

Inter-Society Color Council *News*

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PRESIDENT'S COLUMN

This month of May completes my first year as President, and also marks the half way point of the six year commitment of Presidential cycle. I must admit that when I agreed to run for office, I had some trepidation that I would not be up to the task.

However, I must admit that the active members of the ISCC, whether they are board members, committee chairs, or just loyal members, has made the job not only doable, but interesting and enjoyable. Thus, let me take this column to reflect upon how much my job has been made easier by all the kind people supporting the ISCC.

At the April 12, 1997 Board of Directors Meeting, the board approved the Committee's recommendation to recognize Ann Campbell Laidlaw for her outstanding service to the Society by giving her the 1997 Nickerson Service Award. Please read the other article in this issue about Ann, but let me add that Ann has been a wonderful source of information on how things are done, and what to do next. She has been a key person in guiding the early stages of the ISCC office set up. We are happy to have the opportunity to thank Ann at the Annual Meeting in September, and also to thank SheLyn for allowing her to support us.

Also at the board of Directors Meeting, Cynthia Sturke reported that we have a new sustaining member. Hunter Associates Laboratory, joins our other two current sustaining members, BYK Gardner and Labsphere. We appreciate the financial support of our sustaining members, and also appreciate the commitment they have shown to the ISCC. It probably isn't pointed out often enough just how much some companies do for the ISCC. Since it is our newest sustaining member let us take Hunter Associates Laboratory for example. Phil Hunter served as ISCC Treasurer for six years from 1988 to 1994. And I must add that Treasurer is no small task. In addition, he was instrumental in initiating of the ISCC office. Even today Hunterlab provides the space for the ISCC office, not to mention company and moral support for Cynthia Sturke, our office manager. Other people at Hunter have also done much for the ISCC, Mary Ellen Zuyus served as both Newsletter Editor and Publicity Chair, and currently Richard Herald is Chair of the Interest Groups Committee and Problems Committee Chair. As President, I personally want to thank Phil Hunter and all the people from Hunter Associates Laboratory.

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The Inter Society Color Council wouldn't be what it is today without the support of the many companies committed to color, who allow their people to contribute much time and effort to the ISCC. I cannot possibly name them all, but in addition to the three above, let me mention some other of the recent contributions. SheLyn has been the source for the current Past President, Roland Connelly, as well as Ann Laidlaw, whom I mentioned above. From Datacolor International, comes Danny Rich, who has served as Secretary since 1990. Eastman Kodak has shown long time involvement, not only contributing our most recently retired Past President, Paula Alessi, but also many other loyal members such as Ralph Evans who served as secretary for 18 years, (from 1952 until 1970!), and Bonnie Swenholt a Newsletter Editor. To all these and the many other

supportive companies, our thanks.

Individuals, also, contribute so much. Some have continued to be involved on their own, even after retiring from the supportive companies, or decided to do things on their own. Here I want to mention Hugh Fairman, who took on the job of Treasurer, after serving six year presidential cycle, and also working on numerous committees and projects, and Joy Luke, who even without ever having a company behind her, has been and continues to be committed to the ISCC. The individuals and companies throughout the field of color make the Inter-Society Color Council what it is today, and have made my experiences thus far, rich and rewarding. I appreciate all your help and support, and look forward to seeing all of you at the Annual Meeting in September in Baltimore.

Ellen C. Carter, President, ISCC

IN THIS ISSUE, COLOR RESEARCH AND APPLICATION

June 1997

Our first article in the June issue is "Suprathreshold Color- Difference Ellipsoids for Surface Colors" by M. Melgosa, E. Hita, A. L. Poza, D. H. Alman and R. S. Berns. It describes a new set of nineteen ellipsoids derived from a color-tolerance dataset known as the RIT-DuPont data set. Some readers may ask why ellipsoids such as these are so important. Ellipsoids form the raw material that is used by researchers when they try to develop and verify uniform color space, color difference metrics, and the conformance between other mathematical models and visual data. Each ellipsoid represents, in mathematical terms, the synthesis of a large number of visual observations around one color center. One of the earliest, and probably the most famous, sets of color ellipsoids was derived by MacAdam from the P. G.

Nutting visual data first published in 1942. That set has been discussed and analyzed by researchers for over 50 years. However, the color community is still eager to have additional ellipsoids, particularly of surface colors, that represent either different parts of color space, the same chromaticity points at new lightness levels, or that can be used to verify metrics that have been derived by optimizing that data of earlier ellipsoids. In 1978, the CIE identified five color centers of particular interest for further study. These five colors are included in the nineteen described in this article. Thus, the authors can and do compare the newly reported ellipsoid to those recently described by other researchers.

Numerous articles have appeared in this journal throughout the 1990s related to color-appearance models, their development and applications. Two more articles in that category are in this issue. In the first article, Yoshinobu Nayatani examines the chromatic adaptation transform in the RLAB color-appearance model. He notes a systematic deviation in the predicted results of corresponding color when transformed using Hunt's

coefficients if there is incomplete adaptation. In "Examination of Adaptation Coefficients for incomplete Chromatic Adaptation," Dr. Nayatani explains the reason for the deviation and proposes a correction method.

In the next article, Karen M. Braun and Mark D. Fairchild describe "Testing Five Color- Appearance Transforms for Changes in Viewing Conditions." The goal of this research was to determine which color-appearance transformation most accurately predicted color matches for a wide range of viewing conditions where surround, background, luminance level, and white point are varied. The color-appearance models tested include the CIELAB color space, the Hunt model, the Nayatani model, RLAB, and the von Kries chromatic adaptation transform. Printed images were used as the originals and five color-appearance models were used to produce "matching" reproductions on a CRT display. Then observers participated in paired-comparison psychophysical experiments evaluating the reproductions.

In the next article, also dealing with experiments involving color reproductions, both photographic prints and projected slide images were compared to images on a CRT display. However, in this case the goal of the experiment was completely different. The authors wanted to answer the question, "How close to the original does one have to get when searching for an optimum expression for predicting colors in a different medium?" When the model accuracy approaches the variations in the judgment of the same reproduction by different normal observers, then there is no benefit to further refinement. Therefore, the judgments of 20 observers and 20 repeated judgments of one observer were used to determine the inter-observer and intra-observer uncertainty of color-match predictions. In "Observer Variability in Metameric Color Matches Using Color Reproduction Media," Richard L. Alfvén and Mark D. Fairchild describe the experiments and their results and

provide a quantitative estimate of the limit of the accuracy of cross-media reproduction.

In 1992, William A. Thornton published the first three parts of a series of articles called, "Towards a More Accurate and Extensible Colorimetry." In these articles, he described a visual colorimeter-spectroradiometer and a series of experiments he had completed using that instrument. Among other things, he reported large errors in computed tristimulus values (using the 1964 CIE Standard Observer) for lights judged to be matching in his apparatus. Since that time, Dr. Thornton performed new experiments to elucidate the causes of these errors. Now, in Part IV of "Toward a More Accurate and Extensible Colorimetry," Dr. Thornton reports on this continuing research. In this part, experiments that extend the measurements of visual matches of pairs of highly metameric lights to brighter fields at both 10° and 1.3° field sizes are described and discussed.

