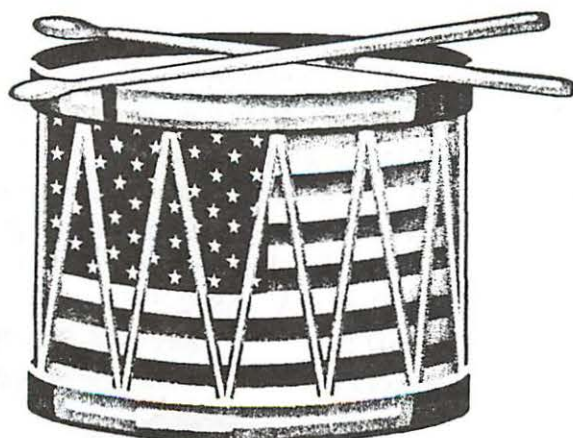




Inter-Society Color Council *News*

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1999

PRESIDENT'S REPORT

This is my second President's report; I offer such reports occasionally as prompted by important events (such as encouragement from our illustrious Newsletter Editor). First I'd like to welcome to the Board of Directors Ralph Stanziola, Art Springsteen, and Dan Phillips (new Directors), and also Bill Gresho (who is completing Shashi Caan's unfilled term). Next, I thank Bob Chung for chairing an outstanding Annual Meeting with TAGA in Vancouver (May 5-7). Not resting on our laurels, we already have a completed list of speakers and talks for next February's Second Panchromatic Conference in Savannah, GA, thanks to chair Cindy Brewer. That list shows a lot of surprising connections among the three Interest Groups, so the Panchromatic meeting should not be missed.

Two Board-of-Directors meetings have elapsed since my last President's report: 6 February (Trevose, PA, thanks to Estee Lauder), and 8 May (Vancouver). In that time, we have seen yet another excellent Education Committee session at the Vancouver meeting--an exemplary final contribution from Committee Chair Vivianne Smith. The new Chair, Geoffrey Rogers, has exciting plans for the next Annual Meeting in Charlotte.

I continue to hear of great results thanks to Jim Keiser and the new Membership Committee he chairs. As a result of their efforts, I have the pleasure of welcoming four new Sustaining Members: Color Communications, Inc., Ciba Specialty Chemicals, Barr Associates, Inc., and PPG Industries, Inc. (An article on PPG appears in the May/June Newsletter.) Also, I'd like to welcome the Graphic Communications Association as a new Member Body.

Relative to ISCC membership, I call your attention to the proposed By-Laws change in the May/June Newsletter (p.9). The reason for the change is to give a voice to the now preponderant individual members of the ISCC, while still retaining decision-making powers of the Member Bodies. I think the changes would be very healthy for the ISCC. If the recommendations are accepted, the Officers and Directors will no longer be elected by voting delegates of Member-Bodies, but rather by all individual members. The Member-Body delegates and the Board will still decide on matters of policy and publications—including such policy changes as this one. The official vote should be complete by the October Board meeting, so please give feedback on the proposal to the Bylaws Committee (Paula Alessi or Ellen Carter) in the next month or so.

In keeping with our recognition of the individual's voice in the ISCC, please let us know as you find people who are interested in color but unfamiliar with the ISCC. Even now, we have a number of new folks who are very creative and will liven up our meetings. Through such members, the ISCC can add new chapters to Ralph Pike's impressive retrospective (in this issue).

As for bumps in the road on the way to next year, I take the approach of Patch Adams and look beyond the problem: I see four digits when presented with two.

Michael H. Brill , 18 June 1999

Have you ever wondered where the name Magenta came from? Read "Quest for Color" in the July 1999 issue of the National Geographic Magazine for an adventure in color.

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Please note: Deadline for submission of material is the 1st of each even numbered month. Material received after the 1st may not be printed until the following issue.

All submissions must be in English.

COLOR IN ITS SURROUND

2nd ISCC Panchromatic Conference

February 19-21, 2000, Savannah, Georgia

The preliminary program for the ISCC 2nd Panchromatic Conference is now available on the ISCC website www.iscc.org. Invited and submitted talks have been organized into sessions focused on surround effects in color vision, in graphic and fine arts, and in architectural surrounds. Poster presentations will open the conference and a panel discussion will close the event. Additional posters and demonstrations of surround effects are invited for the program.

Invited keynote talks at the conference are:

Michel-Eugène Chevreul: From laws and principles to the production of color plates. **Françoise Viénot**, Muséum National d'Histoire Naturelle, Paris, France; Where is the color in color vision? **Steven K. Shevell**, Visual Sciences Ctr, Univ. of Chicago; Color constancy and color context effects. **David H. Brainard**, Psychology, Univ. of California at Santa Barbara; Seeing black and white: Computation of lightness by the human visual system. **Alan Gilchrist**, Psychology, Rutgers Univ.; On the perception of brightness and contrast of variegated backgrounds. **Mark D. Fairchild**, Munsell Color Science Laboratory, RIT; and Demonstration of the effect on colors of a surround that exhibits color assimilation. **Joy Turner Luke**, Studio 231, Sperryville VA.

Cal McCamy will make a special presentation, which includes the 40th anniversary presentation of his scientific demonstration of Land two-color projections, titled: Abridged Color Reproduction Revisited or Sleeping Beauty II.

Mark the conference dates on your calendar. We hope to see you in historic (and warm) Savannah in February. Registration information will arrive with the next ISCC News and will also be available from Cynthia Sturke at the ISCC Office. Contact: Dr. Cynthia A. Brewer, Associate Professor, Dept of Geography, 302 Walker Bldg., The Pennsylvania State University, University Park, PA 16802-5011

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Certainly one of the broad general aims of those studying color is to have an understanding of color appearance in space. The Inter-Society Color Council has planned a Panchromatic Conference with the theme of "Color in its Surround" for early next year. [See the Forthcoming Meeting Announcement in the June issue of this journal.] Monica Billger leads off this issue with an article tackling one aspect of color in its surround in interior design. Beginning with her Ph. D. thesis work, she has been conducting research in which she investigates how colors affect each other in a room. In particular, in "Colour Combination Effects in Experimental Rooms" she examines the two factors: the contrast effects of colors and the interaction among reflecting surfaces. These two factors can have contradictory impacts on color appearance, yet both are operable in interior architecture.

Our second article deals with color in its surround in entirely different circumstances, communications. Often colors are used to enhance visibility or readability particularly on video displays. However, since there is a significant portion of the population who suffer from what is commonly termed color blindness, those choosing the colors may not be aware of the potential confusion caused by their choice of colors. In "Digital Video Colourmaps for Checking the Legibility of Displays by Dichromats," Françoise Viénot, Hans Brettel and John D. Mollon, not only compute the color confusions, but also simulate dichromatic color vision. These procedures would allow the designer with normal color vision to simulate the colors seen by dichromats and thus select less confusing color combinations for their information display.

Color difference is the subject of the next two articles. In the first issue of this year, Rolf Kuehni used the Munsell Color System as a yardstick to examine the CIELAB color difference metric. In that article he challenged researchers to develop a new space without the shortcomings of CIELAB. Now in this issue he takes the steps "Towards an Improved Uniform Color Space." The CIELAB color space was an outgrowth of the Adams-Nickerson color space, in which the CIE tristimulus value Y was transformed

to L using a power function. In this article, Mr. Kuehni reports on his research that suggests unique power function transformations similar to the one originally used in the calculation of L in the Adams-Nickerson space are necessary for the calculation of both the a and b functions as well as the L function.

Also in the first issue of this year Professor Tarow Indow contributed two related articles, "Predictions Based on Munsell Notation Part I. Perceptual Color Differences" and "Part II - Principal Hue Components." In this issue, Dr. Indow continues reporting on his work on color difference. In the earlier articles, Dr. Indow discussed how to predict the size of color difference we see between two Munsell chips and also how to predict the degree of redness, yellowness, etc. that we perceive in the Munsell chips. In "Principal Hue Curves and Color Difference," using the same data as in the earlier articles, Dr. Indow examines two other aspects of color difference. He defines the change of principal hue along the Munsell Hue Circle at different levels of Value and Chroma, and then discusses the color difference in terms differences of the principal hue component and the lightness difference.

