



# Inter-Society Color Council News

Issue 433

May—June 2008

## President's Column

Since the last newsletter, we have had a Board meeting, finalized the budget for the September meetings in Baltimore, and filled the program for the Black and White meeting in Portland in November. In this issue, I want to tell you about these developments and then close with a thought about the ISCC.

The Board had a two-hour conference call on May 29; all Board members but one were on the phone. One of the first things we did was confirm the results of the Board election. Joining the Board in September as President-Elect will be Frank O'Donnell of Sherwin-Williams, and as Directors, Barbara Martinson of the University of Minnesota,

Henri Debar of IsoColor and Dave Wyble of the Rochester Institute of Technology. Welcome to them all. The Board and I are looking forward to the contributions they will make to the Council

The other major items from the Board meeting had to do with Membership and Finances. Like most other professional societies, our membership has been declining, although it has shown odd peaks and valleys since 2000. The Membership committee is planning to get together and look at the options in the face of the trends, but also in light of the opportunities we identified. As chair of the Membership committee, Scot Fernandez has signed up to lead this effort, with inputs from Nurhan Becidyan and the rest of the committee.

In the last issue, I alerted you to the need to be vigilant about expenses this year. A review of operating expenses so far this year has confirmed this. I plan to work with Hugh Fairman and the rest of the Executive Committee to evaluate the situation and make recommendations. You can expect to hear more about this during the Business meeting during the Annual Meeting in Baltimore in September.

Our most significant activity is our meetings. This is where the three areas of color—science, industry and art—can come together for the exchanges that I have always felt are what set the ISCC apart from other organizations and make it unique. This is one of the major services we provide to our members, and beyond the members to a wider range of specialists and to the field of color at large.

We have some great meetings still to come this year. Cameron Miller, Carl Andersen and the Interest Group chairs have done an excellent job pulling together the program for the Annual Meeting, September 14-15 in Baltimore, and the one-day Special Topics meeting on Safety Colors that follows it.

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The final touches are being made to the program. While it will appear in the next issue of the newsletter, you can always go to our website [www.iscc.org](http://www.iscc.org) for the most up-to-date information on the meetings. The registration form will also be there. Just to give an idea of what you'll hear in Baltimore, there will be papers on teaching color, spectral reproduction, camouflage and a natural-language interface to color matching.

One practical note: the website has information on hotel registration. The negotiated rate for the Baltimore meetings at the Tremont Suite Hotels is only available until August 13. It's a great location and a short walk from the Inner Harbor.

After the Baltimore meetings, we will have one more meeting this year—the Black and White Special Topics meeting November 15 in Portland. It will cap 10 days of color-related meetings at the Hotel Benson in Portland, starting with three days of ICC meetings beginning Thursday, November 6, then the IS&T/SID Color Imaging Conference the week of November 10-14, followed by a special symposium honoring Bob Hunt on Friday afternoon, November 14, and then the Black and White meeting on Saturday, Nov. 15. I have to point out that all three organizations—the ICC, IS&T and SID—are member bodies of the ISCC.

The response to the meeting has been remarkable, both from speakers and from all those who are planning to attend. We already have a full agenda; see the preliminary list elsewhere in this newsletter. For the next few weeks we will accept submissions from those who expressed interest in participating and were looking to put together a contribution. Ann Laidlaw, Danny Rich and I have been organizing the meeting—they have done a terrific job.

Let me close with something Ann said during one of our planning meetings. She pointed out how at ISCC meetings, like the Black and White meeting, she meets people she would never come across in her professional life. Although they are working on different problems, there is the opportunity for shared solutions. I think that's an apt description of the ISCC and what it makes possible: different problems, shared solutions in color.

I look forward to seeing you in Baltimore.

*Robert Buckley*  
ISCC President

## HUE ANGLES

(Send contributions to Michael H. Brill, [mbrill@datacolor.com](mailto:mbrill@datacolor.com))

After last issue, it's time for some serious color science, hence...

### Beer's-law Dyes and the Purple Limit

Everyone who takes a colorimetry course learns that, when you pile on layers of a light-transmitting material (multiplying the transmission spectrum by itself, in an action called Beer's law), the transmitted light gets dimmer and more nearly monochromatic, and its chromaticity approaches the spectrum locus. The limiting wavelength on the spectrum locus is the maximum-transmission wavelength of the original (unit-thickness) transmission curve. Starting from that idea, how can we design a Beer's-law-unit-thickness transmission curve for a material such that greater and greater thickness of the material, trans-illuminated by the same light, would approach arbitrarily closely to a given chromaticity point on the line of purples?