In the Classical Articles in Color section, we go back to the eighteenth century for an early demonstration of color perception. In May of 1789, G. Monge gave a lecture and demonstration at the Académie Royale des Sciences on the appearance of colored objects when viewed through transparent colored materials. John Mollon described Monge's demonstration and insight in his Newton lecture "Seeing Colour," which was published in *Colour Art & Science* [for a review of this book, see Vol. 22, 65, 1997]. G. Monge published the memoir in the same year as the lecture in the *Annales de chimie*, a journal that he helped to found. Now Rolf G. Kuehni has done a great service to the color community by writing a commentary on the memoir and translating G. Monge's "Mémoire sur quelques phénomènes de la vision."

This month's Color Forum is on "Virtual Colour: Communication Standard and Analytical Tool." In this forum, Neville S. Smith and Fred W. Billmeyer, Jr. envision a computer-based "virtual" color specification system that will provide for accurate

color communication and reproduction. It is proposed that the CIE system, with its associated color

space, will act as communication bridges among unique color models developed by individual users and

(Continued on Page 4)

LAIDLAW SELECTED TO RECEIVE ISCC NICKERSON SERVICE AWARD

It is with great pleasure that the Inter-Society Color Council (ISCC) announces the selection of Ann Campbell Laidlaw to receive its Nickerson Service Award. The award will be presented during the ISCC's Annual Meeting to be held at Marriott Inner Harbor in Baltimore, MD on Sept. 14-17, 1997. The presentation will take place at the business meeting on Monday, Sept. 15.

The ISCC Nickerson Service Award was established in 1980 to recognize outstanding long-term contributions toward the advancement of the ISCC and its aims and purposes. The contributions may be in the form of organizational, clerical, technical, or other services that benefit the ISCC and its members. The Award is named to honor the late Dorothy M. Nickerson, a founding member of the ISCC, its Secretary from 1938 to 1950, and its President from 1954 to 1956.

Ms. Laidlaw, the Manager of Applications at SheLyn, Inc. in Greensboro, NC, becomes the eleventh recipient of the Nickerson Service Award. She has served on the ISCC's Board of Directors, was the Membership Chairman from 1990 through 1995, and chaired the 1995 Annual Meeting in Greensboro, NC. Ms. Laidlaw has been an invaluable resource in setting up the ISCC's new office in Reston, VA.

Ms. Laidlaw received her BS in Textile Science from the UC-Davis, and her MS in Textile Chemistry from Clemson University. She serves as a delegate to the ISCC from the American Association of Textile Chemists and Colorists and chair of their RA 36 Research Committee on Color Measurement. Ms. Laidlaw is also a member of the Council for Optical Radiation Measurements.

Prior to joining SheLyn, Ms. Laidlaw worked in the Color Science Laboratory of Burlington Industries. Her interests in color include video color rendition, spectrophotometry, color difference measurement and instrumentation including calibration issues, textile measurement and formulation.

The 1997 Annual Meeting will be a joint meeting with the Society of Plastic Engineers, who will hold their Regional Technical meeting (RETEC) on Sept. 16-17, 1997. For more information about attending the ISCC Annual Meeting and the following RETEC, please contact Gary E. Beebe at 215-785-8497.

Visit the ISCC home page at <http://www.iscc.org>.

Contact: Dr. Robert T. Marcus
ISCC Publicity Chairman
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100 South Mitchell Rd.
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972-988-4215

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tailored to their specific needs and materials, even at different installations of the software possibly in distant parts of the world.

Finally, we close this issue with three items in the Communications and Comments section. First is a description of the new M.A. Degree in Colour Design at the University of Art and Design, Helsinki, YIAH, Finland, written by Herald Arnkil and Harold Linton. The other two items make up an exchange between Heinwig Lang and Michael Brill following Brill's Color Forum article, "Do Tristimulus Values Have Units?", which was published in Vol. 21, 310-313, 1996. Dr. Lang, who works for Philips Broadcast Television Systems, ICC Weiterstadt, Germany, asks "How Much Physics Does Colorimetry Really Need?" and then Dr. Brill responds with "Units Dimensions, and Physics in Colorimetry: a Reply to Lang."

Ellen C. Carter
Editor
C R & A

NEW MEMBERS

The following is a list of new members approved during the winter and spring board meeting.

Ms. Enid A. Allen, Macbeth Division of Kollmorgen Instruments Corp., 2105 Thomas Run Road Bel Air, MD 21015; tel: 410-893-0202, fax: 410-893-0205 e-mail:

103506.123 @compuserve.com.

Particular interests: New applications, processes and communications

Mr. Andreas Ullrich; Minolta (Schweiz) AG., Riedstr. 6, CH 8953 Dietikon, Switzerland tel: (01)-740-2737; fax: (01)-742-2350; e-mail: aullrich@minolta.ch, particular interest: color measurement technology.

Ms. Lynn AugStein; Las Design, 3 Wolfback Terrace, Sausalito, CA 94965; tel: 415-332-3323, fax: 415-332-2362 - call first, particular interest: human response to the colors in the environment/the science & art overlap health care Schools, Day care, Prisons.

Ms. P. Yvonne Barnes; (NIST) National Institute of Standards & Technology; 1-270 & Clopper Rd., Metrology 220 - Rm A 305; Gaithersburg, MD 20899; Tel: 301-975-2345, fax: 301-840-8551, e-mail: yvonne.barnes@nist.gov., particular interest: bidirectional characterization of materials that effect color.

Ms. Marcie Britt, TRW Vehicle Safety Systems, Mesa I Facility; 4051 N. Higley Rd.; Mesa, AZ 85215-1200,

Mr. Joseph C. Brown, Vidar Systems Corp., 460 Spring Park Place, Suite 900 Herndon, VA; tel: 703-471-7070 fax: 703-471-1165; e-mail: brownjc@vidar.com; particular interest: color reduction

Mr. Jeffrey M. Crowley, TRW Vehicle Safety Systems, Mesa I, 4051 N. Higley Rd., Mesa, AZ 85215; tel: 602-396-1488; fax: 602-396-1281, particular interest: acceptance criteria (Ford CQI)

Prof. Cynthia Maris Dantzig, Long Island University & The Cooper Union, Brooklyn Campus, Univ. Plaza, Brooklyn, NY 11202 tel: 718-488-1051

Particular Interest: Color interaction & visual perception, has written the illustrated entry on Color Interaction for the new 34 volume Dictionary of Art.

Ms. Lynda M. Doyle, Roche Vitamins & Fine Chemicals, 45 Eisenhower Dr., Paramus, NJ 07652, tel: 201-909-6734, fax: 201-909-8414, particular interest: use of color in food products, new colors available to market.

Mr. James Enge; IRIS Graphics; 6 Crosby Dr., Bedford, MA 01730; tel: 617-276-5429; fax: 617-276-5332; e-mail: jim_enge@iris.scitex.com.

Ms. Susan Farnand; Eastman Kodak; 34 Mountain Rise, Fairport, NY 14450; tel: 716-223-7329; fax: 716-726-7670; e-mail: spf@kodak.com; particular interest: color appearance, color modeling.