For our final full-length article in this issue, we go to the field of color reproduction. One of the crucial issues in reproduction arises from the fact that each medium has a different color gamut. Because of this, it is inevitable that some images will be produced with color in one medium that can not be reproduced in a different medium. The issue of how we translate the color from one medium to another is called color gamut mapping. In "Color Gamut Mapping Based on a Perceptual Image Difference Measure," Shigeki Nakauchi, Satoshi Hatanaka and Shiro Usui derive a novel measure of the perceptual image-difference and propose a gamut mapping method for generating a reproduction which minimizes the measure.

Rolf Kuehni also contributes this month's Color Forum. In a piece which is particularly timely due to the articles by Indow and Kuehni in this issue, Kuehni discusses the "Calculation of CIELAB Hue Difference Adjustment Factors From an Ideal Hue Circle."

I would also like to point out several other items in this issue. In the Communications and Comments section, M. Ronnier Luo and Peter A. Rhodes announce the availability, via the internet on the world wide web, of the extensive database of corresponding colors under two illuminants. In their communication, "Corresponding-Colour Data Sets," they briefly describe each data set and the format of the data. Also, in this issue are reviews of the new books, *The Handbook of Color Science*, 2nd Ed. edited by the Color Science Association of Japan, *Measuring Colour*, 3rd Ed. by Hunt, and *Perceptual Constancy* edited by Walsh and Kulikowski.

Dr. Ellen C. Carter, CR&A Editor

INT'L COLOUR ASSOCIATION 9TH QUADRENNIAL CONGRESS CALL FOR PAPERS

The 9th Congress of International Colour Association (AIC) will be held in Rochester, New York, USA on June 24 - 29, 2001. This Congress takes place within an AIC member country once every four years and features state-of-the-art progress in color science around the world. The 9th AIC Congress will be hosted by the Inter-Society Color Council (ISCC) and coincide with the ISCC Annual Meeting.

The sessions will cover all aspects of color and appearance in science, art, design and industry. It will include social functions to get to know your fellow-workers in color, visits to nearby places of interest, symposia and panel discussions among experts.

You are invited to contribute papers within the following general categories:

- * What is color. Topics could range from the philosophic to the practical description and causes of color.
- * What is color for. Color styling in fashion, cosmetics home furnishings and automobiles, color design, color in art, color in architecture, environmental color design, graphic arts, color coding, color in culture.
- * How does color work. Color in light sources, color vision, deficiencies, clinical and biological aspects, computational color vision, machine vision, color preference, color harmony, color memory, color

illusions, color image processing.

* How can we control color. Colorimetry, color difference, color appearance, color measurement, appearance measurement, photometry, color rendering, color adaptation, color constancy, metamerism, color imaging, color reproduction, device independent color, color management systems, color displays, color hard copy, color order systems, industrial color, color matching, color restoration.

* How should we teach color. Color education, teaching aids, academic and industrial educational needs, continuing education in business.

Papers may be oral or poster presentations on recent technical innovations, non-commercial in presentation. Papers must include new information that has never been previously reported. Up to 20 minutes will be allowed for oral presentations. If you would like to present a paper at the meeting, please contact the Program Chairman before August, 2000. Extended abstracts will be required by November, 2000 for acceptance and notification by the Program Committee by March, 2001.

Program Committee Chairman:

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ISCC THANKS

The ISCC Board of Directors and Officers would like to thank Charla Haley for offering to become our official ISCC Calligrapher. Charla created the certificates for our honorees at the Vancouver Annual Meeting and did a beautiful job! We sincerely appreciate her efforts, talents, and willingness to help out.

Thanks Charla!

ISCC ANNUAL MEETING REPORT

May 5-7 1999

Vancouver, B.C. Canada

On May 5, 1999, the 68th Inter-Society Color Council (ISCC) Annual Meeting convened at the Westin Bayshore Hotel located on the Vancouver Harbor, B.C., Canada. Chairman Bob Chung (RIT) is to be congratulated for putting together a superlative program. The ISCC held their annual meeting together with the Technical Association of the Graphic Arts. TAGA held their meeting on May 2 - 4, with the ISCC joining in a bridge session on May 5, 1999.

Program included speakers from Hungary, Canada, England, Germany, Sweden, Taiwan, and the United States. Speakers represented academia, industry, and international standardization laboratories. This diversity proved to be an excellent combination for an exciting and informative technical program. Bob Chung will publish a formal report of this meeting in the Color Research and Application, December 1999 issue. The Annual Meeting Symposium theme focused on color standards and color management.

The two days of the ISCC annual meeting was comprised of four parts: The Industrial Applications of Color (Interest Group II) Michael Stokes, Chair; the Education Committee, Vivianne Smith, Chair; Fundamental and Applied Color Research (Interest Group I), Helen Epps, Chair; and Art, Design and Psychology (Interest Group III), Curt Fritzeen, Chair.

Dr. Bob Chung, RIT, moderating the morning session introduced Tim Kohler, Canon Information Systems. Kohler reviewed the history of the International Color Consortium, ICC, and explained Profile Connection Space, PCS. He reviewed some shortcomings of the ICC System focusing on the lack of Inter-operability. He concluded his talk by presenting "The Roadmaps to Success; a New Generation of the ICC System."

The next speaker was Parker Plasted of Alcan, LLC, whose presentation was entitled "Implementation of ICC-based Profiling Tools." He reviewed device profiles, their implementation, and structures.

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Erwin Widmer of EMPA was the next speaker. His presentation was entitled "Performance Evaluation of ICC-based Color Management System." Widmer described a methodology evaluating profiles and reproduction quality of an IT8.7 target and L^* , C^* , H^* , and DE^* .

Dr. Jim King presented Adobe's generalized requirement for composite documents. He reviewed object oriented color management in PostScript and PDF formats. He emphasized and demonstrated the need for color object orientation of images. He suggests that we should reconsider our objective of device independent data.

After a break, Bob Chung introduced Dr. Edward Granger of X-Rite, Inc. His paper was entitled "Something Old, Something New, Something Borrowed, Something Blue." Granger's presentation examined the metaphorical meaning of his paper title as compared to the marriage between graphic arts and electronic imaging. Edward presented new revolutionary concepts for a linear color space that adapts well to the Graphic Arts Industry. Additional information is available from Edward: ed@granger.net.

Gustav Braun of RIT presented the next paper entitled "Gamut Mapping for Pictorial Images". Braun reviewed techniques and results obtained in the form of pictorial images using different gamut mapping methodologies.

David Q. McDowell, first speaker of the afternoon session, reviewed characterization targets for scanners and printers, and associated international (paper) standards that support this work.

David Spooner, rhoMetric Associates Ltd. spoke next on "Measurement without Bounds". Spooner reviewed relevant publications and the physics behind the phenomenon of lateral diffusion error, also known as edge-loss error, translucency error, or translucent blurring error. Spooner reviewed data and algorithm development to characterize the phenomenon mathematically.

The next topic was "Spectral Reflectance Prediction of Ink Overprints by Kubelka-Munk Turbid Media

Theory". Di Yuan Tzeng began by describing the process for spectral-based printing. He then reviewed the technical approach and math models developed for this method. He concluded by presenting data that showed excellent predictive results.

Richard Holub of Imagicolor, the Technical Session Moderator and first speaker, opened the late afternoon session. As the President of TAGA, he welcomed the ISCC to the Bridge Session. His paper, entitled "Some Requirements for Accurate Network Color" addressed the issue of accountable color in network applications. He began by presenting a flow diagram that reviewed conventional methodology employed to produce mass production. His concept replaces the functionality of a traditional "backbone" flow diagram with an electronic network. He explained the concept of an electronic color proof.

On Wednesday evening, 97 brave souls trekked onto the cruise ship Kona Winds, arranged by Romesh Kumar. We departed from the Bayshore Hotel dock and cruised NNW from Vancouver up the Burrard Inlet to Point Atkinson. On the way, we were served fresh grilled salmon, a real treat! The food was delightful, the scenery spectacular, but most of all, we enjoyed talking with old friends and making new ones.

