



Inter-Society Color Council News

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July/August 2002

ISCC Announces the 2003 Meeting Line-up

Start making plans now for the year 2003 by marking your calendars for the ISCC's two conferences.

March 9-11, 2003 in Philadelphia is the place to be in order to attend the ISCC's Williamsburg Conference entitled "Industrial Color Solutions". Ralph Stanziola and John Locke have worked hard to put together an interesting and thought provoking meeting for those in the color field. (The conference will be especially "colorful" as Philadelphia will be in the midst of their spectacular Flower Show.) Check page three for the line-up of speakers for this event. This is a conference NOT TO MISS!

Abstract deadline: August 29, 2002

April 13-16, 2003 in Chicago are the dates to attend the spectacular SCAI/ISCC Joint conference entitled "Color and Appearance Instrumentation". This conference is sure to be a sell-out. See more details on page four of this issue. Plan to make a difference and join your peers at this meeting. Romesh Kumar, chair of this event promises it to be a memorable experience!

Abstract deadline: October 18, 2002

The ISCC strives to present outstanding programs to the color world, bringing together color specialists from a variety of color-related disciplines.

Expand your personal spectrum and attend them both!

Make 2003 a color filled year

courtesy of the Inter-Society Color Council!

ISCC Executive Officers

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A Correction to the Last Issue

Mark D. Fairchild was presented with the prestigious MacBeth Award at the ISCC 2002 Annual Meeting in Detroit, MI. His full acceptance speech appears in the May/June Issue (#397) of the ISCC News beginning on page 7. One portion of a paragraph was inadvertently left off and is reprinted here.

ISCC News #397

pg. 9, para 2

Another recipient has recently left us. The 1986 award was presented to Max Saltzman for not only his work on *Principles of Color Technology*, but for his post-retirement research on the study, identification, and conservation of ancient dyestuffs in textiles. Max was a unique character who taught me many practical aspects of color technology in my brief encounters with him.

My apologies to Mark.

Cynthia J. Sturke, Assoc. Ed.

From the Office.....

I know you will all be pleased to finally receive your ISCC 2002 Directory. This particular directory contains only the ISCC Membership Contact Information and the Officers, Board of Directors, Committee Chairs, Honorary Members. The remaining portions of the Directory (Constitution and By-Laws, Student Chapters, Award Recipients, Past Directors and Officers) will be available shortly on our website <http://www.iscc.org>.

Just before we went to press, we were informed of two new Interest Group Vice-Chairs: Jim Grady has accepted the position of Interest Group I Vice-Chair and Gary Regulski has taken on the position of Vice-Chair of Interest Group II. Milt Hardt is the new Chair of Interest Group I and Britt Nordby has agreed to continue on a Chair of Interest Group II and Meg Miele and Georgia Kalivas continue in their respective positions as Chair and Vice Chair of Interest Group III. Michael Brill is the new Interest Group Coordinator and Project Committee Chair. They are all an integral part of our ISCC Meetings and their dedication is much appreciated!

I hope you are all enjoying your summer - the blue skies, the golden sunsets and the (hopefully) green grass!

Cynthia J. Sturke

ISCC Office Manager

Call For Papers

ISCC Conference on Industrial Color Solutions

March 9-11, 2003, Philadelphia University

The organizers of the 2003 ISCC Williamsburg type conference are looking for papers for the conference. The theme for this year's meeting is Industrial Color Solutions. Papers will be solicited from all major industrial segments such as Coatings, Textiles, Plastics, Paper, and Printing. Topics of interest will include Tolerancing, Formulation Practices, Process and Product Control Issues, Color Communication and Specification.. We hope to provide a valuable forum for in depth discussion of the challenges and issues that you face linking the fundamentals of colorimetry and color science to the realities and pressures of the production environment. Deadline for abstract (one page) submissions August 29, 2002. **NO WRITTEN PAPER IS REQUIRED.** As of this date, the following industrial specialists have committed to give papers:

Speaker	Company	Topic
John Bantjes	Mead, Specialty Paper Div.	Color control of decorative laminates
Roland Connelly	SheLyn Corp. Latest developments.	Problems of measuring optically brighten materials.
Larry De Poali	Uniform Color Co.	Automotive interior parts submission: A Science. Not An Art
Sharon Ehr	Chroma Corporation	Colorimetric methods for extruder screw wear determination
Ann Laidlaw	SheLyn Corporation	Measurement of textiles behind glass.
Dr. John Locke	DuPont Performance Coatings	Color issues in digital color printing of textiles.
Dr. Dan Phillips	Degussa Corporation	Coatings and Colorants Pigment selection and use in tinting systems.
Dr. Dan Rich	Sun Chemical Corp.	Colorimetric method for the evaluation of UV exposure rates in the energy curing of liquid inks.
Art Schmehling	GretagMacbeth Corp.	TBD
Darren Suter	Washington Penn Plastic Co.	Color control of novel plastic applications
Johnny Suthers	Eastman Chemical Co.	Process variability and color tolerances.