Here's how. First, design a U-shaped transmission curve with its two maxima at the ends of the visible spectrum. As you multiply this spectrum by itself (i.e., increase its thickness), the bigger maximum will eventually dominate and the chromaticity will go to the blue or red end of the spectrum—the end with the global maximum of the U. So far we have reached (arbitrarily closely) only two points on the line of purples.

Now design a U-shaped transmission curve with equal maxima at the ends of the spectrum. As you multiply this spectrum by itself, neither maximum ever dominates, so the chromaticity must move to a mid value on the line of purples (whose location depends on the illuminant spectrum at the endpoint wavelengths of the visible spectrum). This is what I call the "Buridan's ass" (or BA) point, named after the donkey invented by Jean Buridan (1300-1358) that starved to death when placed exactly equidistant from two bales of hay. (See [http://en.wikipedia.org/wiki/Buridan's\\_ass](http://en.wikipedia.org/wiki/Buridan's_ass).) For the transmission curve, the analogue of starvation is balance between the spectrum-locus ends.

Finally, design a U-shaped transmission curve

with maxima that are different by only, say, one part in  $10^{10}$ . As you multiply this spectrum by itself, initially neither maximum dominates, so the chromaticity moves toward the BA point. But eventually, that 1 part in  $10^{10}$  breaks the symmetry, and the transmission rapidly moves, from (very) near the line of purples at the BA point, to one end of the spectrum. A single dye can be made, by self-multiplication, to come arbitrarily close to all the purple-line points on one side of the BA point. Another dye with a similar imbalance the other way will do the same for the other side of the BA point. QED.

Let's simulate the filter algebra using Gaussians and inverse Gaussians, equal-energy illuminant, and 1931 CIE color-matching functions. Figure 1 shows the unit-thickness transmission spectra, and Fig. 2 shows the chromaticity trajectories of these spectra as thickness is increased. The BA point is given by

$$X_{BA} = [X(\ddot{\lambda}_e) + X(\ddot{\lambda}_b)] / [X(\ddot{\lambda}_e) + X(\ddot{\lambda}_b) + Y(\ddot{\lambda}_e) + Y(\ddot{\lambda}_b) + Z(\ddot{\lambda}_e) + Z(\ddot{\lambda}_b)]$$

$$Y_{BA} = [Y(\ddot{\lambda}_e) + Y(\ddot{\lambda}_b)] / [X(\ddot{\lambda}_e) + X(\ddot{\lambda}_b) + Y(\ddot{\lambda}_e) + Y(\ddot{\lambda}_b) + Z(\ddot{\lambda}_e) + Z(\ddot{\lambda}_b)].$$

Here,  $\ddot{\lambda}_b$  and  $\ddot{\lambda}_e$  are the wavelengths at the beginning and end of the visible spectrum. I chose  $\ddot{\lambda}_b = 380$  nm and  $\ddot{\lambda}_e = 700$  nm, so BA is at (0.5458, 0.1776).

Note that the BA point is sensitive to the choice of  $\ddot{\lambda}_b$  and  $\ddot{\lambda}_e$ . If I change  $\ddot{\lambda}_e$  to 720 nm, then BA moves to (0.3615, 0.0920). Amazingly, the chromaticity at  $\ddot{\lambda}_e$  stays the same to five decimal places!

After reading this essay, Jack Ladson asked me, "Did Buridan recognize that repeated multiplication of the spectrum ends in black?" I'm sure Buridan, like other philosophers, recognized analogously that all life ends in death, but it matters from which direction you enter that state. In both cases, given enough light, you can see the direction.

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**Question for discussion:** For a real filter, does Beer's law break down so the chromaticity of a light

shone through increasing thickness of the filter fails to approach the spectrum locus?