Thursday morning, Brill introduced Brian Funt from Simon Fraser University. The title of his paper was "Color Constancy for Machine Vision and Digital Photography." His presentation focused on how to correct the color of an image for a given illumination with a given chromaticity. He discussed mathematical mapping and neural network methodology to achieve this goal. He presented photographs and data, demonstrating results of various methods.

After the morning break, Joy Turner-Luke of Studio 231 presented her paper entitled "Cutting the Uniform Color Scales". Joy began her presentation by reviewing the colorful history of the Optical Society of America-Uniform Color Space (OSA-UCS). She previewed software under development called Color Cleaver. This software enables a designer to "slice" a section of the UCS color solid into planes, which lie in different angles in this three-dimensional color space. This slice represents harmonious and related

colors. According to Luke, this program is available to educators.

An interesting Poster Session and Wine and Cheese Reception was held early Thursday evening, chaired by Yan Liu. The four presentations were "Problems in Color Determination of Raw Cotton Fiber" by Dr. Helen H. Epps; "A Study of Short Term Color Memory" by A. Carlisle Bynum and Helen H. Epps; "DIN99 Colour-difference Formula, a Euclidean Model" by Klaus Witt and "Low Commitment Spectrophotometer Care" by Giordano Beretta. Everyone attending had time to view the posters, talk with each presenter and other conference attendees.

The afternoon session was held under the auspices of Interest Group II. "An Assessment of the Effect of the White Pigment Used in a Bleach on the Determination of Ink Strength" by Danny Rich and R. W. Bassemir was the first paper. The National Printing Ink Research Institute, NPIRI, began supplying new standard universal white bleach. In a report in 1966, NPIRI reported that there was no significant difference between results with the new bleach and X1025 (an older bleach they had supplied). Folklore said that the older bleach performed better, therefore, this research was undertaken. The conclusions were that 1) the NPIRI report was correct 2) the ASTM procedure was the best 3) sample preparation and presentation are the single greatest contributor to error and 4) one must prepare a standard and sample at the same time and make comparative measurements. One cannot use electronic numerical standards.

"The Beam Splitter-A Tool for Color Difference Studies" by Ralph Stanziola. Glass allows a certain amount of transmission and a certain amount of reflectance. By setting a piece of glass at a 45° angle and aligning pieces of colored material on two adjacent walls in a viewing booth, one can superimpose the reflection of one sample on the transmitted image of the other sample. If one uses regular glass, the reflected image is less than 8 percent in intensity. Thus, using this very simple experimental setup, one can use the principle of first surface reflection to produce virtual sample pairs. These can best be used to perform color difference experiments easily. These sample pairs can be quite close colorimetrically...

much better than can be produced easily from actual paint mixtures. One can do other related experiments such as adding a separation line, or adding texture and quantifying the results.

"The Generation of Spectral Reflectance Tolerances based on Customers Visual Evaluation and the Application of CMC Tolerancing," by Anne-Marie Beggin and Bill Gresho, was presented by Bill Gresho. Automotive-supply users are requiring a Production Part Approval Process, PPAP. The PPAP has a color requirement in terms of Ecmc at 2:1. Delco had used CIELAB tolerancing. Their old tolerance was 5 CIELAB Units and the new tolerance assigned was 1 CMC, using L^* , C^* , and H^* . Then they had a real life problem on one black part used in a radio. They had 54 samples, 24 of which were accepted and 30 were rejected. The visual observation did not correlate to the CMC color difference values. The solution was to develop a spectral shape and magnitude tolerance for the reflectance curve of the product rather than using a color difference metric.

"Two Green Gem Materials for Simulating Natural Emerald" by Yan Liu. The possible imitations of emerald are: 1) glass, 2) GGG and 3) YAG. GGG is Gadolinium Gallium Garnet. YAG is Yttrium Aluminum Garnet. Glass really doesn't look like emerald, not having the same color. GGG looks okay under some illuminants, but is metameric. YAG is a spectral match. The factors involved during crystal growth are 1) crystal structure 2) ligand field 3) energy band, 4) transition & rare earth elements 5) color centers and 6) fluorescence. Because of the number and difficulty of controlling many factors, spectral matching is difficult to do, thus color matching of artificially grown crystals is done by trial and error.

"How Do You Measure Color Shift of the Next Generation and High Performance Light Interference Pigments" by Barbara Parker. Absorption color includes pigments and dyes. Light interference color is due to refraction. In this presentation Parker described a new metric, dynamic color area. The layered structure includes a center reflective layer, surrounded by a gloss layer. A transparent absorbent layer surrounds this layer. This complex structure produces a highly directional effect. The question is how does one nu-

merically assess color. The presented solution is called dynamic color area. It involves 1) CIELAB 2) instrument 3) calibration 4) measuring geometry. Using a Zeiss GK311/M Goniospectrophotometer. The measurement geometry is 11 readings and 10 to 60 degrees and measuring 15 degrees off the specular angle. The result was plotted on an CIE (a - b) diagram with the two end readings connected to the origin. Then the area on a - b diagram is integrated, called the dynamic color area.

The Friday morning session was Interest Group I - Fundamental and Applied Color Research. Dr. Helen Epps of the University of Georgia and Frank O'Donnell of Sherwin-Williams are the co-chair persons for this interest group and responsible for this session. Dr. Epps introduced the first speakers, David McDowell and Anthony Johnson. Johnson started the presentation by reviewing the graphic arts printing process for colored images. He then discussed methods of color management used in Graphic Arts. This presentation included reviewing mathematical transformations from one color space to another to reproduce color accurately. McDowell continued the presentation reviewing three intertwined issues; data exchange, color management and device characterization. McDowell contends that the increase in computer capacity now permits a new workflow. This new workflow, a change in ICC architecture, will be responsible for improving the quality of final results. Epps then introduced the next speaker, Dr. Cynthia Brewer. She presented her research "Selecting Hue Pairs for Maps Using Color Naming and Color Vision Research". Dr. Brewer began her talk with various types of colored presentations used in epidemiological maps by statisticians to evaluate geographical patterns of disease. Cindy reviewed the basis for color naming and the criteria select colors used as adjacent pairs. Her presentation continued examining the most useful mapping based on simultaneous contrast effects and the least confusing color pairs for anomalous observers.

Epps introduced Dr. Michael Brill, Sarnoff Corp., whose topic is "Von Kries and Beyond: Color Constancy as Ratio of Sampled Synthetic Spectra". Brill reviewed four theories for color constancy: Von Kries, 1905; Hurvich & Jameson 1956; Nikolaev, 1985; and

Guay, 1998. Brill reviewed the concepts and developed the equations for all four models. Mike did an excellent job of bringing theories together and communicating their concepts in an easy to understand presentation. The final morning session speaker was Kimberly Schenter of Nike, Inc. The title of her presentation was "In A World We Know Best by Sight". She reviewed the requirements for Nike's Global Color Program. This program extends throughout manufacturing to marketing of equipment, footwear, and apparel. Kimberly reviewed the elements of the color program necessary to implement color control.

Interest Group III on Art Design and Psychology held the last session of the meeting. Curt presented Dr. Tien-Rein Lee of the Chinese Culture University. His paper was entitled "A Study of the Relation Between Hue Variations and Affective Responses in Color Communications". Lee explained that the purpose of the study is to understand color preferences and affective responses of color among Americans. He analyzed results using rigorous statistical analytical methods. The survey result indicated that Americans' most favorite colors are blue, cyan-blue and red.

Curt then introduced Dr. William Thornton, Prime Color Inc., as the next speaker. His paper is coauthored with W. N. Hale, Hale Consulting, and was entitled "The Psychophysics of Color Rendering". Thornton introduced the definition of "preferred color" being the expected color of an object. His talk focused on Judd's two most significant colors in life, complexion and foliage. He reviewed the basis for their selection and location in color space and demonstrated that the "true colors" of these objects do not correspond with their chromaticity values or their implications in chromaticity space. Thornton suggests that the variance between the "true" and "preferred" colors may be due to an inaccuracy of the CIE standard observer. This paper solicited a large number of interrogatives.