If you have specific topics or needs that you would like to have considered, please send your input to:

Ralph Stanziola	Industrial Color Technology LLC 410 Clover Ct., Neshanic Station, NJ 08853 (908) 369-8736 Rascolor@juno.com
John S. Locke	E.I. Dupont Experimental Sta. Performance Coatings/ Ink Jet E402/3328DWilmington, DE 19880-0402 (302) 695-1865 john.s.locke@usa.dupont.com

2003

Inter Society Color Council Annual Meeting

and

Symposium on Color & Appearance Instrumentation*

April 13 – 16, 2003

Sheraton Four Points Hotel – Chicago O'Hare Airport – Chicago, IL

ISCC Annual meeting will be held on April 13–14, followed by SCAI event on April 15–16 that will focus on new instruments, optical models, and other aspects of color and appearance. General sessions, featuring an international line up of speakers, will be combined with “hands-on” workshops, at which the latest color measurement equipment and software will be demonstrated.

Manufacturing, production, and R & D personnel should all benefit from participating in this program by way of new and updated instrumentation and networking with others for better understanding of color and appearance issues in the coatings industry.

For presentation in the “Symposium on Color & Appearance Instrumentation”, please submit an abstract to the program chairman, Romesh Kumar, at the following address. Each presentation will be 40 minutes long, followed by ten minutes for discussion.

Abstract Deadline: October 18, 2002

Final Paper Deadline: January 31, 2003

Romesh Kumar Clariant Corporation 500 Washington St. Coventry, RI 02816
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**Co-sponsored by ISCC and Federation of Societies for Coatings Technology*

IMI's 2nd Annual Digital Printing Summer Camp Grand Summit Hotel Sugarloaf, Me. July 29 - August 2, 2002

The following three highly acclaimed digital printing technology courses are being offered. If you and your company are active in the digital printing field, we think you will want to be represented at one or more of these programs:

Color & Color Management (July 29-30, 2002)

<http://imi.maine.com/color02.html>

Dr. Gabriel Marcu, Senior Scientist in the Colorsync Group at Apple Computer leads this 1.5 day course covering all aspects of color, it's reproduction using digital technology and its calibration and management. If you are involved in the development of color printers, inks or media then this IS the course for you.

Ink Jet Academy July 31-August 1, 2002

<http://imi.maine.com/icad.html>

Mike Willis of Pivotal Resources and Dr. Alan Hudd & Dr. Kevin Hall of Xennia Technology offer their thorough introduction to ink jet, covering all aspects of this diverse technology. Over 1000 have now attended this course. In one and one half days you will get a briefing on all types of ink jet technology, inks, media, print quality and future developments.

From Drive Waveform To Drop Impact

August 1-2, 2002 <http://imi.maine.com/drive02.html>

Prof. Arthur Soucemarianadin from University Joseph Fourier of Grenoble, France will examine in detail the physics of drop formation, from the application of the drive waveform, flow through the nozzle, formation of the drop and the impact on the substrate. An advanced ink jet course, this will particularly appeal to product, ink, system and media developers.

Complete program and registration details on all courses can be obtained from IMI's web site <http://imi.maine.com>. Don't miss this opportunity to obtain up to date technical information as well an opportunity to recreate in the Western Maine Mountains. Try a hike on a section of the Appalachian Trail, golf

Maine's number 1 rated golf course, white water raft on the Kennebec River, spend time moose watching or just relax for a day or two before or after IMI's Digital Printing Summer Camp 2002.

Alvin G. Keene, President

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A COLOR PUZZLE

What is the Munsell notation of a color at Munsell Value 5 that can be 1) reduced in chroma by two units of Munsell Chroma, then 2) moved an equal distance in Munsell Hue in the ascending (increasing in notation) direction, and then 3) increased by two units in Munsell Chroma, to arrive at the starting Munsell notation?