Mr. Curt Fritzeen; Steelcase, 4 Columbus Circle, New York, NY 10019; tel: 212-445-8945; fax: 212-445-8868; particular interest: using color to enhance the built environment.

Ms. Laura Gomez; TRW Vehicle Safety Systems, Mesa I Facility 4051 N. Higley Rd., Mesa, AZ 85215-1200

Mr. Harvey Gough; Colour Technologies Australasia, P. O. Box 1150, Mountain Gate, Victoria, 3156, Australia; tel: +61-3-9752-3766; fax: +61-3-9752-3977; email: hjg@melbpc.org.au. particular interest: colour management, colour education & training.

Mr. David M. Johnson, Eagle Ottawa Leather Co. 200 N. Beechtree St., Grand Haven MI 49417 tel: 616-844-9517; fax: 616-842-6571; e-mail: fafnir@macnet.org; Particular interest: eclectic

Dr. Mary K. Killoran, PPG Industries, 3800 West 143rd St., Cleveland, OH 44111, tel. 216-671-7282; fax: 216-671-7976; particular interest: instrumental color measurement, setting meaningful specs vis tolerancing of instrumentally derived #'s visual color matching

Mr. Marc Lacatell, Cape Cod Community College, 144 Forrest Beach Road, South Chatham, MA 02659, tel: 508-432-0295; particular interest: Color theory, art education mix media, pop art.

Ms. Jennifer Laskin, IRIS Graphics Inc., 6 Crosby Dr., Bedford, MA 01730; tel: 617-276-5430, fax: 617-276-5332; email: jennifer_laskin@iris.scitex.com; particular interest: color theory, technology and application.

Mr. Fred Lee Jr., TRW Vehicle Safety Systems, 4051 N. Apache Circle, Mesa AZ 85215; tel: 602-396-1575, fax: 602-807-7476; particular interest: evaluation of the injection molded covers/doors for driver & passenger side air bag assemblies for color match to the auto/truck interior.

Ms. Audrey A. Lester, Eastman Kodak Company, 607 Chambers St., Spencerport NY 14559; tel: 716-352-1525; e-mail: alester@kodak.com

Ms. Debra A. Mackey, Bayer Corp., P. O. Box 118088, Charleston, SC 29453-8088; tel: 803-820-6411; fax: 803-820-6402; particular interest: transparency & hiding power of pigments and paints, how to improve both.

Ms. Wendy Mays, Drake Extrusion, P. O. Box 4868, Martinsville, VA 24115-4868; tel: 540-632-0159 x121; fax: 540-632-0981; particular interest: color matching of pigments, polypropylene fibers used in both textile and automotive applications.

Dr. Manuel Melgosa, Departamento De Optica Universidad De Granada, Facultad de Ciencias campus de Fuentenueva, 18071-Granada, Spain; tel: +34-58-243303; fax: +34-58-243302; e-mail: mmelgosa@goliat.ugr.es; particular interest: color difference equations, parametric factors in color discrimination thresholds, color matching functions, applications (color in soil samples...)

Ms. Constance Melican, Interior Design Student-Learning Tree, 25557 Via Brava, Valencia, CA 91355; tel: 805-259-3959; particular interest: application of color in the home to produce, psychological realm of piece and stimulate healing of individuals living in the dwelling.

Mr. Paul Merritt, AGFA Division of Bayer, 50 Meister Ave., Somerville, NJ 08876; tel: 908-231-5214; fax: 908-231-5209; e-mail: paulm16215@ao1.com; particular interest: color measurement, color tolerancing, color perception, spectrophotometer design

Mr. Juanillo Miel, McCorquodale Color Card - Division of Rexam, 30 Tempo Avenue, Willowdale, Ontario, Canada, M2H2N8; tel: 416-499-1946; fax: 416-499-9365; particular interest: application in architectural design.

Mr. Todd Newman, Silicon Graphics, Inc., 2011 N. Shoreline Blvd., Mt. View, CA 94043; tel: 415-933-1614; fax: 415-932-1614; e-mail: tdn@sgi.com; particular interest: reproduction across media, color appearance models, color in graphics standards

Ms. Donna Nield, University of British Columbia - Graduate Student, (home address); P. O. Box 121, New York City, NY 10013-0121; tel: 212-595-5428; particular interest: color forecasting services

Dr. Jeffrey K. Okamitsu, Datacolor International, 5 Princess Rd, Lawrenceville, NJ 08648; tel: 609-895-7402; fax: 609-895-7461

Mr. Mark Reiman, Eastman Kodak Co., 1700 Dewey Ave., Rochester, NY 14650-1912; tel: 716-477-8805; fax: 716-588-2717; e-mail: reiman@kodak.com; particular interest: color modeling & color management.

Mr. Patrick Revord, TRW, 11202 E. Germann Rd., Queen Creek, AZ 85242-0670; tel: 602-987-6429; fax: 602-987-6525;

Mr. Frank Roa, TRW Safety Systems, 4051 N. Higley Road, Mesa, AZ 85215; tel: 602-396-1543; fax: 602-396-1781; particular interest: how it relates to plastic injection molded parts.

Mr. James Roberts, Duron Paints & Wallcoverings, 10406 Tucker St., Beltsville, MD 20705; tel: 301-937-4700; fax: 301-595-3931; particular interest: as related to paint products - Color availability, VOC, light-fastness, chemical resistance

Dr. Geoffrey L. Rogers, Fashion Institute of Technology, 227 West 27 St., Dept. Of Science and Mathematics, New York, NY 10001; tel: 212-217-7296; fax: 212-598-9650; e-mail: rogersgl@aol.com; particular interest: research on the effect that scattering of light in paper has on tone characteristics of a halftone image.

Ms. Odeda Rosenthal, 2702 Edwards St., Greenville, NC 27858; tel: 919-752-5644; e-mail: 103651.2231@compuserve.com; particular interest: color vision & color blindness.

Ms. Glenda Scott, Unilever Research Laboratories, Colworth House, Sharnbrook, Bedfordshire, England; tel: 44-1234-222108; fax: 44-1234-222409; e-mail: glenda.scott@unilever.com. particular interest: color measurement

Ms. Philippa Seth-Smith, Creative Paint Techniques, 5967 W. Third St., Suite 200, Los Angeles CA 90036; tel: 213-937-2971; fax: 213-937-2972; particular interest: forecast projections, color resource material, color workshops

Dr. Anthony Stanton, Director, Graphic Communications Management, Carnegie Mellon University, GSIA, 5000 Forbes Avenue, Pittsburgh, PA 15213-3890, tel: 412-268-2313; fax: 412-268-6837; e-mail: stanton@andrew.cmu.edu, particular interest: graphic arts, color perception, lighting, color management

Mr. Patrick T. Stapleton; 3M - 3M Center, 888 E. Minnehaha Bldg., 30-1E-01, St. Paul, MN 55144; tel: 612-778-5317; fax: 612-778-4061; particular interest: color combinations, as well as organic color pigment application.

Mr. John Stephan Sultzbaugh, Upper Dauphin Area School District, 261 Romberger Lane, Elizabethtown, PA 17023; tel: 717-362-4345; particular interest: research into the role of color in synthetic phenomena

Mr. David Andrew Watson, Drake Extrusion, P. O. Box 4868, Martinsville, VA 24115-4868; tel: 540-632-0159 x113; fax: 540-632-0981; particular interest: automotive market development.