After the break, Romesh Kumar announced the ISCC 2000 meeting in Charlotte, April 16-19, "Pigments and Color Measurements". Papers are welcome. Contact: romeshkumar@clariant.com.

Next, Dr. Phil Bradfield of Solex presented his paper

"Kruithof Was Right". He reviewed historical events that led to recent developments in illumination and demonstrated the effect of color temperature on a print by the Dutch painter, Ver Meer. The illumination color temperature was varied from 2800-6500K and the color effect on the rendition was dramatic.

Giordano Beretta of Hewlett-Packard Co. whose paper, coauthored with Yoko Nonaka, is entitled "House Painting with NCS in the USA" reviewed the difficulties faced in selecting the paint in our lives, house painting. Color scientists were of little assistance to them in selection of color! Using the NCS Color Atlas, their cultural heritage and their preferences, he reviewed the process and rationale for selecting colors for the interior and exterior of their home. The final result was a dramatic use of pleasing colors. He did indeed integrate the three aspects of the ISCC; science, business, and art.

Dr. Michael Brill closed the meeting. The author; on behalf of the ISCC Board of Directors, its members, and all those who attended and enjoyed the meeting, congratulate and say thank you to our indispensable office manager, Cynthia Sturke. Cynthia worked tirelessly pulling this meeting together and making it enjoyable for us. She did an excellent job. I would also like to acknowledge Dr. Ellen Carter who graciously reviewed this document and provided valuable notes.

(This is the edited version of the report that Mr. Jack A. Ladson had graciously submitted to ISCC News.)

INTER-SOCIETY COLOR COUNCIL ANNUAL BUSINESS MTG REPORT Thursday, May 27, 1999

The ISCC Annual Business Meeting was held in Vancouver, B.C., Canada in conjunction with the successful 68th Annual Meeting of ISCC. The Westin Bayshore Hotel hosted the luncheon. Dr. Michael Brill extended a warm welcome to all those in attendance. The meeting began as Michael introduced some of the ISCC officers and honored guests seated at the head table. Dr. Brill acknowledged Professor Bob Chung, Mr. Romesh Kumar, and Mrs. Cynthia Sturke. Michael stated that their efforts and hard work were

responsible for the success of the annual meeting.

Mr. Jack Ladson presented the following report for Mr. Rich Riffel: "This report is given for Mr. Rich Riffel, the Secretary for the ISCC. Two firms, DuPont Automotive Products and PPG Industries have joined the ISCC as Sustaining Members. We thank them for their support. The Individual Membership Groups of the ISCC have increased by 45 individuals bringing the total of members to close to 1000. Graphic Communications Association joined the ISCC as a new member body. We thank them for their support." This concluded the Secretary's Report.

Dr. Michael Brill introduced and welcomed Mr. Hugh Fairman who submitted the Treasurer's Report. He then introduced and welcomed the incoming board members; Mr. Dan Philips, Dr. Art Springsteen, and Mr. Ralph Stanziola. An award for service to Directors Dr. Cindy Brewer, Dr. Helen Epps, and Mr. Jim Keiser was presented along with thanks for fulfilling their terms of service.

Special recognition was given to Professor Robert Chung who, as meeting chairman organized an excellent program for this 68th Annual Meeting. Michael presented Bob with a citation for this accomplishment.



Robert Chung and Michael H. Brill

Brill announced that Dr. Geoffrey Rogers had volunteered to lead the Education Committee as the current chair, Mrs. Vivianne Smith, has stepped down.

Dr. Brill then announced that Joy Turner-Luke and Dr. Henry Hemmendinger have been elected as Honorary Members of ISCC. Regrettably, Henry was

unable to attend. (See following article for Henry's award presentation.)

The student awards were presented to: Mr. Gus Braun, Mr. Carlisle Bynum, and Mr. Di-Yuan Tzeng for their contributions as students to the color community and the ISCC Annual Meeting.

Dr. Bob Marcus presented the citation for the Nickerson Service Award to Dr. Danny Rich. Dr. Allan Rodrigues who presented the citation for Mr. Cal McCamy, this year's MacBeth's Award winner. President M. Brill closed the meeting.

Jack A. Ladson, President-Elect

HEMMENDINGER AWARD CEREMONY

On the evening of May 25, President Michael Brill, President-Elect Jack Ladson, and Treasurer Hugh Fairman met at Henry Hemmendinger's home with Henry's lovely wife, Sylvia Crane. We presented the ISCC Honorary Membership Award to Henry.



Henry Hemmendinger and Michael H. Brill

Michael began the informal presentation with the following citation: "I am pleased to be here with Hugh and Jack and to present this award to you for Honorary Membership in the ISCC. You have devoted over fifty years to standards, their measurement, absolute accuracy, and industrial application. You have raised the bar in all that you have done. It is a great honor to present this award to you."

Henry accepted the award graciously, expressing appreciation to the ISCC and the Board of Directors. We concluded the evening recounting times and experiences past.

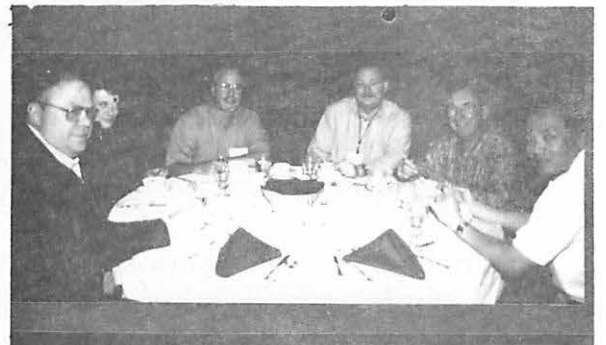
Jack A. Ladson, Pres. Elect



Danny Rich receives Nickerson Service Award



Cal McCamy receives Godlove Award





Joy Luke named Honorary ISCC Member



Student Awards: Gus Braun, Carlisle Bynum and Di-Yuan Tzeng



Poster Presenter, Giordano Beretta



Poster Presenter, Dr. Helen Epps



Student Poster Presenter, Carlisle Bynum



Which Witt is Witt? Presenter, Klaus Witt
New ISCC Member, Gary Witt

THE SOCIETY FOR IMAGING SCIENCE AND TECHNOLOGY (IS&T)

The Society for Imaging Science & Technology has announced its prestigious 1999 Honors and Awards to 19 imaging researchers, selected individuals who, by their exemplary contributions, have made unique and noteworthy contributions to imaging science and technology.

Honorary Membership in the Society, the highest honor bestowed by IS&T, recognizes outstanding contributions to the advancement of imaging science and engineering. This award is presented to **Robert Gundlach** for his lifetime of contributions to the field of electrophotography. Bob joined Haloid Company in 1952 and participated in the

The Edwin H. Land Medal is endowed by Polaroid Corp. and awarded in alternate years by IS&T and the Optical Society of America. The 1999 Award was presented to **Robert W. Webb** for his numerous inventions which have accelerated the development of new diagnostic tools to help prevent the loss of sight due to eye disease. Currently, Dr. Webb shares his time between Schepens Eye Research Institute and the Wellman Laboratories of Photomedicine.

The Chester F. Carlson Award, sponsored by Xerox Corp. is presented to **David Weiss** of Eastman Kodak Co., for his contributions in the field of electrophotographic materials with primary emphasis on photoreceptors. David Weiss is the co-author of *Organic Photoreceptors for Xerography* and *Organic Photoreceptors for Imaging systems* (Marcel Dekker, Inc.) as well as the author of over forty scientific papers in electrophotography, photoconductivity, photochemistry, and photophysics.

The Lieven Gevaert Medal, Sponsored by Bayer Corp./Agfa Division, recognizes outstanding contributions in the field of silver halide photography. The award is presented to **Vitaly Belous** for his pioneering use of luminescence spectroscopy as a tool in the study of photophysics of silver halide materials.