Hint #1: Remember that the Munsell System is left-handed, and report your results in Munsell 100 Hue notation (in which 10R is hue 10, 10YR is hue 20, 10Y is hue 30, and so on until 10RP is hue 100).

Hint #2: There's no need to consider Munsell Chromas larger than 23.1831.

Hint #3: The answer doesn't depend on the color of the bear.

Extra credit: How many specifiable colors at Munsell Value 5 have this property? Closest-estimate respondents get the extra credit.

Send all solutions to the submitters of this puzzle:

Michael H. Brill (mbrill@sarnoff.com) and

Hugh Fairman (resourceiii@erols.com)

In the next issue we will reveal the correct answers and give due credit to respondents.

New Members Approved at the January 2002 Meeting

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Father of Densitometry's Significant and Rare Books

Now Cataloged and Accessible through
GATF

The private collection of one of the graphic arts industry's most prominent and distinguished scientists has now been cataloged to assist researchers, students, practitioners, and those seeking historical information on the color printing process.

GATF is proud to release The Frank M. Preucil Collection: A Catalog of the Special Collection at the Edward H. Wadewitz Memorial Library of the Graphic Arts Technical Foundation. This comprehensive reference book breaks down the over 1,300 books, journals, papers, and personal notes of "the father of densitometry" for quick and easy reference.

Frank Preucil (Dec. 1, 1905 - Oct. 17, 1996) pioneered the use of color reflection densitometry to control and evaluate process color printing in lithography. Many of the concepts and techniques that "the father of densitometry" developed over the years are still used extensively in the graphic communications industries.

In 1999 the Preucil family donated Frank's professional library representing his life's work to the GATF Library. The gift has been appraised at nearly \$30,000 but is worth far more than that in intellectual and historic terms. A few of the very valuable items are a volume in Latin printed in 1501 by Aldus Manutius, a great Venetian printer and publisher; a printed page in German from 1493 adorned by hand-painted illumination; and a dictionary of aphorisms printed in Amsterdam in 1642. (Check out the Table of Contents and ordering information on GAIN.

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view copies are available to editors as well as an electronic image of the book cover.)

http://www.gain.org/servlet/gateway/PIA_GATF/newsroom/archives/g0302d.html

GATF/CMU Host 77th IGAEA Conference for Graphic Art Educators

Hosted by the GATF in partnership with Carnegie Mellon University (CMU), the International Graphic Arts Education Association (IGAEA) 77th annual conference will be held July 28 through August 2, 2002 in Pittsburgh, Pennsylvania.

The IGAEA conference offers graphic arts educators a series of technology updates, interactive presentations, and hands-on laboratory experiences in a variety of disciplines. This conference will bring together a diverse group of graphic arts teachers from different high schools, community colleges, universities, and vocational schools, occupying them in study and skill improvement that will affect the quality of tomorrow's workforce. It is the single best opportunity for professional development in 2002.

The fee for educators participating in the conference is \$475 or \$450 if registered before June 14. Program, lodging at CMU's dorms, and meals are included in this conference fee. Separate fees are associated with spouses, youth, and their programs. For more information contact: Gwen Martin, GATF Conference Coordinator, 800-910-GATF x 116 or email gmartin@gatf.org. (Read about the uncommon conference program and elaborate spouse and whole family activities scheduled, available grants, and hotel/dorm logistics.) Visit www.igaea.com

SPE CAD RETEC

The SPE Color and Appearance Division will hold its annual technical conference, the SPE CAD RETEC, in Toronto Ontario this fall. The dates of the papers will be the 1st and 2nd of October, 2002. The event will be held in the Royal York Hotel, in downtown Toronto. Advanced registration fees are \$325US for SPE members and \$475US for non-members. The room rate is \$220CDN (about \$145US). Additional information can be obtained through the SPECAD website, www.specad.org which will have the brochure posted shortly.

Color Research and Application In This Issue, August 2002

Berlin and Kay identified eleven universal basic perceptual color categories such as red, green, blue, etc. Whether they are universal and basic can be contested, but that they are important can not be denied. It has also been suggested that monkeys are capable of basic color recognition. This has opened up more detailed study of the visual cortex, through examination of the brains of monkeys. Studies of the visual cortex have suggested the areas in which the primary color categories are formed. However, the physiological mechanism for color categorization is unknown. Color naming is an effective way to measure color appearance in human subjects. We open this issue with "A Quantitative Network Model for Color Categorization" by K. Okajima, A. R. Robertson, and G. H. Fielder. In this article the authors describe the mapping between elemental color responses and categorical responses.