Ms. Patsy Willis, Cone Mills-North America, Cliffside Plant, Main St., P.O. Box 335, Cliffside, NC 28024; tel: 704-657-5375, fax: 704-657-5375 x224; particular interest: industrial application of color, how it is perceived by our customers-relating production shipments to acceptable color differences that meet customer requirements - changes in lighting from CWF & what it means to denim producers, tapers for customers.

Mr. Scott White, Duron Paints and Wallcoverings, 10406 Tucker St., Beltsville, MD 20705; tel: 301-937-4700 ext: 3093; fax: 301-595-3931; particular interest: theory and application to uses in determining color, color difference, and relation to human sight.

Mr. David R. Wyble, RIT Munsell Color Science Laboratory, 807 Winifred Drive, Webster, NY 14580; tel: 716-475-7310; fax: 716-475-5988; e-mail: drwpci@rit.edu; particular interest: halftone printer modeling, effects due to paper and surface features, color measurement.

BETTER PRODUCE THROUGH COLOR

Penn State Professor Michael Orzolek has been experimenting with the effects of color on crop growth. Last summer in Rock Springs, PA the Professor doubled the yield in tomatoes by covering the field with red plastics. For some years now part time farmers when growing vegetables have covered that area of the field where they were growing vegetables with black plastic. This minimized the growth of weeds as well as water the crops.

Research into the use of colors on plants goes back to 1960. In 1980 soil researchers at Clemson University resurrected the use of color over the produce. They believed that the growth regulator in plants is a substance called phytochrome. Phytochrome is a plant pigment molecule that is activated and deactivated by certain wavelengths of light and functions in seed germination, flowering, leaf expansion and other processes of plant growth.

By 1991 scientists had seen 10-15 percent yield increase in produce with the use of some colored mulch. Prof. Orzolek started his experiments with color in 1990. The trick was to find out which plants responded to what colors; i.e. squash responds to black while cantaloues and melons respond to silvery gray and tomatoes to red color.

Robert Marvel has been experimenting with color for the last nine years. He planted cantaloupes and watermelons in a field covered with green plastic and observed the ripening of cantaloupes and watermelons one to two weeks earlier

than usual. He has been farming in Central Pennsylvania and states, "It is astounding when I look at it, it's unbelievable, it is like science fiction." Referring to the phenomenal growth.

Not all farmers seem to have such success. One farmer did not seem to see much increase in his peppers, covered his field with red, blue and yellow plastics last year. James Welshans who is with the agricultural extension at Penn State U. noted; "people are not really convinced as yet that this color theory with the growth of produce is very feasible. Change is tough to come by, we still have people who won't wear seat belts."

This article is condensed from the Sunday Gazette, Schenectady, NY, March 16, 1997.

This editor thanks Fred Billmeyer for bringing the article to his attention.

THE COLORS OF INVENTION: A FALL SYMPOSIUM

The Smithsonian Institution's Jerome and Dorothy Lemelson Center for the Study of Invention and Innovation presents, "Colors of Invention: A Fall Festival," third in a series of annual fall symposia, New Perspectives on Invention and Innovation. From Nov. 13-16, 1997, this program of workshops, tours, children's activities, films, symposia, demonstrations, and other public events will explore the interaction of technology, perception and culture, bringing us closer to understanding how and why we create colors to shape our existence.

Each day of "Colors of Invention" will resolve around a specific color—as they relate to textiles, paints and pigments, and imaging technologies. Indigo was chosen to represent the colors produced from natural materials in the 18th to early 19th centuries. Mauve will bring our story up to early

20th century developments in synthetic colors. And **neon green** will highlight the colors surrounding us today.

Some of the events currently being considered include textile **workshops and tours** of the museum's extensive costume collections; **hands-on activities** for kids of all ages, ranging from tie-dyeing to color photography to computerized paint programs to creativity with crayons; a **symposium** on the evolution of color photographic processes; a film series focusing on topics from the invention of Technicolor to colorization and computer-generated animation; a **tour** of historic houses that have had their original — and often controversial — color schemes restored; **demonstrations** by makers of current color technologies and the people who use them; and an **exhibit** on the role of color in the design of everyday things.

The Jerome and Dorothy Lemelson Center for the Study of Invention and Innovation was founded in 1995 at the Smithsonian Institution's National Museum of American History through a generous gift from the Lemelson Foundation. The Center's mission is to document, interpret, and disseminate information about invention and innovation, to encourage inventive creativity in young people, and foster an appreciation for the central role invention and innovation play in the history of the United States.

The Jerome and Dorothy Lemelson Center for the Study of Invention and Innovation, Smithsonian Institution, Washington, D.C. 20560

AMERICAN ASSOCIATION OF TEXTILE CHEMISTS AND COLORISTS 1996 ANNUAL REPORT RA36 RESEARCH COMMITTEE ON COLOR MEASUREMENT TEST METHODS

Test Methods - Evaluation Procedure 3: *AATCC Chromatic Transference Scale* and Evaluation Procedure 4: *Standard Depth Scales for Visual Depth Determination* were both submitted for publication following successful committee letter ballot. RA36, Color Measurement Research Committee assisted RA98, Research Committee on Assessment of Dye Strength and Shade with balloting of a new test method for *Determination of Relative Color Strength of Dyes in Solution*.

Publications - The popular Color Technology in the Textile Industry book is revised and the 2nd edition will be out this summer. Another subcommittee is developing a videotape demonstrating proper use of the Gray Scale and Chromatic Transference Scale. The Committee is investigating the possibility of re-issuing the Glenn Color Rule with either existing or new fabrics.

Other Business - (1) Committee discussed the problem of replacing lamps for CWF. New, low-energy lamps may become widely used in retail and manufacturing environments, but they introduce significant metamerism for many color difference comparisons. Some manufacturers have reported Spectral Power Distribution (SPD) data

for their lamps. Representatives from industry spoke to RA36 concerning this subject at the Nov. 19, 1996 meeting. (2) RA36 members hosted two successful sessions of the popular Color Measurement Workshop at the AATCC Technical Center, Jan 9-10, 1996 and Oct. 22-23, 1996. Another session is scheduled for Oct. 28-29, 1997.

Eric Petrus
Secretary

RA 36
Research Committee on Color
Measurement

CAD / SPE

The Society of Plastic Engineers had their 1997 Annual Meeting in Toronto April 28, 1997 - May 2, 1997. The Color and Appearance Sessions were on Tuesday, April 29, 1997. The following papers were presented:

Blues "Blues", and Other "Blues" Coloring Plastics Joseph M. Cameron - GE Plastics

The Effects of Injection Molding Parameters on Color and Gloss Eric Dawkins, Kris Horton, Paul Engelmann, Michael Monfore - Western Michigan University

Lasermarkable Engineering Resins Bruce M. Mulholland - Hoechst Technical Polymers

The Effect of Pigments on the Crystallization and Properties of Polypropylene S. Kenig, A. Silberman, I. Dolgopolsky - Israel Plastics and Rubber Center

Pigmentation Evaluation of Talc in Polypropylene Joseph Spano, William Steen - Luzenac America Inc.