The Kosar Memorial Award, sponsored by the New York Chapter, recognizes contributions in the area of unconventional imaging. This year's recipients are **Jean Fréchet**, **Hiroshi Ito** and **C. Grant Willson** for the invention of chemically amplified resists.

Jeff B. Pelz has been awarded the **Raymond C. Bowman Award**, for his outstanding work in promoting imaging science as a career for students and as an innovator in the development of new curricula in imaging science. The Raymond C. Bowman Award is sponsored by the New York Chapter.

Fellowship is awarded to a Regular Member for outstanding achievement in imaging science or engineering. This year's Fellowship is awarded to **Gary L. House**, **Mitsuo Kawasaki**, **Hiroyuki Kawamoto**, **Robert Nash**, and **John Texter**.

The Journal Award (Science) recognizes contribution in the area of basic science, published in the *Journal of Imaging Science and Technology* during the preceding year. The 1999 Journal Award (Science) is presented to **Koichi Iino** and **Roy S. Berns** for their scientific papers entitled "Building Color Management Modules Using Linear Optimization I and II" published in the *Journal of Imaging Science and Technology*, Volume 42, Number 1, page 79 and Volume 42, Number 2, page 99. Koichi Iino is currently an assistant chief researcher at the Manufacturing Research Laboratory, Toppan Printing Co., Ltd. Dr. Roy S. Berns is the Richard S. Hunter Professor of Color Science, Appearance, and Technology at the Munsell Color Science Laboratory and Graduate Coordinator of the Color Science master's degree program with the Center for Imaging Science at Rochester Institute of Technology.

The Charles E. Ives Award, sponsored by IS&T's Rochester Chapter, is given in recognition of an outstanding contribution published originally in the *Journal of Imaging Science and Technology* during the preceding calendar year. The publication should be in the general area of applied science or engineering, concerned with the successful application of scientific and engineering principles to an imaging problem or with a technical problem solved with imaging technology. The 1999 Charles E. Ives Award is pre-

sented to **Juha Katajamäki** and **Hannu Saarelma** for their paper entitled "Objective Quality Potential Measures of Natural Color Images" published in the *Journal of Imaging Science and Technology*, Volume 42, Number 3, page 250. Since 1994 Juha Katajamäki has been a researcher in the Laboratory of Media Technology at HUT. Hannu J. Saarelma has been a full Professor of Media Technology at the Helsinki University of Technology in Helsinki, Finland since 1982.

The Itek Award is for an outstanding original student publication in the field of imaging science and engineering. the 1999 Itek Award is presented to **Angela Marks** for her paper entitled "Complex formation between symmetrical thiacyanine dyes and aromatic heterocycles: evidence for molecular recognition," published in the *Journal of Photochemistry and Photobiology A: Chemistry* 119 (1998), 191-203. Ms Marks is a May graduate of the University of Wisconsin-Eau Claire with a B.S. in Biochemistry/Molecular Biology.

Senior Membership is awarded for long term service to the Society at the national level. This year, Senior Membership is awarded to **David McDowell** of Eastman Kodak, for his long term service as IS&T Standards Chair, representing the Society on several; national and international committees and for his regular standards updates to Society members through conference papers and Reporter articles, for his long-term service in leadership roles in several national conferences, most notably in the Color Imaging Conference. David is a Senior Technical Associate in the Professional Imaging Division of Eastman Kodak Co. **The Service Award** is given in recognition of service to a Chapter, or to the Society. This year's recipients are **Jeffrey Seideman** of Image Tech and **James C. King**, Adobe Corp.

AN IMPORTANT CORRECTION TO YOUR ISCC DIRECTORY

On page 11 of the blue 1999 ISCC Directory, the 1998 MacBeth Award should be changed to Dr. David H. Alman and the 1999 Nickerson Service Award should be changed to Mr. Louis A. Graham. My apologies to Dave and Lou. Cynthia

FRED BILLMEYER RECEIVES THE DEANE B. JUDD AWARD IN POLAND

The International Colour Association (AIC) has honored Prof. Fred W. Billmeyer with the Dean B Judd Award. It was presented in Warsaw, Poland on Wednesday, June 23 1999. P. Alessi gave the citation and C. McCamy gave an address on Fred's behalf.

The AIC, founded in 1967 and consists primarily of representation from the color associations from the member and observer nations. In 1975, the AIC established the Deane B. Judd Award.

Prof. Fred Billmeyer is the thirteenth recipient of this Award and is being honored for a lifetime of significant contributions to the field of color.

Prof. Billmeyer received his BS in Chemistry from Cal, Tech. in 1941 and his PhD in Physical Chemistry from Cornell University in 1945. From 1945 to 1964 he worked for DuPont. In 1951 he was selected to be Lecturer in High Polymers at the Univ. of Delaware. In 1960 and 1961, Fred was on loan to MIT where he established and taught courses in polymer science. Prof. Billmeyer is a member of Phi Kappa Phi and Sigma Xi honor societies. He is a fellow of the AAAS, American Physical Society, ASTM, OSA and the Society of Plastic Engineers (SPE). He is a 50 year member of the American Chemical Society, a former Director and Secretary-Treasurer of CORM, a member of Federation of Coatings Technology, the Colour Group of Great Britain and the Society of Dyers and Colourists.

Prof. Billmeyer has been a major figure in the ISCC since the early 1960's. Prof. Billmeyer is an Honorary Member of the ISCC, received the ISCC Macbeth Award in 1978, Nickerson Award in 1983 and the Godlove Award in 1993.

Please join the ISCC in congratulating Fred. We all honor him for his lifetime achievements in the area of color science as he receives the 1999 AIC Deane B. Judd Award.

Dr. Robert T. Marcus, Datacolor Intl.

OBITUARY - FLOYD RATLIFF

Floyd Ratliff, Professor Emeritus of Biophysics and Physiological Psychology at The Rockefeller University, passed away recently at the age of 80. Ratliff's undergraduate education was at Colorado College. His graduate training was at Brown under Lorrin Riggs. He was awarded a National Research Council fellowship in 1950 to work with H. Keffer Hartline at Johns Hopkins, and then spent three years at Harvard, initially as an Instructor and then as Assistant Professor in Psychology, where he worked with von Bekesy. Ratliff rejoined Hartline at the Rockefeller University in 1954, where he continued to work until he became Professor Emeritus in 1989.

His many awards include election to the National Academy of Sciences (elected 1966), the American Academy of Arts and Sciences, the Warren Medal of the Society of Experimental Psychologists, the Tillyer Award of the Optical Society of America (1976), the Medal for Distinguished Service of Brown University, the Pisart Vision Award of the Lighthouse (1983), and the American Psychological Association Distinguished Scientific Contribution Award (1984). He also served as president of the Harry Frank Guggenheim Foundation.

Ratliff's work on the lateral eye of the horseshoe crab *Limulus* with Nobel Laureate H. Keffer Hartline and other colleagues at The Rockefeller University was the first quantitative description of information processing in a portion of the nervous system, and represented the first use of computerized data collection in neurophysiology. Other major scientific interests included visual psychophysics, electretinography, and visual evoked potentials. His many colleagues and students included William H. Miller, D. Lange, Bruce W. Knight, Jun-Ichi Toyoda, Norma Graham, Norman Milkman, Fred Dodge, Robert Barlow, Henry Lester, Robert DeVoe, Richard Chappell, Richard Purple, Charles Stevens, Robert M. Shapley, Harry Wms. Harper, Michael W. Levine, Lawrence Sirovich, Israel Abramov, James Gordon, Max Snodderly, Alan Adolph, John Tuttle, Fulton Wong, Ehud Kaplan, Shaul Hochstein, Vance Zemon, Jonathan Victor, Scott Brodie, Keith Purpura, Robert Soodak, Sergiu Marcus, R. Clay Reid, Stefan Dawis, and Daniel Tranchina.