Besides its use for measuring color appearance, color has been used as a visual variable to measure color memory independent of the confounding effects of chromatic induction, simultaneous color contrast, and color constancy. In our next article, H. H. Seliger describes "The Measurement of Memory Color." Color discrimination and color memory vary with wavelength. Using narrow band spectral colors, Dr. Seliger shows that the accuracy and precision of memory color may be studied independently from associations of texture, shape and position. Memory color can be one of several different processes such as short-term delayed matching, long-term recall, or color preference (i.e., the "correct" green for grass) decisions. In the described research, colors produced by monochromatic wavelengths of light viewed in isolation have been used as the sole visual variable in short-term delayed matching and long-term recall protocols to quantify three types of color memory in individuals with normal color vision.

The color a material appears depends on the illumination hitting the object. The most common illumination is daylight. However, natural daylight varies

by the time of day, cloud conditions, and location among other things. The Commission Internationale de l'Éclairage (CIE) defined and standardized a series of daylight illuminants. For years there has been a concerted effort by artificial light source manufacturers to produce sources close to the CIE daylight illuminants. The CIE also published a document (Publication 51) describing a method for assessing the quality of daylight simulators for colorimetry. Following the method in this document daylight simulators can be assessed a rating from A to D, A being the closest to daylight. In our next article Yuk-Ming Lam and John H. Xin report on psychophysical experiments investigating the visual color difference of textile metamers under five different D65 simulators and compare the visual results to the ratings based on Publication 51. In their article, "Evaluation of the Quality of Different D65 Simulators for Visual Assessment," they show that while there is better agreement between sources with similar ratings, there is a disparity from the CIE categorization method.

Another factor affecting the color perceived is the illumination level. In our next article, "Color Identification Data Obtained from Photopic and Mesopic Illuminance Levels," Taiichiro Ishida examines color identification under a wide range of light levels from 0.1 to 1000 lux. His results provide a basis for appropriate use of colors at various illuminating environments as well as being useful for studies in color appearance modeling.

Our next article, "Illuminant Estimation for Object Recognition," applies the understanding of the effect of illumination to image retrieval and object recognition. For proper object recognition, the image must be corrected to account for the color of the prevailing illumination prior to performing recognition. The authors, Graham D. Finlayson, Steven Hordley, and Paul M. Hubel, use an improved illuminant-estimation algorithm called "color by correlation." They show that using this algorithm they can approach the level of performance that can be obtained when the actual scene illumination is measured.

For our next two articles we move to the field of

color measurement in industrial applications. The color of an object or material depends on the temperature of the material. As the temperature changes, the measured color will also change. This effect is called *thermochromism* and is well known particularly for red materials. J. Hiltunen, P. Silfsten, T. Jaaskelainen, and J. P. S. Parkkinen give "A Quantitative Description of Thermochromism in Color Measurements." They show how the phenomenon is based on physical processes and derive simple formulae, which explain the experimental data.

Color sells, and in the search for more exciting and fascinating color effects, special pigments have been developed. First, metallic flakes added unusual effects and enhanced styling to the appearance of automotive coatings. Then interference pigments were introduced. However interference pigments are often mixed with more traditional pigments. The interaction between the two types of pigments changes the overall effect. How do the interactions between interference pigments and traditional pigments effect the color appearance, and the measurement of color? In "Green with Red and Red with Green: Examples of Interference and Color Pigment Mixtures" Werner Rudolf Cramer discusses the combination of these very different pigments. In his discussion he points out effects that require instrumental measurements to evaluate and shows that the choosing the correct measuring geometry has a decisive influence on the interpretation of the measurements obtained.