(Continued→)

How to Talk with Your Customers about Color Robert S. Trinklein - RTP Company

Gloss as Quality Control Tool for Fiber Membrane Production G. M. Wu - Chang Gung College of Medicine and Technology

Visual Color Matching and the Importance of Controlling External Variables John Tasca - Techni-Cal Services, Inc.

Introduction to Color Theory Bruce M. Mulholland - Hoechst Technical Polymers

Panel Discussion "Intro to Color Theory"

"Review of Colorant Type" Joseph M. Cameron - GE Plastics

"Measurement of Color/Appearance" B. Teunis - X-Rite Corporation

"Troubleshooting Color Problems" S. Err - Chroma Corporation

"Legal Implications" W. Martin - Rainbow Quest

Also, at the ANTEC the Color and Appearance Division won the PRIDE Award given to the divisions that are the most active in the organization. John Copp was given the Honored Service Award of SPE for his long service and contributions to the organizations.

At the end of ANTEC the new officers were named for 1997 - 1998: Gary Beebe- Chairman; Terry Golding- Chairman Elect; Aram Terzian- Treasurer; Austin Reid- Secretary; TPC Chairman- Bruce Mulholland; TPC Secretary- Johnny Suthers; and George Rangos is Past Chairman.

There will be an election in May for new Board Members, Technical Program Members and a Councilor to SPE.

The next event for CAD is the 1997 RETEC. This will be held September 15-17, 1997 at the Marriott in Baltimore's Inner Harbor in conjunction with the ISCC Annual Meeting. (Please see write up in newsletter.)

Gary E. Beebe
May 23, 1997

OPTICAL SOCIETY OF AMERICA (OSA) ANNUAL MEETING AND CALL FOR PAPERS

The 1997 OSA Annual Meeting: Focus on the Life Sciences will be held in Long Beach, CA, Oct. 12-17, 1997. It is sponsored by the OSA, in cooperation with the American Academy of Optometry and the Laser Institute of America. The meeting will be held in the Long Beach Convention Center, which is within walking distance of the Hyatt Regency Long Beach, Sheraton Long Beach, and Courtyard by Marriott.

While all seven divisions of the OSA will contribute to the extensive program of symposia, tutorials, invited and contributed papers, the division that probably interests the ISCC members most is the Vision and Color Division. This division will include the technical groups of color, applications of Visual Science, and Vision.

The Vision and Color Division provides a forum for discussion of all aspects in basic and applied vision research. Topics of interest include the topics of the eye, their impact on vision, their interaction with optical systems, basic mechanisms of transduction, transmission, coding, detection, and analysis of information; color measurement, mechanisms of color vision, and applications of color science, assessment and analysis and

correction of visual dysfunction. Larry Thibos, Indiana University is Division Chair, William Swanson, Retina Foundation of Southwest is Color Chair, Vasudevan Lakshminarayanan, University of Missouri in St. Louis is Applications of Visual Science Chair, and Lynn Olzak, UCLA, is Vision Chair.

The sessions within this division include Models of Retinal Cell Mosaics organized by Qasim Zaidi, Cortical Processing of Color and Luminance organized by William H. Swanson, Rods and Color organized by Joel Pokorny, and Beyond Linear Filters: Nonlinear Modeling of Visual Processes organized by Norma Graham. Also there will be Workshop on Computational Environments for Vision Modeling organized by Stanley Klein, New Advances in Interpreting the ERG organized by Andrew Stockman, Tutorial on Studying Human Retinal Physiology: New Electoretinographic Techniques organized by Andrew Stockman, and Far-Flung Interactions: Long-range Facilitation and Inhibition organized by Lunn A. Olzak. Other sections include Saturation Distortion in Early Vision: Phenomenology, Candidate Mechanisms and Loci organized by Russell D. Hamer, Noise vs. Pattern Masking organized by Miguel P. Eckstein, Aberrations of the Eye and Their Correction organized by Raymond Applegate and Pablo Artal, Perceptual Consideration in Virtual Reality organized by Vasudevan Lakshminarayan, Data Visualization and Perceptual Organization organized by Bernice E. Rogawitz, and Clinical Applications of Laser Coherence Tomography organized by Jay Wei.

The OSA Plenary Talks will be given by Robert Curl, Rice University, 1996 Nobel Prizewinner, and Richard Zare, Stanford University. Curl will discuss: "The Fullerenes," and Zare will give a presentation entitled "Advances in Laser-based Techniques for Chemical Analysis: From Martian Meteorites to Single Molecules."

The OSA Vision and Color Division will give an award to the Best Presentation by a Young Investigator. Students at the undergraduate, graduate

and postdoctoral level who are submitting an abstract to the Vision & Color Technical Division are eligible. A note requesting consideration for the competition must be included with the abstract submission.

Authors are invited to submit their papers to the 1997 OSA Annual Meeting. A 50-word abstract of the presentation and completed copyright/abstract form must be submitted by May 1, 1997. They may be submitted through OpticsNet by completing the form found on our web site: <http://www.osa.org> click on Conferences, then Annual Meeting. Or Mail or FAX one copy of the submission along with the completed copyright/sponsorship form to: OSA Annual Meeting/ILS-XIII, 2010 Massachusetts Avenue, NW, Washington, DC 20036-1023; Fax: 202-416-6100.

All questions or requests for additional information should be addressed to the OSA Conference Services Dept., at 202-223-0902; Fax: 202-416-6100; email: <confserv@osa.org>.

COLOR MARKETING GROUP'S 1999 CONTRACT PALETTE A REFLECTION OF OPTIMISTIC TIMES TO COME

For commercial colors, the journey towards the next century continues to be viewed in a positive light, with some exciting twists along the way. Such is the consensus from Color Marketing Group (CMG) in its newly released 1999 Contract Color Directions® palette. CMG is a not-for-profit,

international association of color design professionals, whose members develop palettes that reflect the group's short-range and long-range color forecasts for manufactured products in all industries.

The 1999 palette is warm, calming and comfortable, with cleaner, yet more complex colors, according to Contract Color Directions co-chairs Kaye Gosline, CMG*, Monsanto Co., Atlanta, GA, and Ann E. Hurley, CMG*, A. Hurley Designs, Chattanooga, TN. Some major influences on the palette include:

- Constructed colors and finishes developed through layering, textures, washes and patinas
- Ethnic interests, particularly Asian and Latin
- Water's impact on the palette, as seen through the aquatic colors
- "Back to the future" - impact of retro style from the '30s, '40s and '50s
- The need for colors to have versatility and longevity in the marketplace
- Chameleon colors that change
- Melding of the Consumer and Contract palettes as the office and home become one
- Impact of technology on colors themselves and by shortening the development cycle

Directionally, Gosline and Hurley say neutrals remain strong and tend to be darker, cleaner and complex, but not gray. Red's influence is dominant, while yellow's influence has diminished slightly. Fashion-influenced brown, at the high end, should ideally be interpreted as wood or real leather. It can also be a great substitute for black or even used in combination. The environment continues to be an influence, but greens are reminiscent of field greens, strong but harsh. Blue's direction - much discussed - is mid-range and red-influenced, while purple is redder, but not much discussed.