Michael H. Brill

Datacolor

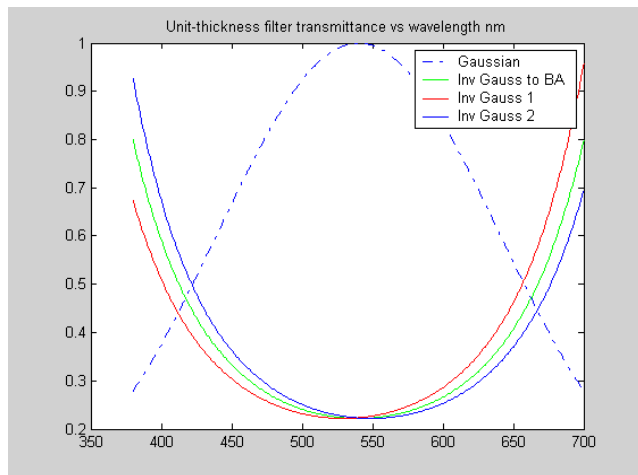


Figure 1

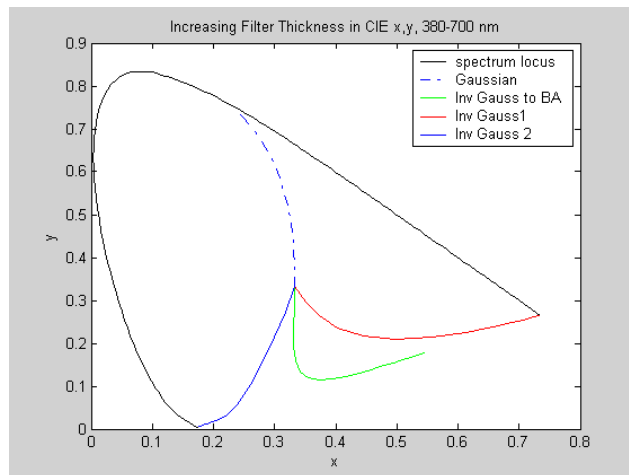


Figure 2

## Member News

Send Contributions to Cynthia Sturke ([isccoffice@cs.com](mailto:isccoffice@cs.com))

### FSCT Membership and Board Greenlight Merger with NPCA

The National Paint and Coatings Association (NPCA) and the Federation of Societies for Coatings Technology (FSCT), and ISCC Member Body, are moving forward with a merger of the two organizations following a majority vote by FSCT members endorsing the merger plan. In February, NPCA and FSCT signed a Memorandum of Agreement, outlining the details of a prospective merger of the two organizations. The agreement framed a "governance merger" that will consolidate the governance, management, and administrative functions of both groups under NPCA, while preserving each organization's separate identities, operations, functions, and member services. NPCA and FSCT will remain as separate organizations managed through a common governing structure. All aspects of the merger should be completed by June 3, 2008, at which time the new FSCT Board of Directors will convene for its first meeting.

### From the ISCC Office.....

Reminder invoice notices are going out for your ISCC 2008 dues. If you have not yet paid, please consider renewing your membership in order to receive the newsletter.

Additionally, our yearly directory will be issued electronically for all paid members very soon. To be included in this mailing, be sure to send in your dues as well as an updated email.

The office still has a limited number of ISCC white polo shirts in M, L, XL and LLX. The cost is \$20.00 for a nice quality polo shirt. We also have a number of Color space puzzles which are available at \$15.00 each. We also have the commemorative ISCC 75<sup>th</sup> Anniversary pin and CD combo available at \$30.00.

Have a colorful summer and take time to smell the roses!

Cynthia Sturke

## Jean Bourges

August 23, 1920 – April 22, 2008

Jean Bourges, 87, President and CEO of Bourges Color International, died peacefully in her sleep April 22 at her new home in Mahopac NY, after making long and solid history in graphic communications. In 2003 she was named the outstanding woman in graphic arts, receiving the prestigious PIA/GATF *Naomi Berber Award*. A lifelong New Yorker, she lived in Manhattan until last year. She was “born to the trade”: Her mother Jesse was an artist, her father Albert a photoengraver, and her uncle Fernand a famous photographer.



A pioneer in advocating standards for color and other graphic arts segments, Jean was a long-time member of the graphic arts technical standards committee CGATS, a former chair of ISCC’s Art, Design & Psychology Interest Group, a member of the prestigious BRIDG’S Committee (Basic Requirements for International Design & Graphic Solutions), an active member of the IGAEA (International Graphic Arts Education Association), a charter member of NAMTA (National Art Materials Trade Association), a member of TAGA (the Technical Assn. for the Graphic Arts), and a lifetime member of the New York Art Directors’ Club.

Jean started her career over 50 years ago as an art director for Joubert Cie, a popular cosmetics company. She not only created the ideas, but also handled production matters from the original art to the finished product—advertising, poster displays, packaging, etc.—with the most important factor being accuracy in color matching.

After a brief hiatus to serve in Tennessee with the U.S. Army Map Service in WWII, Jean returned to New York and worked alongside her father in a unique production studio that made transparent color sheets. Many years before, he had invented transparent Ben Day sheets for artists to use on art copy so the quality of their work would not rely on the skill of the engraver. Now he felt it was time to address color, but what colors? To Albert Bourges the

answer was obvious. In 1918 he had created the Bourges Color Wheel, derived from red, yellow and blue (later magenta, yellow, cyan) process printing inks, and he believed that nothing more was needed. But Jean insisted that more colors were needed for the sheets to be accepted by artists. After months of often heated arguments, 10 colors were selected, including colors that artists were already using.

