanocrystal, says Byoung Lyong Choi, an electronic engineer at the Samsung Advanced Institute of Technology in Yongin, South Korea. Quantum dots also convert electrical power to light efficiently, making them ideal for use in energy-saving lighting and display devices. (www.nature.com/news/2011/110220/full/news.2011.109.html)

March/April 2011 Calendar

- Mar 22-24 2011 AATCC International Conference**, American Association of Textile Chemists and Colorists, Charleston, S.C., www.aatcc.org/ic/2011/index.cfm
- April 9-12 NAPIM 2011 Annual Convention**, National Association of Printing Ink Manufacturers, Doral Resort and Spa, Miami, Florida, www.napim.org/publicarea/convention2011/convention2011.aspx
- April 12-13 Matching and Control of Metallic and Pearl Colors**, Detroit Color Council 2-day short course. www.detroitcc.org/metallics11registration.doc
- Apr 27-29 4M Color Management: Multi-Media, Multi-Material Color Control**, ISCC and AATCC Meeting, Hilton Charlotte University Place in Charlotte, North Carolina, www.aatcc.org
- May 1-5 ANTEC 2011**, Hynes Convention Center and Boston Marriott Copley Place Hotel, Boston, MA, www.specad.org/index.php?navid=133
- May 1-5 ASPRS 2011: Ride On The Geospatial Revolution**, ASPRS, Milwaukee, Wisconsin, www.asprs.org/milwaukee2011/
- May 4 - 6, CORM2011**, NIST, Gaithersburg, Maryland, www.cormusa.org
- May 16-19 Archiving 2011**, IS&T, Salt Lake City, Utah, www.imaging.org/IST/conferences/archiving/
- May 15-29 Lightfair**, Philadelphia Convention Center, Philadelphia, PA, www.sid.org/conf/sid2011/sid2011.html
- May 15-20 50th International Symposium, Seminar, and Exhibition**, SID, Los Angeles Convention Center, Los Angeles, CA, www.sid.org/conf/sid2011/sid2011.html
- June 1 Inaugural, Canadian Colour Association**, Ontario College of Art & Design, Toronto, CA. Details on iscc.org.
- Jun 7-10 2011 AIC Midterm Meeting, Interaction of Color and Light**, Zurich, Switzerland, Organizer: Pro/colore, www.aic2011.org
- Jun 16 ASTM Special Conference on Retroreflection**, Marriott, Anaheim; Anaheim, CA US, www.astm.org
- Jun 22-23 ASTM E12 on Color and Appearance**, ASTM International Headquarters; West Conshohocken, PA US, www.astm.org
- Jun 28-30 ~~Sixth Oxford Conference on Spectroscopy~~ POSTPONED INDEFINITELY**
- Sept 23-24 3rd Annual Conference of the Society for Color and Appearance in Dentistry**, Wyndham Downtown Chicago, www.scadent.org/about-2011-meeting
- Nov 7 - 11 CIC20, Society for Imaging and Technology**, San Jose, California, www.imaging.org/IST/conferences/cic/index.cfm
- Nov 14-17 ASPRS 2011: Fall Pecora Conference**, Herndon, Virginia, www.asprs.org/pecora18/



ISCC 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.

Avian Technologies	www.aviantechnologies.com	603-526-2420
BYK-Gardner USA	www.byk.com/instruments	301-483-6500
Color Communications, Inc.	www.ccicolor.com	773-638-1400
Datacolor	www.datacolor.com	609-895-7432
Hallmark	www.hallmark.com	816-274-5111
Hewlett-Packard Company	www.hp.com	650-857-6713
Hunter Associates Laboratory, Inc.	www.hunterlab.com	703-471-6870
IsoColor Inc.	www.isocolor.com	201-935-4494
Chester F. Carlson Center for Imaging Science	www.cis.rit.edu	585-475-5944
Xerox Corporation	www.xerox.com	585-422-1282
X-Rite Incorporated	www.xrite.com	616-803-2113



ISCC Member Bodies

At its foundation, the ISCC is composed of many related societies. These societies, our Member Bodies, help the ISCC through small annual dues as well as maintaining a relationship with each organization's individual members. We frequently hold joint meetings to further the technical cross-pollination between the organizations.

If you belong to one of our member body organizations, we encourage you to work with ISCC and your society to further the connection. Contacting the ISCC President is a good place to start. If your organization is not on this list and you think it should be, the ISCC office can provide you with details about membership.

American Association of Textile Chemists and Colorists (AATCC)
 American Society for Testing and Materials International (ASTM)
 American Society for Photogrammetry & Remote Sensing (ASPRS)
 The Color Association of the United States, Inc. (CAUS)
 Color Marketing Group (CMG)
 Color Pigments Manufacturing Association (CPMA)
 Council on Optical Radiation Measurements (CORM)
 Detroit Colour Council (DCC)
 Gemological Institute of America (GIA)
 Graphic Arts Technical Foundation (GATF)
 Illumination Engineering Society of North America (IESNA)
 International Color Consortium (ICC)
 National Association of Printing Ink Manufacturers (NAPIM)
 Optical Society of America (OSA)
 The Society for Color and Appearance in Dentistry (SCAD)
 Society for Information Display (SID)
 Society of Plastics Engineers, Color & Appearance Div. (SPE)
 Society for Imaging Science and Technology (IS&T)