Several color tolerance formulae such as CMC, CIE94, and CIEDE2000 have been developed by first modifying the CIELAB color space. While these formulae give improved evaluation of small color differences, because of the way they modify the CIELAB space, none of them has a color space associated with the metric. The CIE has recognized this shortcoming and has organized a technical committee 1-55 to develop a uniform color space that is associated with the improved color-tolerance metrics. There is already one color-difference metric that improves on CIELAB and has an associated color space. It is the DIN99 color-difference metric. In "Uniform Colour Spaces Based on the DIN99 Colour Difference Formula" Guihua Cui, M. Ronnier Luo, Bryan

Rigg, Gerhard Roesler, and Klaus Witt describe the development of formulae that improve on CIELAB, CMC, and CIE94 and have associated color spaces. All of these formulae could be considered potential candidates for the new CIE uniform color space. This work demonstrates a method of development of such spaces, which could be one of the approaches used by CIE TC 1-55.

The next article moves to the field of urban planning and architecture. In the architectural design of a building, it is always important to consider the features of the region, environmental and climatic elements, as well as style, materials, and use of the building. When planning mass housing in large cities, these factors become even more important than for individual buildings. Rengin Ünver and Leyla Dokuzer Öztürk describe "An Example for Facade Colour Design of Mass Housing." Using the Bizimkent mass housing development in Istanbul, Turkey, they discuss color contrast, color arrangements and the color design stages of the housing development for large urban projects.

In our Classical Articles on Color Section we have a new contribution this month. Lichtenberg's Letter to Goethe on 'Färbige Schatten' was translated by Barry B. Lee. The translation of this 1793 letter is included with a commentary by Ulrich Joost, Barry B. Lee, and Qasim Zaidi.

We close this issue with two items: a book review and an erratum. First, Michael Brill reviews *Acquisition and Reproduction of Color Images: Colorimetric and Multispectral Approaches* by Jon Y. Hardeberg. Then Dr. Nayatani reports some corrections for the article, "Prediction of Additivity Law Failures in the Cases of Unequal Mixing Ratios in Two Chromatic Colors," which was published in Issue #1 of this year.

Ellen C. Carter
CR&A Editor

The Digital Photography Conference, PICS 2003 Call For Papers

The Society for Imaging Science and Technology will hold its Digital Photography Conference, PICS 2003, May 13-16, 2003 at The Hyatt Regency Hotel in Rochester, NY. This meeting is the continuing premier forum for presentation of digital photography advances in image capture, image quality, image processing, and imaging systems development.

This meeting continues the tradition of IS&T's annual spring meetings, as the technical forum for these emerging technologies. The conference will also include a special session on multispectral color science in image reproduction which represents our cooperation in the 5th international symposium on this topic organized by an informal consortium of universities (<http://www.multispectral.org>). PICS 2003 will include invited presentations by world-renowned researchers, an extensive program of oral and interactive papers, and topical tutorials.

The General Chair, Dr. Mark Fairchild of RIT, has announced that the conference will be a truly unique event as the Chester F. Carlson Center for Imaging Science at RIT will welcome PICS 2003 participants to its facilities for a reception, open house, and celebration of the 20th anniversary of the founding of its Munsell Color Science Laboratory. We invite original technical contributions related to the topics outlined in the proposed program. The deadline for abstract submissions via the IS&T website (<http://www.imaging.org/conferences>) is **November 1, 2002**. In addition, proposals for tutorial courses are invited.

For more information, please visit the above website, contact IS&T directly at (703) 642-9090, or pics@imaging.org. For registration and hotel information, contact The Society for Imaging Science & Technology, 7003 Kilworth Lane, Springfield, VA USA 22151. Pamela Forness, Program Mgr 703-642-9090; Fax: 703-642-9094 pics@imaging.org; www.imaging.org.

'Material Colour' SDC Colour Museum

The SDC COLOUR MUSEUM, Bradford, is proud to host 'Material Colour'; an exhibition of artworks by Philip O'Reilly NDD DFA, a member of The Colour Group (Great Britain) and the International Feltmakers' Association [IFA]. 'Material Colour' will run from **7 September - 6 October 2002**.

Philip O'Reilly's artwork explores the relationship between visual ideas and the colourful materials used to express them. Philip is following a deliberate course of experimentation with 'craft-led' materials and processes and the visual concepts he applies to them. Some artworks are concerned with the same motif across a range of materials and processes. The artworks include painting in various media, gilding, feltmaking, glass processes and ceramics.

The private view will be held on Friday 6 September at 12:00pm, followed by a buffet lunch at 1:00pm. This event includes, at 1:45pm, an illustrated talk by the artist entitled; 'In the Illuminant Mode'. His presentation looks at the nature of his ideas and chosen media but with special emphasis on 'Holographic foil' (a material from the packaging trade) and its physical reliance upon ambient lighting to convey colour. Philip O'Reilly was sponsored by the SDC to deliver this talk at the ISCC's 'Colour in its Surround' Conference in Savannah, Georgia, USA, in 2000.