Artists were familiar with a variety of materials, including sheets of color paper, but Bourges Color Sheets were different. They were transparent and used the actual printing inks. This further connected the art process to the final printed page. But it did not happen easily. Jean and her father, until his death in 1955, traveled all over the country speaking to art and printing groups, trade shows and schools, about why a new practical approach to color was necessary. Her first book, “How to Prepare Practical Art for Reproduction” (1951), was well received.

The Bourges Color Sheets were effective, but hard to manufacture and expensive for the average artist. When computers entered the mainstream, all that Bourges could do with color sheets could be done even better using digital technology. Meanwhile, international color standards for process printing had arrived. The software had not been developed yet, but Jean carefully studied the existing Bourges palette, reviewed all the colors, made some changes, and then translated the colors into the new internationally approved CMY database. This work took years, but finally established a path between the artist’s concept and digital output.

After her first patent was granted for a color value classification system, Jean authored her second book, *Color Bytes—Blending the Art and Science of Color* (1997). In it she told the story of her family’s graphic arts history. The book was digitally printed and introduced at Graph Expo by the GATF. Then a seminar was held to introduce “Color Education ’99”—Jean’s proposed program to study the need and value of teaching the basics of this new printable *color order base* at all educational levels. At the end of her life, Jean was working on “A Color Primer” for the early grades, with other teaching texts planned to follow.

Jean is survived by her two sons, Richard and John, and by her granddaughter Samantha Jean—who now attends SUNY at Oneonta seeking a degree in Fashion Merchandising.

**Black & White Conference**  
**Saturday, November 15, 2008**  
**Portland, Oregon**

The technical program for the ISCC/IS&T Black & White Special Topics Meeting is almost complete. The preliminary list of speakers and presentations follows. Plan now to join us for this unique technical exploration of issues affecting the assessment and measurement of black and white images and objects.

- *Perceived and Device Black and White as Reference Colours in Image Technology*, by Klaus Richter (Berlin University of Technology)
- *Perceptual Assessment of Blackness*, by Reid Clouts (North Carolina State University)
- *Fluorescent Excitation from White LEDs*, by Dave Wyble (Rochester Institute of Technology)
- *AATCC UV Calibration Textile Standard*, by Roland Connelly (X-Rite)
- *IR2 and IR3 Calibration Standards*, by Pat Robertson (Technidyne Corporation)
- *Designing the Neutral Scale – Noise and Perception*, by Jack Holm (Hewlett Packard)
- *New Standards on “Indoor Daylight”*, by Byron Jordon (National Research Council of Canada)
- *Estimating the Spectral Reflectance of Fluorescent Offset Papers for Varying Illuminants*, by Eva-Maria Löffler (Abteilung PrePress-Reproduktion)
- *The Characteristics of Optical Brightening Agent Fluorescence Emission and How they Relate to Methods for UV-cut Measurement*, by Brian Gamm (Rochester Institute of Technology)
- *Evaluation of UV Calibration and Whiteness Formulae*, by Ye Chen (University of Leeds)
- *Gärtner-Griesser Coefficients for UV Calibration for CIE Illuminant D50 Simulators*, by Veronika Lovell (Sun Chemical)
- *The Evolution of ISO 2469 for International Agreement on Optical Properties for Pulp and Paper*, by Joanne Zwinkels (National Research Council of Canada)

The current version of the program is available on the ISCC website [www.iscc.org](http://www.iscc.org). Updates and the registration form will also be posted on the web site when they are available.

**Inter-Society Color Council  
2008 Annual Meeting and Special Topic Symposium  
September 14 – 16, 2008  
Baltimore, Maryland**

ISCC will hold its 2008 Annual Meeting and Expert Symposium on Safety Colors at the Tremonts Suite Hotels, 222 Saint Paul Place, Baltimore, Maryland. A draft schedule is shown below. More details are on the web site, [www.iscc.org](http://www.iscc.org).