Ratliff was deeply interested in the relationship of art and science, and especially the extent to which the intuitions of great artists anticipated many of the conceptual advances in the neuroscience and psychology of vision. This theme was brilliantly developed in his two major books, "Mach Bands" (1965), Holden Day and "Paul Signac and Color in Neo-Impressionism" (1992, The Rockefeller University Press). He is survived by his wife Orma, his sister Edith Johnson, his daughter Merry, and a grandson. His many colleagues and trainees will long remember him not only for his deep intellectual insights, but also his gentle guidance and humble humanity.

Dept. of Neurology and Neuroscience (212) 746 2343 (office)
Weill Medical College of Cornell University (212) 746 6521 (lab)

Jonathan D. Victor
jdvicto@med.cornell.edu

**COLOR MARKETING GROUP
FORECASTS COLORS FOR 2002**

www.colormarketing.org.

Over 650 Color Designers from around the world will meet in Palm Springs, CA from October 24-26, 1999 at the Esmeralda Resort. CMG members collectively forecast colors for manufactured products for Contract/Commercial markets in the year 2002. Members will develop short-and long-range color forecasts for a vast array of Contract products; from Hospitality to Retail, and Office to Health Care. According to Steve Toth, CMG*, Director, Hasbro and CMG Program Planning Chairman," during the Conference, 2002 Contract Color Directions® Workshops will focus on Forecasting colors that will appear in the year 2002, while the 1999-2000 Contract Colors Current® Workshops concentrate on color trends already appearing in Contract markets or committed to appear in the next 12-18 months." General Session topics include marketing of color, brand equity, and international color trends. Info: CMG, 5904 Richmond Hwy, Suite 408, Alexandria, VA 22303 Tel: 703-329-8500; Fax: 703-329-0155 *jmoran@colormarketing.org*

DUPONT AND ISCC CAREER-LONG PERSPECTIVE

March 26, 1999

Dear Dr. Carter,

I am addressing this to you as the only individual among the current officers and directors of ISCC whom I recall, but I do want the full ISCC Board and the DuPont Company know the source of a great satisfaction to me personally was to the announcement of the DUPONT AUTOMOTIVE PRODUCTS SUSTAINING MEMBERSHIP in the Number 377 ISCC NEWS. It is historically long overdue in full recognition of the contributions of so many of its revered officers, members, and technical society affiliates to the establishment of DuPont's long standing prominence and leadership in automotive color technology.

As I read with remorse and respect the splendidly written obituaries of Ralph Evans, Norman Macbeth, Deane Judd, Dorothy Nickerson, Richard Hunter, David MacAdam, Walter Granville and Charles Reilly; I have an increased awareness of the impact all of these celebrated personalities had on the most enjoyable phase of my DuPont career (between 1944 and 1965) when I held responsibility for technical developments in the territory of automotive and refinish color. As a naive, young chemical engineer and the appointed delegate from the National Paint, Varnish and Lacquer Association (now FSCT) I was warmly welcomed to the inner ISCC sanctum. It was in this environment that I gleaned the insight, knowledge and inspiration needed to effectively execute my assignment during the 20 years of rapidly changing color world. I vividly recall the many richly inspiring evenings of conversation and debate at the NY Statler bar before countless ISCC meetings. These must also include those at the joint FATIPEC sessions in Spa-Belgium, Dusseldorf and Lucerne during the Kubelka-Munk post war emergence. (Ed. FATIPEC is a European Association and it stands for "Federation d'Association des Techniciens de Peintures, Vernis, Emaux, et d'Imprimerie de l'Europe Continentale.")

This elderly survivor considers the most significant happening in this era to be in the broadening range of chemical and light stable pigments and dyes, greatly expanding the automotive color options from black, deep blue or green and hideous earth tone grays to a durable full spectrum range of hues, chromas and values. Leading the procession was rutile titanium oxide, a brilliant high hiding white pigment, opening the door to pastels. Simultaneously we welcomed lightfast phthalocyanine blues and greens and

many other new dye industry contributions in the yellow, orange, red and maroon range. This major change in the quality of materials availability created many new problems and requirements in the arena of color product formulation, manufacture and application. Here the resources of the people and the organized structure of ISCC came to provide basic information to guide us through the many pitfalls in the commercialization phases. Their fundamental contribution was in the standardization and universal acceptance of the CIE System and a relationship to a standard observer's perceived color or quantifiable color difference.

Let me cite just a few chronological examples to fully illustrate the unusual nature and manner of our involvement with ISCC people in that changing time frame:

- (1) Post war resumption of automotive coatings production and the shift away from olive drab to a broader color range brought problems related to visual judgment of color difference. Shaders, at that time, were classified at the highest labor rates and were generally promoted to that level on a seniority basis. Dean Farnsworth had addressed a similar situation in submarine electrical damage control involving color difference discrimination of workers in multiple wire damage cable repair. Research carried out by Forest Dimmick produced a unique test for color discrimination aptitude. Combined with the previously available Munsell hue difference discrimination test, we were able to establish shader qualification requirements reducing shading time and batch reworking in multiple plants (1946).
- (2) The simple action and the commercialization of high precision tristimulus colorimeters motivated increased technical activity towards elimination of visual judgment in both colorant and finished product control limits. Dorothy Nickerson's achievements in establishment of internationally accepted colorimetric standards for agricultural control application was full proof of the viability of this objective. Dick Hunter and Dorothy were very helpful in guiding us into the early stages of our program (1947).
- (3) A decision was made to provide a versatile color studio for storage and display of our grossly expanding collections of color standards and offerings and as well as for customer presentations with capability to display under variable lighting conditions. The studio design included glass ceiling with lighting color control simulating daylight, fluorescent and tungsten conditions. Norman Macbeth and 'Tiny' Erickson were most helpful in suggesting lamp specification. Automotive styling at that time had a strong interest in maintaining good color matching of fabric and paint of cars in daylight, showroom or night street lighting. Helen Taylor and Roland Derby, Jr. gave

us an excellent insight of the metamerism problems in the fashion and household fabric markets to generate momentum to apply a common chemistry to create suitable fabric dyes and coating pigments. The first commercial offer of this colorful spectral match generated an unusual surge in popularity that endured for several years. This was an unexpected disclosure of a possible new factor in public color preference.

(4) FATIPEC- SPA disclosed a vigorous activity in England and Denmark by paint people to exploit the Kubelka mathematical conclusions of Franz Munk's studies of the variability in lithopone hiding power. We found our European counterparts were in full agreement with our recent observations that reliable formulations of pigmented color blends could be made from predetermined absorption and scattering coefficient measurements of individual opaque single pigment dispersions. Reduction to practice was instantaneous. The need for visual control in new color formulation and batch adjustment in manufacture was rapidly evaporating with this new concept (1955).

(5) The broadened spectrum of colors and automotive manufacturers demanded an unreasonable level of repair coatings inventory at a time coincident with major ungrading of skills in the area of color control of coating manufacturing intermediates. This enabled a level of mixing machine color control to satisfactorily duplicate the quality of the factory manufactured product for repair operations (1955).

(6) The climactic application of this new color control and formulating capability was in the design and preparation of an organized color display representing the full gamut of colors needed for automotive color selection. ("No more of this-bring me back"; "another suggestion", "a little bit pinker"; "darker"; "grayer", etc.) The display was to be a major feature of the GM Styling building under construction at their new Technical Center. Ralph Evans suggested that we might want to take a look at Bob Burnham's recent work on color memory. GM Styling agreed on spacing by memory of the same color on the opposite side of the street. 2328 batches were produced, without shading, against colorimetric specification from standardized single pigment intermediates. This color order system, internally designated as a "Classified Color Selector" was effectively used for over two decades I have been told - maybe still. Reference: OSA, March 7, 1957 Meeting, Invited Paper T3.

As a major manufacturer and supplier to color-oriented markets, e.g., pigments, dyes, plastics, textile fibers, coatings; the DuPont Company, as an entity, was a formidable resource of scientific, technical and market information which was effectively used as needed in our color

development, manufacturing and marketing activities. We were also endowed with a management that encouraged outside exposure and responded well to our internally generated needs. ISCC served us as a valuable website.com to enable us to chat with the outside color world as an important resource for new or better ideas, confirmation or verification of our objectives and conclusions as well as measurement of our progress in a very competitive arena. I have always considered the 1945-1955 decade as the era of application of earlier principles of color technology to the industrial world and found great satisfaction in the privilege of participation.