The 1999 Contract Color Directions Forecast colors:

Rose Tattoo: The new coral, a shifting of red off-center - too important to ignore!

Orange A-Peel: A citrus trend, clean and useable as an accent or attention-getter. A subdued orange - earth inspired but techno-connected.

Golden Koi: A bridge between orange and gold; a techno-bright, Latin influenced.

Winter Wheat: Green's influence on gold; a good neutral with wood, it is upscale, gilded, artesian-influenced.

Back to the Fuschia: Rich, regal. Opulent blued-red that complements neutrals, blues and greens.

Vistage Plum: A complex color - a melding of brown and purple into a mid-tone with chameleon properties.

Volcanic Ash: A sophisticated, rich gray-brown - a great alternative to black.

Easily Sueded: A soft-colored neutral, an earth-inspired transition brown - smooth like coffee with cream.

Blue Moon: A watercolor blue, tranquil and softened, but not too sweet. A twinkle of lavender in a pool of pale blue.

Tree Top: An optimistic green; reminiscent of new growth, as green takes a turn toward yellow.

Color Marketing Group, founded in 1962 is an international non-profit association of 1,500 Color Designers. CMG members forecast Color Directions® one to three years or more in advance for all industries, manufactured products and services. The Consumer and Contract/Commercial Products include: Residential, Transportation, Architectural/Building, Communications/Graphics, Fashion, Recreational, and environmentals for Retail, Hospitality, Office and Health Care.

(Continued→)

Colors listed above are for Contract/Commercial Products only. Over 650 Color Designers from around the world have met in Tarpon Springs, FL from April 27-29, as CMG members collectively forecast the product colors consumers will want to buy in 1999. In Tarpon Springs, members will develop short and long-range color forecasts for a vast array of consumer products - for everything from cars to carpets to clothing, from housewares to product packaging. Members also participate in Workshops emphasizing the importance of design in both consumer and commercial products, and in sessions dedicated to developing marketing strategies and nurturing creativity. Maximizing today's technology to enhance the exchange of color and design information is also addressed.

The Conference is held April 27-29, 1997 at the Innisbrook Hilton Resort in Tarpon Springs, FL and is open to members only. For future Conference or CMG membership information, please contact CMG at 703-329-8500.

Color Marketing Group, founded in 1962 and based in Alexandria, VA, is an international non-profit association of 1,500 Color Designers. CMG members forecast Color Directions® one to three years or more in advance for all industries, manufactured products and Services. These Consumer and Contract/Commercial Products include: Residential, Transportation, Architectural/Building, Communications/Graphics, Fashion, Recreational, and Environments for Retail, Hospitality, Office and Health Care.

Jennifer Freedman, 703-329-8500

1997 IRGCVD SYMPOSIUM IN GHENT, BELGIUM

Twenty-five years ago the International Research Group for Colour Vision Deficiencies (IRGCVD) was founded in Ghent by the late Dr. Guy Verriest. To commemorate the anniversary, it was decided to hold the 1997 IRGCVD meeting in Ghent from 5th to the 9th of July, 1997. The meeting will take place at the Provincial Administrative Centre "Het Zuid" in Ghent, situated within walking distance of the major hotels. Ghent is one of the most flamboyant historic cities of the Low Countries. Situated in the heart of Europe it is easily accessible by car or train. The journey time from Brussels airport is about one hour by train. As is usual for IRGCVD meetings, the registration fee (16,000 Belgian francs before June 2 and 19,500 Belgian francs thereafter; 8,000 Belgian francs for students/applicant with certified limited resources) will cover all charges to participants, the scientific programme, the working lunches on Sunday and Tuesday, the coffee and tea breaks and the social programme.

The social programme includes: a welcome reception on Saturday night; a concert in a place of historical interest on Sunday night; a boat trip, with lunch on board, which will finish with a dinner in a restaurant along the romantic river Leie on Monday; and a banquet in the impressive Pand, an ancient Dominican abbey and nowadays Faculty Club of the University of Ghent on Tuesday night.

The additional programme for accompanying persons includes a day visit to Bruges on Sunday and a guided tour on Ghent's historic centre.

The official language of the meeting will be English.

The special topics of the symposium are:

Development of Colour Vision (including infant/child vision) (invited speaker: D. Teller)

Functional MRI
Pigments and Photopigments
(invited speaker: A. Stockman)
Traffic Regulation Standards

A workshop is being organised by B. Lee and J. D. Mollon on Color Vision in New World Primates, with invited speakers: D. Hunt, G. H. Jacobs and L. Silveira

Meeting registration, abstract submission and hotel registration forms can also be obtained from:

Prof. J. J. DE LAEY
International Research Group on
Colour Vision Deficiencies
Department of Ophthalmology
University Hospital
De Pintelaan 185
B9000 Ghent, Belgium
Tel: +32-9-24-0-23-19
Fax: +32-9-24-0-49-63

For membership information, please e-mail Lindsay T. Sharpe at: ted.sharpe@uni.tuebingen.de

fax: +49-7071-295777 (Germany).

Please take the following dates into account:

June 2, 1997 : deadline for early registration

July 5-9, 1997 : IRGCVD meeting in Ghent.

Finally, we would like to remind members of the IRGCVD that at the General Meeting, during the Symposium, nominations for President and General Secretary will be needed. Andre Roth has agreed to stand again for President (for a 2 year period, until his retirement) Jack Moreland, however, will step down. Please send nominations for President and General Secretary and accompanying CVs to Jack Moreland (coa09@keele.ac.uk) in time for them to be presented to the membership at the Ghent meeting.

Visit our website at: <http://orlab.optom.unsw.edu.au/IRGCVD>

DETROIT COLOUR COUNCIL MARCH MEETING

Detroit Colour Council held their Spring meeting on March 18, at the Troy, MI Marriott. The presentation, "Transportation Design at CCS," was given by Mr. Carl Olsen, Chairperson, Transportation Design at the Center for Creative Studies. Carl gave a very informative slide show that illustrated how students coordinated automotive interiors and exteriors. Through the use of slides he made the point that automotive interiors need to be more dramatic. Working jointly with some automotive suppliers, he developed a unique Pontiac for the 1997 Detroit Auto Show. The creative work done at CCS today, will take shape in tomorrow's vehicles.

J. R. Keiser.

GRAND OPENING GIA NEW WORLD HEADQUARTERS

5345 Armada Drive, Carlsbad, CA 92008

In response to the growing number of challengers facing the gem and jewelry industry, the Gemological Institute of America has constructed a new, expanded world headquarters in Carlsbad, Southern California. Nestled on a hill overlooking the city's famous flower fields and the Pacific Ocean, this beautiful, state-of-the-art campus will offer new opportunities for both GIA and the industry it serves. By utilizing the latest technologies in its educational curriculum, research operations, and laboratory services, this enhanced facility will allow GIA to quickly identify and address the ever-shifting demands facing the industry. As an international center for the gem and jewelry community, the new world headquarters will embody GIA's ongoing commitment to excellence and integrity well into the next century. The campus also offers individual and corporate supporters the unique benefit of establishing an enduring affiliation with the Institute through a variety of permanent naming opportunities.