**Sunday September 14, 2008  
ISCC Annual Meeting, Day 1**

08:00-09:00 Registration and light breakfast snack  
09:30-10:30 ISCC Project Committee Meetings:  
10:30-11:00 Refreshment break  
11:00-11:15 Welcoming address and Opening Remarks  
Robert Buckley, Xerox,  
ISCC President  
Carl Andersen, FHA,  
General Co-Chair  
Cameron Miller, NIST,  
General Co-Chair  
10:30-11:00 Coffee break  
11:15-12:00 Color Flashback  
12:00-1:00 Lunch on your own  
01:00-2:30 Interest Group III Session  
02:30-3:00 Refreshment break  
03:00-05:00 Interest Group II Session  
06:00-08:00 Reception

**Monday September 15, 2008  
ISCC Annual Meeting, Day 2**

08:00-09:00 Registration and light breakfast snack  
09:00-10:15 Interest Group II Session  
10:15-10:45 Refreshment break  
10:45-12:00 Interest Group II Session

**Monday September 15, 2008  
ISCC Annual Meeting, Day 2, Cont.**

2:00-01:15 Awards Lunch at the hotel  
01:30-02:30 Interest Group I Session  
02:30-03:00 Refreshment break  
03:00-04:00 Interest Group I Session  
04:00-05:00 ISCC Business Meeting  
05:00-07:00 Expert Symposium Reception

**2008 Expert Symposium,  
Tuesday September 16, 2008**

07:30-08:30 Registration and light breakfast snack  
08:30-08:45 Welcoming address and Opening Remarks  
Robert Buckley, Xerox,  
ISCC President  
Carl Andersen, FHA,  
General Co-Chair  
Cameron Miller, NIST,  
General Co-Chair  
08:45-10:00 Presentations  
10:00-10:30 Coffee break and Exhibitors  
10:30-11:30 Presentations  
11:30-12:00 Exhibitor 3-minute introductions  
12:00-1:00 Lunch  
01:15-2:00 Presentations  
02:00-2:30 Refreshments and Exhibitors  
02:30-04:30 Presentations

## COLOR RESEARCH AND APPLICATION

### In This Issue, June 2008

For our first article, let's jump right into color difference detection and evaluation. Most of the research in developing color difference formulae have involved the use of patches of color that are as ideal (uniform and non-textured) as possible. However, many applications use these color difference metrics to predict observer responses in other situations, such as searching for an object in within a complex background or for the evaluation of images. Therefore understanding the basic mechanisms underlying the perception of colored noisy images is required in order to be able to predict the performance of a human observer in target detection and recognition and the design of false-color systems that optimize these tasks. In "The perception of static colored noise: detection and masking described by CIE94," Marcel Lucassen, Piet Bijl, and Jolanda Roelofsen, describes two psychophysics experiments on the detection of static noise: the detection of colored noise on three appearance axes, and the recognition of the orientation of a test symbol. The authors have successfully adjusted the parameters of the CIE94 color difference to describe their results quantitatively, thus revealing the interactions between color axes.

The lighting industry uses the Color Rendering Index, or CRI as it is commonly called, to indicate the quality of a light source. The CRI was developed through the efforts of scientists and the lighting industry and codified in a CIE publication in the 1960s. It is identified in CIE Publication 13 which has had several updates (the current form is CIE 13.3:1995 Method of measuring and specifying colour rendering of light sources New edition.) Our next article, "Color Rendering: A tale of two metrics" looks at the advantages and drawbacks of the current CRI. Then Mark Rea and Jean Paul Freyssinier-Nova suggest a gamut area index (GAI) to be used in conjunction with the CRI. The use of the two indices together would increase our ability to determine how natural and how vivid objects would be under different lighting conditions, and also how easily shifts in coloration could be detected.

Our next article is also concerned about how people see color. No everyone fits into the "nor-

mal" group when it comes to viewing colors. In "Detection of color combinations confusing to dichromats and modification to achieve universal design," Shigeki Nakauchi and Tatsuya Onouchi consider the plight of color-deficient observers. They describe a color rendering method that detects color combinations in an image that may be confused by dichromats. The method also suggests modifications of the images so that the colors in the image will be easily discernable by both normal and dichromatic observers (both protanopes and dueteranopes). The aim is to achieve a universal design that a vast majority of people will be able to perceive.

Next we move into the area of color reproduction. To transfer color from one device to another, such as a camera or scanner to a printer, the color response of the devices need to be characterized accurately. This often involves examining the device's response to many colored targets, which can be tedious and time consuming. In our next article, Ali Aslam and Graham Finlayson present an elegant technique for optimal reduction of color calibration charts by means of integer programming. Their approach to reduce the characterization target is based on an approximation of the CC' transform by reducing the contributing individual vectors in C. In contrast to existing techniques, the authors claim that with their approach a global optimum target is found by transforming the problem into an integer programming problem. It is also shown that the proposed approach works quite well in practice. For a digital camera, the same characterization accuracy can be obtained with an optimal choice between 9 and 13 of the 24 color patches of a Kodak Color Checker. Also the obtained tristimulus values are quite close to the measured values. Do not miss, "Integer Programming for Optimal Reduction of Calibration Targets."