Over this period, I most appreciated the opportunities to freely chat with warm, friendly experts and authorities. I would very much hope that ISCC could maintain that atmosphere as a preferred alternative to the trend of sitting in cubbyholes searching for information and ideas by electronic impulse.

Respectfully,
Ralph E. Pike (signed)

Editor's Note: This contribution explicitly expressed gratitude to members of the ISCC who were not at DuPont. Of course, there were many at DuPont who contributed to solving problems in color as members of the ISCC. I, personally can recall people from DuPont with whom I worked as members of the many Project Committees.

FEDERATION OF SOCIETIES FOR COATINGS TECHNOLOGY

From October 18-22 in Dallas, TX, join with representatives from over 50 countries for the premier event of the coatings industry: ICE '99! To be held in the Dallas Convention Center. This event not only features the world's largest coatings manufacturing exhibition of raw materials, equipment, and services, but also provides the widest variety of educational opportunities for advancing your knowledge and professional development in the coatings industry. ICE '99 combines three major industry events: the International Coatings Technology Conference, the 77th Annual Meeting of the Federation of Societies for Coatings Technology, and the International Coatings Expo.

The International Coatings Technology Conference will offer diverse, concurrent and interactive educational programming, featuring five two-day and six one-day programs, in addition to an Executive Fo-

rum. There is a separate registration fee to attend the courses and may be limited, so early registration is recommended. The planned topics include:

Two-Day Courses: Doubling Profitability by Eliminating the Constraints on Manufacturing; Polymer Chemistry for the Coatings Formulator; Compliance Methods for VOCs and HAPs of Paints and Other Products; Faster to Market with Better Products through Design of Experiments; and Principles of Paint Formulations. **One-Day Courses:** Understanding Additives for Waterborne Paint; Formulating Substrates and Coatings; Characterization of Coatings; Introduction to Coatings Technology for the Non-Technologist; Fundamental Water-Based Ink Technology; Applications Workshop; and Executive Forum: Managing, R&D for Strategic Success in the Coatings Industry.

Also to be featured is the FSCT 77th Annual Meeting and Technical Programs. General Sessions will feature a variety of technical presentations including practical information to be used immediately in the work place. Topics to be included: Resin Technology for the Next Millennium, Part 1: (Thermoplastic Polymers); Resin Technology for the Next Millennium, Part 2: (Thermosetting Polymers) Coatings Testing, Part 1: (Appearances/Surfaces) Coatings Testing, Part 2: (Characterization/Processing) Coatings and the Environment Latin American Forum.

At ICE '99, the Latin American Forum will feature Spanish presentations focusing on a number of environmental issues currently confronting (or soon to be), participants from the Latin American countries. Other programs include Roon Award papers as well as general coatings papers. The program will also include the Mattiello Memorial Lecture, Technical Focus Lecture, Voss/Banov Award Competition Papers, Poster Session, and International Papers. The International Coatings Expo will be offered from Oct. 20 through Oct. 22. The top technical and sales staffs of more than 325 supplier companies will be available to discuss the latest industry advances. The Expo, a coatings industry tradition since 1932, encompasses the spectrum of coatings manufacturing, testing, and application. Headquarters for ICE '99 will be the Adam's Mark Hotel. Other Dallas hotels

will offer special rates. Info: FSCT, 492 Norristown Rd., Blue Bell, PA 19422 Tel:610-940-0777 Fax:610-940-0292 fsct@coatingstech.org

CYAN REVISITED

The color cyan was once known as corn blue when it was actually made from cornflowers, from its petals. It was the scientist named Boyle who recommended this source of dye. It was recommended for water colors, but this color could not be supplied commercially. (R. D. Harley, Artists Pigments 1600-1835 Butterworth London 1970 p. 61). For commercial purposes, cyanide had to be used, hence the name cyan. After a series of reports of poisoning through the use of cyan in Lyon in 1860, where this color was added to pills that were meant to purify water, and in Paris in 1850 where its use in making silk flowers led to deaths, as well as poisoning from magenta in lithographic printing, both colors were discontinued, but the names were revived when color photography became popular. It was meant to separate the "technical" artists of photography who were shunned by the traditional art world, and to give them their own color names. Again, these names were revived by the computer graphics folk, although the art world never did use these names as references. Again, the computer folk felt it was an "technical" upmanship since the art world at first rejected computer generated art.

You may be interested to know that as early as 1983, I questioned why the computer world took on new names for colors. I delivered a paper at the International Computer Color Communication Conference in Tallahassee Florida called Don't Step On My Metaphor. At that time, the crew from Alexander Shure's lab at the NY Institute of Technology admitted that they were riding slipshod over the existing art world and did not care. Both Disney and Barbara had turned them down, and they would prove they could create their own path, and call colors what they wanted. The name came from old photography books. Computer graphics was technical like the camera. There seemed to be a connection. The last use of the word Cyan was in photography at the turn of the century, because that was how the color blue could be developed, with the use of the cyanide compound.

Odeda Rosenthal

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:

1. This service is for ISCC members' use only.
2. No more than 50 words may be used to describe yourself. (Not including name, address and/or telephone number.)
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. If you have any suggestions/criticisms, please send them to the editor. Let's make this work!

NTS/XXCAL is a technical staffing company in Austin, Texas. We are representing an emerging technology company founded in 1995 who is committed to creating innovative technologies to facilitate the transition from traditional to digital photography. If you are interested in exploring the exciting opportunities available to talented engineers and Developers at this Austin start-up, please forward your resume and contact us for more information. We are looking for:

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- Windows & Macintosh Programmers

NTS▼XXCAL

Please send your resume to:

Kathy Golden, kgolden@ntsxxcal.com
or call 800-442-9225 for more information.

CALENDAR



Please send any information on Member-Body and other organization meetings involving color and appearance functions with dates, places, and information source to:

Cynthia Sturke, ISCC Office
11491 Sunset Hills Rd.
Reston, Va 20190

tel: 703-318-0263
fax: 703-318-0514

email: iscc@compuserve.com
website: <http://www.iscc.org>

1999

OSA ANNUAL MEETING, September 26-October 1, 1999, Optical Society of America, Santa Clara, CA, Info: OSA, tel: 202-223-0920, confserv@osa.org.

BULCOLOR '99, Oct 8-10, Color Group-Bulgaria, Intl Color Conf., Color in All Directions. Varna, Bulgaria Tel: +359 2 88 40 75; Fax: +359 2 987 93 60
email: ime@mb.bia-bg.com

TAPPI, Oct. 17-22, Technical Association of the Pulp and Paper Industry; Conference, Omni Durham Hotel, Durham, N.C, info: Lisa Archer, Tel: 800-332-8686x225

FSCT ANNUAL MTG TECHNICAL PROGRAM
Oct 20-22, Dallas, TX. Info: Rod Moon, 610-940-0777; Fax: 610-940-0292, rodm@coatingstech.org

AATCC, INTL CONFERENCE AND EXHIBITION, Oct. 12-15, American Assoc. of Textile Chemists and Colorists, Conv. Center, Charlotte, NC, Info: Hilda McQueen, Tel: 919-549-3549; Fax: 919-549-8933;
email: mcqueenh@aatcc.org <http://www.aatcc.org>

COLOR MARKETING CONFERENCE, October 24-26, 1999, Palm Springs, CA Info: Tel: 703-329-8500

IS&T/SID 7TH COLOR IMAGING CONFERENCE, Nov. 14-17, Color Science, Systems & Applications, SunBurst Resort Hotel, Scottsdale, AZ. Tel: 703-642-9090 Fax: 703-642-9094 info@imaging.org; www.imaging.org

ASPRS CONFERENCE PECORA 14/LAND SATELLITE INFORMATION III, December 6-10, "Demonstrating the Value of Satellite Imagery" DoubleTree Hotel, Denver, Colorado. Contact: 301-493-0290; fax 301-493-0208; <http://www.asprs.org>