Harry K. Hammond III

PLEASE NOTE THIS CHANGE OF ADDRESS

Dr. JOANN TAYLOR
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2894 NW 127th Avenue
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tel: 503-645-5129 (office)
fax: 503-617-1610 (office)

GENTLE REMINDER!

All appropriate information submitted to this *NEWS* publication is the full and complete responsibility of the sender.

This publication and the ISCC assumes no responsibility for information changes and inaccuracies.

Thanks,
The Editor

C A L E N D A R

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

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

tel: 703-318-0263
fax: 703-318-0514
email: iscc@compuserve.com

1997

DETROIT COLOUR COUNCIL ANNUAL SYMPOSIUM
June 10, 1997, Title: "Color Control and Instrumentation", Dearborn Inn, Dearborn, MI, Information: Jim Keiser, tel: 810-583-8345

ASTM COMMITTEE E-12 ON APPEARANCE June 18-20, Adams Mark Hotel, St. Louis, MO, Inf: Bode Bradley tel: 610-832-9740 fax: 610-832-1547

ASTM COMMITTEE D-1, June 22-25, Totonto, Ontario, Canada, Inf: Bode Bradley tel: 610-832-9740 fax: 610-832-1547

SANCI-CIE International Conference on Lighting in Developing Countries Sept. 1-3, International Conference Centre, Durban, South Africa, Inf: CIE Central Bureau: email: ciec@ping.at, or mail Kegelgasse 27, A-1030 Vienna Austria.

(Continued→)

ISCC & SPE ANNUAL MEETING, Sept. 14-17, *Inter-Society Color Council and Appearance Division of Society of Plastics Engineers*, Marriot Inner Harbor Hotel, Baltimore MD, Info: Gary Beebe, tel: 215-785-8497

HFES 41st ANNUAL MEETING, Sept: 22-26, *Human Factors and Ergonomic Society*, Albuquerque, NM, Info: HFES, PO Box 1369, Santa Monica CA 90406-1369, tel: 310-394-1811, fax: 310-394-2410, email: 72133.147@compuserve.com internet: <http://hfes.org>

AATCC INTERNATIONAL CONFERENCE AND EXHIBITION Sept. 28-Oct 1, *American Association of Textile Chemists and Colorists*, Marriot Marquis, Atlanta, GA, info: AATCC, tel: 919-549-8141

OSA ANNUAL MEETING, Oct. 11- 19, *Optical Society of America*, Long Beach Convention Center, Long Beach, CA Info: OSA, tel: 202-223-0920; fax: 202-416-6100

CIE LED WORKSHOP AND SYMPOSIUM, Oct. 22-25, 1997 Standard Methods for specifying and Measuring LED Characteristics, CIE Central Bureau, Vienna Austria, Inf: email: ciecb@ping.at or mail Kegelgasse 27, A-1030 Vienna, Austria

IS&T 13TH INTERNATIONAL CONGRESS, Nov. 2-7 *Society for Imaging Science and Technology*, Advances in Non-Impact Printing Technologies, Sheraton Seattle Hotel, Seattle, WA. Info: IS&T Conference Manager, 7003 Kilworth Lane, Springfield, VA 22151, tel: 703-642-9090; fax: 703-642-9094; email: info@imaging.org

FSCT INTERNATIONAL COATINGS EXPO (ICE), *Federation of Societies for Coatings Technology*, Nov. 3 - 5, Georgia World Convention Center, Atlanta, GA Info: FSCT tel: 610-940-6777; fax: 610-940-0292

CMG FALL INTERNATIONAL CONFERENCE *Color Marketing Group*, Nov. 9 - 11, St. Francis Westin Hotel, San Francisco, CA, info: CMG, 5904 Richmond Highway, Suite 408, Alexandria, VA 22303, tel: 703-329-8500 email: colorcmg@erols.com

IS&T/SID FIFTH COLOR IMAGING CONFERENCE *Society for Imaging Science and Technology / Society for Information Display*, Nov. 16 - 19, Transforms and Transportability of Color, Radisson Resort, Scottsdale, AZ, info: IS&T Conference Manager, 7003 Kilworth Lane, Springfield, VA 22151, tel: 703-642-9090, fax: 703-642-9094, email: info@imaging.org internet: <http://www.imaging.org>

2ND CIE EXPERT SYMPOSIUM ON COLOUR STANDARDS FOR IMAGING TECHNOLOGY, Nov. 20-21, Scottsdale, AZ, USA, CIE Central Bureau, Inf: email: ciecb@ping.at or mail Kegelgasse 27, A-1030 Vienna, Austria

1998

ISCC WILLIAMSBURG CONFERENCE (Feb. 22-24), Color and Design: 21st Century Technology and Creativity, Inter-Society Color Council, info: Wade Thompson tel: 417-882-2553

CMG SPRING INTERNATIONAL CONFERENCE April 19-21, *Color Marketing Group*, The Broadmoor, Colorado Springs, CO info: CMG, 5904 Rischmond Hwy Suite 408, Alexandria, VA tel: 703-329-8500; fax: 703-329-0155, email: colorcmg@erols.com

TAGA 98 - 50TH ANNIVERSARY CELEBRATION, Apr. 26 - 29, 1998, *Technical Association of the Graphic Arts*, Marriot Lincolnshire Resort, Chicago IL info: Karen Lawrence, tel: 716-475-7470

SID 98, Society for Information Display, May 17 - 22, Anaheim, CA, info: Lauren Kinsey, SID, 1526 Brookhollow Drive, Suite 82, Santa Ana, CA 92705 tel: 714-545-1526; fax: 714-545-1547 email: socforinfodisplay@mcimail.com

ASTM COMMITTEE D-1, Paint, and Related Coatings, Materials and Applications, Omni Inner Harbor, Baltimore MD, inf: Bode Bradley, tel: 610-832-9740 fax: 610-832-1547

ASTM COMMITTEE E-12 ON APPEARANCE, June 16-18 St. Louis, MO, inf: Bode Bradley, tel: 610-832-9740 fax: 610-832-1547

AATCC INTERNATIONAL CONFERENCE AND EXHIBITION Sept. 22-25, *American Association of Textile Chemists and Colorists*, Marriott, Philadelphia, PA Info: AATCC tel: 919-549-8141

ISCC ANNUAL MEETING & OSA (Oct. 2-4) *Inter-Society Color Council* (Oct. 3 - 8), *Optical Society of America* Baltimore Convention Center, Baltimore, MD Info: OSA, tel: 202-223-0920, fax: 202-416-6100

CMG FALL INTERNATIONAL CONFERENCE, *Color Marketing Group*, Oct. 4 -6, Le Centre Sheraton Hotel Montreal, Montreal, Quebec, Canada, Info. CMG 5904 Richmond Hwy., Suite 408, Alexandria, VA 22303 tel: 703-329-8500, fax: 703-329-0155 email: colorcmg@erols.com

1999

ISCC ANNUAL MEETING (MAY 5-7) Inter-Society Color Council and TAGA ANNUAL CONFERENCE, May 2 -5, *Technical Association of the Graphic Arts*, Technical conference, Philadelphia, Pa. Info: Karen Lawrence, tel: 716-475- 7470

ISCC WILLIAMSBURG CONFERENCE (FEB.21-23), 2nd Panchromatic Conference-Color in its surround, info: Dr.Cynthia Brewer; tel: 814-865-5072

ASTM COMMITTEE D-1, Paint, and Related Coatings, Materials and Applications, June 13-16 Omni Rosen Hotel, Orlando FL, inf: Bode Bradley, tel: 610-832-9740 fax: 610-832-1547

SID '99 (May) California
Information: Lauren Kinsey SID, 1526 Brookhollow Drive, Suite 82, Santa Ana, CA 92705
Tel: 714-545-1526, Fax: 714-545-1547
email: socforinfodisplay@mcimail.com

OSA ANNUAL MEETING, *Optical Society of America*, Santa Clara, CA Inf: OSA, tel: 202-223-0920, fax: 202-416-6100.