From color reproduction let us step back to color production. The color of most materials is produced by the selective absorption and reflection or transmission of radiation in the visible section of the electromagnetic spectrum. However, with a little thought probably all of us can think of instances where color is produced in other ways. How about soap bubbles, or the colors produced in a slick of oil on water, or those on certain fish or butterflies? The colors that I just mentioned, we call "interference colors" because the means of producing the color is by the



reinforcement or destructive cancellation of beams of light traveling along the same path. In our next article “Interference colors of thin oxide layers on titanium,” Maria Vittoria Diamanti, Barbara Del Curto, and MariaPia Pedeferra discuss the color properties of different titanium oxide films, obtained by means of anodic oxidation. The color of these oxides varies with film thickness, since it is due to light interference phenomena taking place at the metal-oxide-air interfaces. The results of these analyses were related to the oxide structure and the oxide thickness.

In the last issue we had the sad announcement of the death of Tarow Indow, and I mentioned that an article he had authored had been accepted just a week before his death. In this issue we have that article. “Reflectance Spectra of Munsell Standard Chips and Their Appearance.” Prof. Indow with his coauthor, A Kimball Romney, presents the results of two different methods for representing information in reflectance spectra of the Munsell standard chips that relates to their appearance. In one method, singular value decomposition is applied to the spectrum of light reflected from a chip under D65 illuminant. When this is combined with the results of human assessment experiments they obtain the principal hue components in Munsell Hue (redness, yellowness, greenness, and blueness). The second method is multiple regression of the matrix of the spectral power distribution to the activities of three types of cones in the retina, thus determining the appearance of Munsell Hue. From the comparison of the two results, it is noted that the characteristic stimulus that determines the appearance of the chips is captured in the reflectance spectra of the chips themselves, not in the spectra of the reflected light under a specific illumination. The authors state that the main purpose of this article is to show the possibility of these types of comparisons.

Our last research article is “Color constancy from invariant wavelength ratios: The empirical spectral mechanism” by Ralph W. Pridmore. This article describes an empirical study of the regularity in the way that dominant wavelengths of corresponding colors shift under changes in illuminant spectrum. In this study, Mr. Pridmore analyzes published data on corresponding colors and complementary colors in search of a psychophysical mechanism of color constancy. To quote the author, “the adaptational

model thus found is remarkably simple.”

In the Communications and Comments section, Yoshinobu Nayatani and Hideki Sakai discuss the “Confusion between Observation and Experiment in the Helmholtz-Kohlrausch Effect.”

Also in this issue we have two book reviews: Michael Brill reviews *Color Constancy* by Marc Ebner and Robert Hirschler reviews *Utazásaim Színországban (My travels in the realm of colors)* by Antal Nemcsics. I must warn you that the second book is in Hungarian. Also, mentioned is a new publication, CIE 182:2007 Calibration Methods and Photoluminescent Standards for Total Radiance Factor Measurements.

Scot Fernandez gives a report on the 2007 Annual Meeting of the ISCC and also from the ISCC come announcements about their 2008 Annual Meeting and a Special Topics Meeting on Black and White.

We end with a News item that introduces CIMET, a new two years master program entitled Color in Informatics and Media Technology. CIMET is part of the prestigious Erasmus Mundus program. The consortium of the University of Saint-Etienne (France), Gjøvik University College (Norway), the University of Granada (Spain), and the University of Joensuu (Finland) invites visiting scholars and students to participate. Make sure you read about it.

*Ellen Carter*  
*Editor, Color Research and Application*

## Proposals for AIC Interim Meetings Approved

The AIC executive committee approved the proposals for the Interim Meeting 2010 in Mar del Plata, Argentina, on the theme “Color and Food: From Production to Consumption,” and for the Midterm Meeting 2011 in Zurich, Switzerland, on the theme “Staging Colour.” The details of both meetings were developed at the general assembly. In addition updated presentations of the Interim Meeting 2008 in Stockholm, Sweden, and the 11th Congress 2009 in Sydney, Australia were presented. Suggestions for meetings for 2012 and 2013 were received from Japan and Great Britain.