'Material Colour' has been seen at the Upfront Gallery, Penrith, Cumbria, Oriel Myrddin Gallery, Carmarthen, and Inkpen Downie Gallery, Colchester.

A catalogue will be available. More information from: Sarah Burge-sarahb@sdcc.org.uk or: Philip O'Reilly-artwork.2000@virgin.net.

Philip O'Reilly is Senior Lecturer (0.5), Art & Aesthetics [B.A. Hons] School of Art & Design, Howard Gardens, Cardiff, Wales CF24 0SP.

Warning! Color Can Be Hazardous to Your Health.....or Not

Color Takes the Lead in Informing the Public

Red means stop, green means go and yellow means caution. The successful colors of traffic lights and highway signs have become universal in their meanings. Thus, it seems only natural that our leaders would find color a obvious choice in methods to inform the general public of dangerous conditions - whether it be the air that we breathe or imminent terrorist alerts. If these color coded alerts can be successful only remains to be seen. Is the general public truly aware of exactly what each color means in regards to their health and well-being? Complete knowledge of the Air Quality Index and the Homeland Security Advisory System is rather imperative to their success.

In June and July of this year, in Virginia, there were two days in which the air quality index was defined as "Code Purple". Having never even heard of this level, the ever-present resource, the internet was consulted and provided the Air Quality Index (AQI) chart. It was surprising to find that, in fact, there is a level even more hazardous to our health, Code Maroon! Code Red and Code Orange are pretty well understood, but not these two additional colored codes, the most dangerous to our health! A brief summary of the air quality index codes is provided for you at the end of this article or you can look up www.epa.gov/airnow on the internet and download a booklet for your personal use. There is a wealth of information on this site.

The Homeland Security Advisory System is based on colors too. Primarily, the five-level system gives government and industry a common avenue and firm suggestions on how to prepare against terrorist attacks. Federal government uses the alert system and leaves it to the discretion of the state and local governments as to whether or not they will follow the color thematic scheme. Further research indicated that local and state governments can raise their level of alert, but must at least maintain the minimum level announced by the Federal Government. They cannot lower their own alert level.

The warning system is designed to measure and evaluate terrorist threats and communicate them to the public in a timely fashion. Along with the threat conditions, Associated Protective Measures have been created for each level of risk of terrorist attack with suggestions to help Federal departments and agencies implement these protective measures. A list follows with an explanation of the alert system. If you would like more information on the Associated Protective Measures, visit www.whitehouse.gov/homeland.

By reading these charts, you can decide whether or not you feel you have previously been well informed. Color psychologists have certainly played a big part in defining how colors make people feel, e.g. blue is calming, red is alarming, so have these particular color-coded systems taken into account the levels of alert that we should feel when hearing a "Code Purple" or a "Code Maroon"? It would be interesting to know if the psychological ramifications of these colors in each system were researched by the designers of each system. In regards to the Homeland Security Advisory System, would it be helpful to have a color-coded system for the private sector to follow, relative to the initial threat condition announced? In any case, let's hope for future colorful days of Code Green - in both air quality and threat conditions!

*Cynthia J. Sturke, Associate Editor
ISCC Office Manager*

"Dear friend, all theory is grey/ and green the golden tree of life" Johann Wolfgang von Goethe

Air Quality Index

Green (AQI 0-50) Good

Air quality is considered satisfactory and air pollution poses little or no risk.

Yellow (AQI 51-100) Moderate

Air quality is acceptable; however, for some pollutants there may be a moderate health concern for a very small number of individuals. For example, people who are unusually sensitive to ozone may experience respiratory symptoms.

Orange (AQI 101-150) Unhealthy for Sensitive Groups

Certain groups of people are particularly sensitive to the harmful effects of certain air pollutants. For example, children and adults who are active outdoors and people with respiratory disease are at greater risk from exposure to ozone, while people with heart disease are at greater risk from carbon monoxide. When AQI values are between 101 and 150, members of sensitive groups may experience health effects. The general public is not likely to be affected when the AQI is in this range.