AATCC, INTERNATIONAL CONFERENCE AND EXHIBITION, October 12-15, *American Association of Textile Chemists and Colorists*, Convention Center, Charlotte, NC, info: AATCC, tel: 919-549-8141

2000

ASTM COMMITTEE D-1, Paint, and Related Coatings, Materials and Applications, Jan. 23-26, Hyatt Regency Hotel, New Orleans, LA, inf: Bode Bradley, tel: 610-832-9740 fax: 610-832-1547

SID 2000 (May) Toronto, Ontario Canada, Information: Lauren Kinsey SID , 1526 Brookhollow Drive, Suite 82 Santa Ana, CA 92705, Tel: 714-545-1526, Fax: 714-545-1547
email: socforinfodisplay@mcimail.com

OSA 2000, *Optical Society of America*, annual meeting, Oct. 1-6, Hyatt Regency, Chicago, IL inf: OSA, tel: 202-223-0920, fax: 202-416-6100.

AATCC INTERNATIONAL CONFERENCE AND EXHIBITION (Oct. 1-4) American Association of Textile Chemists and Colorists
Marriott World Center, Orlando, FL, Information: AATCC
Tel: 919-549-8141

2001

AATCC INTERNATIONAL CONFERENCE AND EXHIBITION (Oct. 7-10)
American Association of Textile Chemists and Colorists
Sheraton Hotel, Boston, MA, Information: AATCC
Tel: 919-549-8141

SPECIAL SALE!!!

**Reprints of “Color and Light” by Fred W. Billmeyer Jr., and Harry K. Hammond, III, Chapter 40 of ASTM Paint Manual, 23 pages
\$5 each or 20 copies \$50 ...available only while current supply lasts.**

This is an authorized reprint from ASTM Manual 17, Copyright 1996. American Society for Testing and Materials, 100 Bar Harbor Drive, West Conshahocken, PA 19428-2959

Demystifying Color

Special Price - \$5 each or 20 copies for \$50. 11 pages color (will cost \$15 each when current supply runs out)

This technical report, produced by Bob Chung of Rochester Institute of Technology when he was ISCC Education Committee Chair, discusses and explains ten myths about color.

Either of these publications can be obtained by contacting Cynthia Sturke at the ISCC Office, 11491 Sunset Hills Rd, Reston, VA 20190 tel: 703-318-0263, fax:703-318-0514, email: iscc@compuserve.com

J O B S W A N T E D !



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 editors 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!

SEEKING EMPLOYMENT IN R&D POSITION IN COLOR

PhD (expected, 1997) Color Vision, MS Biophysics, BS Biomedical Engineering. Highly motivated, adaptable and dependable individual seeking R&D position. Interdisciplinary background and research experience in color vision, biomedical instrumentation, colorimetry, photometry and reflectometry. Working knowledge of computer graphics, image analysis/processing, mathematical modelling. Computer and statistics skills include Pascal, C++, Matlab, Assembly, S, SAS, Steplt.

Jun Xu

The University of Chicago, Visual Science Center
939 E. 57th Street, Chicago IL 60637
Tel: 773-702-1987, Fax: 773-702-4442
email: junxu@midway.uchicago.edu

SEEKING EMPLOYMENT IN COLOR REPRODUCTION INDUSTRY OR HUMAN FACTORS.

PhD in visual psychophysics. Detailed knowledge of color vision, colorimetry, human psychophysics, color testing and calibration procedures, and statistics. Broad knowledge of pattern recognition and image processing. Familiarity with signal processing and systems analysis. Knowledge of optics, electronics, and mathematical modeling.

SHUANG WU

Schepens Eye Research Institute
20 Staniford Street
Boston, MA 02114
TEL: 617/723-6078 Ext.590
FAX: 617/523-3463
e-mail: shuangwu@vision.eri.harvard.edu

SEEKING EMPLOYMENT RELATED TO COLORATION

Noted Bulgarian color and light expert, returning from visiting scholarship in Japan, seeks short or long term employment in the West. Thirty years' extensive and varied experience in visual and instrumental color measurement in many systems. Capable in research, teaching, program development, quality control. Multilingual.

Assoc. Prof. Dr. Todor Kehlbarov
BG-1000 Sofia, P.O. Box 1089
Bulgaria
Phone/Fax 011 359 2 88 05 97
US Contact: Dr. F. W. Billmeyer, Jr.
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Please note: the 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.

OFFICERS 1996-1998

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President	Dr. Ellen C. Carter	2509 N. Utah Street, Arlington, VA 22207	ecarter@capaccess.org	703-527-6003	
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Treasurer	Mr. Hugh S. Fairman	334 Springbrook Trail, Sparta, NJ 07871		201-729-7278	201-729-7278
Past-Pres.	Mr. Roland L. Connelly	ShelLyn, Inc., 1108 Greccade Street, Greensboro, NC 27408	roland@shelLyn.com	910-274-1963	910-274-1971

LIST OF DIRECTORS**1994-1997**

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Mr. Richard W. Riffel	Hunter Assoc. Lab. 11491 Sunset Hills Rd, Reston, VA 20190	rriffel@hunterlab.com	703-471-6870	703-471-4237
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1995-1998

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Prof. Wade Thompson	1910 East Cardinal St., Springfield, MO 65804	wst255f@nic.smsu.edu	417-882-2553	417-883-5830

1996-1999

Dr. Helen H. Epps	University of Georgia, 300 Dawson Hall, Athens GA 30602	hepps@hestia.fes.uga.edu	706-542-4913	706-542-4862
Mr. James R. Keiser	DuPont Automotive Products, Detroit Colour Council 945 Stephenson Hwy, Troy MI 48007-2802	keiserjr@sptv4.dnet.dupont.com	810-583-8345	810-583-8316
Mr. Jack Ladson	17329 Mc Duff Ave., Olney MD 20832	jaladson@bell.atlantic.net	301-774-7464	301-774-5260

ISCC OFFICE

Web Site-<http://www.iscc.org>

Cynthia Sturke	11491 Sunset Hills Rd. Reston, VA 20190	iscc@compuserve.com	703-318-0263	703-318-0514
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ISCC MEMBER-BODIES

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

SUSTAINING MEMBERS

Labsphere

Hunter Associates Laboratory, Inc.

BYK-Gardner