## CALENDAR

Please send any information on Member-Body and other organization meetings involving color and appearance functions to:

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[isccoffice@cs.com](mailto:isccoffice@cs.com) website: [www.iscc.org](http://www.iscc.org)

### 2008

- Jun 24-27**      **Archiving 2008**, Society for Imaging Science and Technology, Bern, Switzerland, 703-642-9090, [www.imaging.org/conferences/](http://www.imaging.org/conferences/)
- Jul 7-11**        **Division 2, CIE Symposium (Advances in Photometry and Colorimetry) and Division 2 Meetings**, INRIM, Torino, Italy, [cie2.nist.gov/](http://cie2.nist.gov/)
- Sep 14-15**      **Inter-Society Color Council (ISCC) 2008 Annual Meeting**, Baltimore, Maryland, 703-318-0263, [www.iscc.org](http://www.iscc.org)
- Sep 16**         **ISCC Special Topics Symposium "Perception and Measurement of Safety Colors,"** Baltimore, Maryland, 703-318-0263, [www.iscc.org](http://www.iscc.org)
- Sept 21-23**    **Color and Appearance Division RETEC® 2008 Conference**, SPE Color & Appearance Division (SPECAD) & Detroit Colour Council (DCC), Hyatt Regency, Dearborne, Michigan, [specad.e-xyn.com/index.php?navid=101](http://specad.e-xyn.com/index.php?navid=101)
- Oct 15-17**     **International Coatings Expo, ICE 2008**, Federation of Societies for Coatings Technology, Lakeside Center, McCormick Place, Chicago, IL, 610-940-0777, [www.coatingstech.org/Programs/index.cfm?event=ICEAttendeeInfo](http://www.coatingstech.org/Programs/index.cfm?event=ICEAttendeeInfo)
- Nov 10-14**    **Sixteenth Color Imaging Conference**, Society for Imaging Science and Technology, and Society for Information Display, The Benson Hotel, Portland, Oregon, [www.imaging.org](http://www.imaging.org)
- Nov 15**        **ISCC/IS&T Special Topics Meeting**, Inter-Society Color Council and Society for Imaging Science and Technology, The Benson Hotel, Portland, Oregon, 703-318-0263, [isccoffice@cs.com](mailto:isccoffice@cs.com)
- Nov 17-20**    **The 17th William T. Pecora Memorial Remote Sensing Symposium**, The Imaging and Geospatial Information Society (asprs), Adams Mark Hotel, Denver, CO, [www.asprs.org/pecora17/index.php](http://www.asprs.org/pecora17/index.php)

### 2009

- Jan 21-23**      **ASTM E12, Color and Appearance**, Embassy Suites Hotel; Ft. Lauderdale, Florida, [www.astm.org](http://www.astm.org)
- Mar 10-12**     **AATCC's International Conference (IC)**, Hilton Myrtle Beach Resort, Myrtle Beach, SC, 919-549-8141, [www.aatcc.org/ice/index.cfm](http://www.aatcc.org/ice/index.cfm)
- Sept 27-Oct 2** **AIC 11th Congress**, Sydney, Australia, Organizer: Colour Society of Australia, Contact: Nick Harkness, [www.aic2009.org](http://www.aic2009.org)
- Jun 23-25**     **ASTM E12, Color and Appearance**, American Society for Testing and Materials, National Institute of Standards and Technology, Gaithersburg, MD, [www.astm.org](http://www.astm.org)

## AIC 2009

The Colour Society of Australia is organizing the 11th AIC Congress. It will be held in Sydney, Australia September 27 – October 2 at the Scientia Campus Conferencing Centre at the University of New South Wales. The topics of the technical program as detailed at [www.conferencing.unsw.edu.au](http://www.conferencing.unsw.edu.au) are:

- A. Colour in nature,
- B. Colour physics – light sources, optics,
- C. Colour chemistry – colorants, dyestuffs and pigments,
- D. Colour vision – physiology, neurology,
- E. Colour measurement,
- F. Applications of colour science – food, medicine, forensics,
- G. Colour imaging – reproduction, management, vision models,
- H. Colour psychology – perception, emotion,
- I. Colour communication – meanings, semiotics, language,
- J. Colour theory – history, philosophy,
- K. Colour in art, design and the built environment,
- L. Colour in textiles, fashion and cosmetics,
- M. Appearance measurement – surface quality, texture, gloss,
- N. Colour education.

### Publications Available from ISCC Office

**ISCC 76th Annual Meeting Program and Abstracts**, ISBN 978-1-4243-4273-0 \$25.00\*

**Color and Light** by Fred W. Billmeyer Jr. & Harry K. Hammond, III. Authorized reprint from: ASTM Manual 17, Copyright 1996, ASTM International, 100 Bar Harbor Dr., W. Conshohocken, PA 19428.