Red (AQI 151-200) Unhealthy

Everyone may begin to experience health effects. Members of sensitive groups may experience more serious health effects. Active children and adults, and people with respiratory disease, such as asthma, should avoid prolonged outdoor exertion; everyone else, especially children, should limit prolonged outdoor exertion.

Purple (AQI 201-300) Very Unhealthy

AQI values between 201 and 300 trigger a health alert, meaning everyone may experience more serious health effects. Active children and adults, and people with respiratory disease, such as asthma, should avoid all outdoor exertion; everyone else, especially children should limit outdoor exertion.

Maroon (AQI 301-500) Hazardous

AQI values over 300 trigger health warnings of emergency conditions. The entire population is more likely to be affected.

Homeland Security Advisory System

New Codes for Threat Conditions

Green: Low risk of terrorist attacks.

- * Refine and exercise planned protective measures.
- *ensure emergency personnel receive training.
- *Assess facilities for vulnerabilities and take measures to reduce them.

Blue: Guarded condition. General risk of terrorist attack.

- *Check communications with designated emergency response or command locations.
- *Review and update emergency response procedures.
- *Provide the public with necessary information.

Yellow: Elevated condition. Significant risk of terrorist attacks.

- *Increase surveillance of critical locations.
- *Coordinate emergency plans with nearby jurisdictions.
- *Assess further refinement of protective measures within the context of the current threat information.
- *Implement, as appropriate, contingency and emergency response plans.

Orange: High risk of terrorist attacks.

- *Coordinate necessary security efforts with armed forces or law enforcement agencies.
- *Take additional precaution at public events.
- *Prepare to work at an alternate site or with a dispersed work force.
- *Restrict access to essential personnel only.

Red: Severe risk of terrorist attacks.

- *Assign emergency response personnel and preposition specially trained teams.
- *Monitor, redirect or constrain transportation systems.
- *Close public and government facilities.
- *Increase or redirect personnel to address critical emergency needs.



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face face face face face face face face **2002** face face face face face face face face

July 1-3	Colour and Appearance of Foods. The Colour and Imaging Institute, Univ. of Derby, England Linda Marshall lmarshall@compuserve.com http://colour.derby.ac.uk/food
July 7-11	Int'l Symposium on Optical Science & Technology, SPIE's 47th Annual Mtg, Seattle, Washington. Register by June 21, 2002 and save \$100. Program and registration detail online: http://spie.org/info/am Tel: 360-676-3290 spie@spie.org
July 10-12	Intl Conference on Information Visualisation-IV02-London, England Contact: Ebad Banissi, REF: IV02, Visualisation & Graphics Research Unit, South Bank Univ., 103 Borough Rd London SE1 0AA. UK. +44 171.815.7476, Fax: +44 171.815.7499 banisse@sbu.ac.uk www.graphicslink.demon.co.uk/IV02/ Sponsored by: Information Visualisation Society
Aug 29-31	Interim Meeting: AIC Color 2002, "Color & Textiles" Maribor, Slovenia Contact: vanya.kokol@uni-mb.si or www.dks-drustvo.si
Sept 9-12	ArgenColor 2002, The 6th Argentine Color Congress, School of Architecture, Planning and Design of Rosario National University, Rosario City, Province of Santa Fe, Argentina argencol@fccia.unr.edu.ar Chair: Prof. Enzo Grivarello
Oct 1-2	SPE CAD RETEC Annual Technical Conference, Toronto Ontario, Royal York Hotel. Further Information: www.specad.org
Oct 1-4	AATCC International Conference and Exhibition, Charlotte Convention Ctr, C2C (Concept to Consumer), Charlotte, NC Contact: Shirley Clifton 919-549-8141 919-549-8933 fax or www.aatcc.org/ice/index.cfm or c2c.aatcc.org
Oct 1-3	TAGA, International Printing & Graphic Arts Conference, Bordeaux Exhibition Centre, Bordeaux, France Contact: TAGA at 585-475-7470 http://www.taga.org
Oct 13-15	CMG's Fall International Conference, San Diego, CA, USA www.colormarketing.org 703-329-8500 Fax 703.329.0155 jhood@colormarketing.org
Oct 23-24	AATCC Workshop: Color Measurement Principles and the Textile Industry, Research Triangle Park, NC. Info: www.aatcc.org
Oct 24-25	CAUS "Color Interactions" A two-day symposium in New York City. Featured sessions 'Curated Spaces' and 'Colored Materials', evening of theater and gallery tours. CAUS members \$500, non-members \$800 212-947-7774 www.colorassociation.com
Nov 8-15	Integrating Remote Sensing at the Global, Regional and Local Scale. The 15th William T. Pecora Memorial Remote Sensing Symposium/Land Satellite Information IV Conference and ISPRS Commission I (Platforms and Sensors) Symposium, Denver, CO www.asprs.org/Pecora-ISPRS-2002 . For ISPRS information: www.isprs.org