2000

ASTM COMMITTEE D-1, Paint, and Related Coatings, Materials & Applications, Jan.23-26 Hyatt Regency, New Orleans, LA Info: T. Brooke, Tel: 610-832-9729; Fax: 610-83-9666; email: tbrooke@astm.org

ASTM COMMITTEE E-12 Color and Appearance, Jan 25-28, Hyatt Regency, New Orleans, LA, Bode Buckley: tel: 610-832-9740; fax: 610-832-1547; bbuckley@astm.org

ISCC 2ND PANCHROMATIC CONFERENCE, Feb 19-21. Color In Its Surround; Savannah, GA. Dr. Cynthia Brewer, 814-865-5072; Fax: 814-865-7943

ISCC ANNUAL MEETING & CPMA COLOR PIGMENTS CONFERENCE; April 16-18, ISCC and Color Pigments Mfg Assoc., Charlotte, N.C., Info: Romesh Kumar, Tel: 410-823-2161

COLOR MARKETING GROUP CONFERENCE, April 30-May 2, 2000 San Diego, CA Tel: 703-329-8500

SID 2000, May 14-19, Society for Information Display Long Beach CA, Info: SID, Tel: 714-545-1526; socforinfodisplay@mcimail.com <http://www.sid.org>

ASPRS ANNUAL CONFERENCE, May 22-26, Omni Shoreham Hotel, Washington, DC. 301-493-0290; fax: 301-493-0208; www.asprs.org

ASTM COMMITTEE D-1, Paint and Related Coatings, Materials and Applications, June 11-14, Ascagua's Nugget, Reno, NV Info: T. Brooke, Tel: 610-832-9729; Fax: 610-832-9666; email: tbrooke@astm.org

ASTM COMMITTEE E-12 Color and Appearance, June 20-23, Sheraton Hotel, Toronto. bbuckley@astm.org Info: Bode Buckley: 610-832-9740; Fax: 610-832-1547;

AATCC INTL CONFERENCE AND EXHIBITION, Sept. 12-20, American Assoc. of Textile Chemists and Colorists, Benton Conv. Ctr, Winston-Salem, SC, Hilda McQueen, Tel: 919-549-3549; Fax: 919-549-8141, mcqueenh@aatcc.org www.aatcc.org

CGIP 2000, Oct. 1-4, Intl Conf. on Color in Graphics and Image Processing. St. Etienne, France. Contact: Alain Tremeau tremeau@vision.univ-st-etienne.fr Kenneth Knoblauch knoblauch@vision.univ-st-etienne.fr <http://www.univ-st-etienne.fr/~iupvis>

OSA ANNUAL MEETING, October 20-28, Providence, R.I. Information: confserv@osa.org

IS&T/SID 8TH COLOR IMAGING CONFERENCE Nov. 6-10, Color Science, Systems & Applications, SunBurst Resort Hotel, Scottsdale, AZ. Tel: 703-642-9090 Fax: 703-642-9094 info@imaging.org; www.imaging.org

2001

ASTM COMMITTEE E-12, Color and Appearance, Jan 23-26, Embassy Suites, Ft. Lauderdale, FL. Bode Buckley, 610-832-9740; Fax: 610-832-1547; bbuckley@astm.org

ASTM COMMITTEE D-1, Paint and Related Coatings, Materials and Applications, Jan. 23-26, Info: T. Brooke, Tel: 610-832-9729; Fax: 610-83-9666; tbrooke@astm.org

ASPRS ANNUAL CONFERENCE, April 23-27, St. Louis, MO, Contact: 301-493-0290; Fax: 301-493-0208 www.asprs.org

ISCC/AIC MTG, June 24-29, ISCC and Association Internationale de la Couleur, Rochester Riverside Conv. Ctr, Rochester, NY; Info: Paula J. Alessi, 716-477-7673; Fax: 716-722-1116 pjalessi@kodak.com

COLOR MARKETING GROUP CONFERENCE, October 29-31, 2000 Boston, MA Tel: 703-329-8500

IS&T/SID 8TH COLOR IMAGING CONFERENCE Nov. 5-9, Color Science, Systems & Applications, SunBurst Resort Hotel, Scottsdale, AZ. Tel: 703-642-9090 Fax: 703-642-9094 info@imaging.org;

ADVERTISING POLICY

The ISCC advertising policy for the Inter-Society Color Council News is as follows Pre-paid color-related advertising will be accepted thirty days in advance of the publishing date. The rates are

\$ 100	business card-size ad
\$ 250	1/4 page ad
\$ 500	1/2 page ad
\$1,000	full page ad

Artwork must be publisher ready and will be returned within 30 days after publication. The publishers reserve the right to determine the acceptability of the advertising. There is a 20% discount offered for a yearly contract. For further information contact: Tek Celikiz, ISCC News Editor or Cynthia Sturke, ISCC Office.

SUSTAINING MEMBERS

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Chromatics Color Sciences Intl, Inc.	Tel: 202-717-6544	Minolta Corporation	Tel: 201-934-5291
DuPont Automotive Products	Tel: 248-583-8345	PPG Industries, Inc.	Tel: 724-274-3532
Hunter Associates Laboratory, Inc.	Tel: 703-471-6870	David L. Spooner, dba rhoMetric Assoc., Ltd.	Tel: 302-764-9045

**NEW SUSTAINING MEMBERS:	Color Communications, Inc.	Tel: 773-638-1400
	Ciba Specialty Chemicals	Tel: 302-633-2042
	Barr Associates, Inc.	Tel: 978-692-7513

ISCC MEMBER-BODIES

American Association of Textile Chemists and Colorists (AATCC)	Graphic Arts Technical Foundation (GATF)
American Society of Interior Designers (ASID)	Human Factors & Ergonomics Society (HFES)
American Society for Testing and Materials (ASTM)	Illumination Engineering Society of North America (IESNA)
American Society for Photogrammetry & Remote Sensing (ASPRS)	National Association of Printing Ink Manufacturers (NAPIM)
The Color Association of the United States, Inc. (CAUS)	Optical Society of America (OSA)
Color Marketing Group (CMG)	Society for Information Display (SID)
Color Pigments Manufacturing Association (CPMA)	Society of Plastics Engineers, Color & Appearance Div.(SPE)
Council on Optical Radiation Measurements (CORM)	Society for Imaging Science and Technology (IS&T)
Detroit Colour Council (DCC)	Technical Association of the Graphic Arts (TAGA)
Federation of Societies for Coatings Technology (FSCT)	Technical Association of the Pulp and Paper Industry (TAPPI)
Gemological Institute of America (GIA)	

****New Member-Body: Graphic Communications Association (GCA)**

OFFICERS 1998-2000

Position	Name	Address	email	Telephone	Fax
President	Dr. Michael H. Brill	Sarnoff Corporation CN 5300, Princeton NJ 08543	mbrill@sarnoff.com	609-734-3037	609-734-2662
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Secretary	Mr. Rich Riffel	Hunter Associates Laboratory, Inc. 11491 Sunset Hills Rd., Reston, VA 20190	rriffel@hunterlab.com	703-471-6870	703-471-4237
Treasurer	Mr. Hugh Fairman	503 Bradley Court, Princeton, NJ 08540	resourceiii@erols.com	609-430-1630	609-430-1618
Past-Pres.	Dr. Ellen C. Carter	Minolta Corporation 101 Williams Rd. Ramsey, NJ 07446	ecarter@minolta.com	201-934-5228	201-825-4374

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ISCC MAY 1999 ANNUAL MEETING VANCOUVER SALMON FEST



Kelli Sue Pope and Kim Schenter



New ISCC Member Russell Dodd



Joann Taylor, Britt Nordby



Mark Coulbourne



Helen Epps and Carlise Bynum



Cindy Brewer and Jack Ladson



Peter McGinley and Bill Gresho



Elaine Becker, Ellen Carter and Patricia Johnson



Hugh Fairman, ISCC Treasurer



Yan Liu, L. Chung and T.R. Lee



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