\$5 ea or 20 copies/\$50.00

**Demystifying Color** by Bob Chung, 11 pages. Discusses and explains ten myths about color.

\$5 ea or 20 copies/\$50.00

**ISCC 75th Anniversary Commemorative CD and Pin** \$30\*

**Guide to Material Standards and Their Use in Color Measurement (ISCC TR-2003-1)** \$50\*

\*Plus shipping and handling

## RIT Professor Hosts Color Management Webinar

Bob Chung, Gravure Research Professor in RIT's School of Print Media, conducted a one-hour free webinar on May 8. The webinar was broadcast live from the RIT campus and had one hundred participants from around the world. The Adobe Connect-powered webinar was offered as a part of RIT's color printing outreach effort.

The Webinar is only one of several training opportunities that RIT provides for the printing and imaging industries. See [www.seminars.cias.rit.edu](http://www.seminars.cias.rit.edu) for more details on the training programs as well as the visuals for the Color Management Webinar.

## Colour Design & Creativity

The Society of Dyers and Colourists is publishing an online journal, Colour: Design & Creativity, for the professional and academic design community. The journal aims to create a forum for professionals from a diverse range of disciplines. See [www.colour-journal.org/static/issues.htm](http://www.colour-journal.org/static/issues.htm) for the first two issues.

### Advertising Policy

The ISCC advertising policy for the ISCC News is as follows: Pre-paid color-related advertising will be accepted 30 days in advance of the publishing date.

The rates are:

**\$100 business card-size \$250 1/4 page**

**\$500 1/2 page \$1,000 full page**

The editor reserves the right to determine the acceptability of the advertising. A 20% discount is available for a yearly contract.

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All submissions must be in English. Please submit materials by the 15th of each even numbered month. Materials submitted later may be printed in the following issue.

## ISCC Sustaining Members

Avian Technologies	<a href="http://www.aviantechnologies.com">www.aviantechnologies.com</a>	603-526-2420
BYK-Gardner USA	<a href="http://www.bykgardner.com">www.bykgardner.com</a>	301-483-6500
Ciba Specialty Chemicals	<a href="http://www.cibasc.com">www.cibasc.com</a>	302-633-2042
Color Communications, Inc.	<a href="http://www.ccicolor.com">www.ccicolor.com</a>	773-638-1400
Datacolor	<a href="http://www.datacolor.com">www.datacolor.com</a>	609-895-7432
DuPont Performance Coatings	<a href="http://www.dupont.com">www.dupont.com</a>	248-583-8345
Hallmark	<a href="http://www.hallmark.com">www.hallmark.com</a>	816-274-5111
Hewlett-Packard Company	<a href="http://www.hp.com">www.hp.com</a>	650-857-6713
Hunter Associates Laboratory, Inc.	<a href="http://www.hunterlab.com">www.hunterlab.com</a>	703-471-6870
IsoColor Inc.	<a href="http://www.isocolor.com">www.isocolor.com</a>	201-935-4494
JDS - Flex Products	<a href="http://www.jdsu.com">www.jdsu.com</a>	707-525-7007
Konica Minolta	<a href="http://www.konicaminolta.us">www.konicaminolta.us</a>	201-574-4000
Pantone, Inc.	<a href="http://www.pantone.com">www.pantone.com</a>	201-935-5500
PPG Industries, Inc.	<a href="http://www.ppg.com">www.ppg.com</a>	724-274-3532
X-Rite	<a href="http://www.x-rite.com">www.x-rite.com</a>	800-248-9748
Xerox Corporation	<a href="http://www.xerox.com">www.xerox.com</a>	585-422-1282

## ISCC Member Bodies

[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 \(DCC\)](#)  
[Federation of Societies for Coatings Technology \(FSCT\)](#)  
[Gemological Institute of America \(GIA\)](#)  
[Graphic Arts Technical Foundation \(GATF\)](#)  
[Illumination Engineering Society of N. America \(IESNA\)](#)  
[International Color Consortium \(ICC\)](#)  
[National Association of Printing Ink Manufacturers \(NAPIM\)](#)  
[Optical Society of America \(OSA\)](#)  
[Society for Information Display \(SID\)](#)  
[Society of Plastics Engineers, Color & Appearance Div.\(SPE\)](#)  
[Society for Imaging Science and Technology \(IS&T\)](#)  
[Technical Association of the Graphic Arts \(TAGA\)](#)

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