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Jan 22-24 **ASTM E-12 Meeting: ASTM International Headquarters, W. Conshohocken, PA**
Feb 17-19 **26th Biennial Western Coatings Societies Symposium and Show, "Making a Difference" Reno, NV** Technical Papers: Tim Specht 510-451-2326 Table-top exhibits: Leon Persson 702-492-1577.

- March 9-11** ISCC Williamsburg Conference, Solutions for Industrial Color Problems,
Chairs: Ralph Stanziola, 908-369-8736 rascolor@juno.com Philadelphia University
John S. Locke, 302-695-1865 john.s.locke@usa.dupont.com
- April 6-9** TAGA 2003 Montreal, Hotel Omni Mont-Royal, Quebec, Canada
Contact: TAGA at 585-475-7470 <http://www.taga.org>
- April 12-15** CMG's Spring International Conference, Hollywood, FL Contact: Elizabeth Preston
703-329-8500 epreston@colormarketing.org or visit: www.colormarketing.org
- April 13-16** ISCC Annual Meeting and Symposium on Color & Appearance Instrumentation
Co-sponsored by ISCC and FSCT, Chicago, IL
Chair: Romesh Kumar, Clariant Corporation, 401-823-02161 romesh.kumar@clariant.com
- May 3-9** ASPRS Annual Conference, Anchorage, AK
- May 13-16** The Digital Photography Conference, PICS 2003, Hyatt Regency, Rochester, NY.
For registration and hotel information, contact The Society for Imaging Science &
Technology, 7003 Kilworth Lane, Springfield, Virginia, USA 22151. Pamela Forness,
Program Manager: 703-642-9090; Fax: 703-642-9094; pics@imaging.org;
Website: <http://www.imaging.org>.
- June 23-25** ASTM E-12 Color and Appearance Meeting/Housing: San Diego Town and Country Hotel
and Convention Center, San Diego, CA In Conj. With: CIE Meeting (International Commis
sion on Illumination)
- June 25-July 2** CIE's 25th Session entitled "Light, Dark Skies and Space" San Diego, CA
Information: www.cie-usnc.org
- Aug 4-6** Midterm Mtg: AIC Color 2003 "Color Communication & Management"
Bangkok, Thailand Contact: aran@sc.chula.ac.th
- 2004
- Jan 19-22** ASTM E12 Color and Appearance Meeting/Housing: Embassy Suites Hotel, Ft. Lauderdale,
FL In Conj. With: D01/G03
- April 18-21** TAGA/IS&T 2004 San Antonio, Hyatt Regency Riverwalk Hotel, San Antonio, TX
Contact: TAGA at 585-475-7470 <http://www.taga.org>

Compleat Color Scientist Seeks Employment Opportunity

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- Technical Skills: mathematical analysis, modeling, computational physics with applications to color science, colorimetry of displays, colorant formulation, and fluorescent colorimetry
- A great communicator: skilled in oral and written communication (over 50 formal presentations)
- Demonstrated performance in selling, motivating, and instructing.

Contact: MICHAEL H. BRILL, Ph.D.
P.O. Box 465, Kingston, NJ 08528
Email: mhbrill2001@yahoo.com
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Jobs Wanted!

This Section is intended to help ISCC members that are in need of, and are looking for employment. Here is an opportunity to use the resources at hand. There is no charge for this service, however, the restrictions are as follows:

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2. No more than 50 words may be used to describe yourself.
3. If you are using a P.O. Box, you must supply a complete address.
4. No Agency representing member(s) is allowed.
5. Neither the ISCC News nor the editor are responsible for any errors.
6. You must advise us in writing when you have obtained employment.

We hope this new section will be of value to you, the ISCC member.

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- \$ 500 1/2 page ad
- \$ 1,000 full page ad

The editor reserves the right to determine the acceptability of
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All submissions must be in English.

- **Please submit September/October 2002 articles
no later than August 15th.**

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