

Inter-Society Color Council *News*

Number 357 September/October 1995

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PRESIDENT'S COLUMN

RC

It certainly has been a sad summer for the ISCC. We lost one of our young and energetic board members in Ron Oldchurch as he passed away this summer. We will all miss him. There is an obituary elsewhere in this newsletter.

The color community also lost a good friend in Joseph Cohen recently. His obituary will appear in the next issue.

On the bright side, Ms. Jay Powell is now on board and operating the office for the ISCC. She is currently putting together the next issue of the ISCC Membership Directory. We are very glad to have her on board. She will be expanding her duties to assist in the areas of information dissemination and administrative activities. These will include areas to assist the Secretary, the Treasurer and the Membership Secretary as well as the President. Jay is currently working from her home but will be moving to the ISCC office in the near future. To reach her temporarily you can call the office (703-318-0263) and leave a message and she will pick it up and return your call. I wish to thank HunterLab Incorporated for providing the office space for the ISCC and for providing us with personnel type help in obtaining Ms. Powell's services. Thanks go to DataColor International for supplying the office with the computer system.

I also must thank SheLyn Inc. for supplying the time and travel for Ann Laidlaw and me to help set up the office. Dr. Ellen Carter has been the one who has done much of the office setup and the direct contact for the board of directors to the office. My thanks go to her also.

We have received many good comments about the Annual Meeting held in April in Greensboro. I wish to thank Ms. Ann Laidlaw for putting together an outstanding program. As general chairperson, she had to pull together the many varied aspects of the meeting. Many of the comments centered about the good mix of quality presentations that offered nearly everyone attending a stimulating session to attend. The Interest groups all had good sessions that drew good

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attendance. My thanks to the Interest group chairpersons for their work. Also, Mr. Romesh Kumar, as always, did a great job with the arrangements.

The ISCC is always looking for new ways to serve the color community. The board is currently looking into a number of channels that we hope will meet these goals. Some of these include the possibility of scholarships and/or research grants and the use of the World Wide Web on the Internet to name just two. I would like to hear from the membership on any ideas that you may have on how the ISCC could be doing a better job. Jim Cave, the new Individual Membership group liaison, is working on this now. You will be hearing from him. I will be keeping you informed more frequently, via the newsletter. We have our next board of directors meeting scheduled for September 30. Hope that you have a great rest of the summer.

Roland Connelly

OBITUARY

RONALD OLDCHURCH
1952 - 1995

The Inter-Society Color Council mourns the loss of one of its new Directors, Ronald Oldchurch, 43, on July 15, 1995. Ron was electrocuted while repairing a power line at his place of work.

Ron had a life-long interest in color, sparked in part by his mother's being an art teacher. However, he was completely self-taught in the field. His B.S. from San Diego State University was in Personnel and Industrial relations, not in a field related to color; his "day job" was as a maintenance worker for the sixth-grade camp at Mount Palomar; in addition he owned and managed real estate in Southern California. Despite these other activities, for the last 14 years Ron avidly pursued a variety of interesting ideas in color. To use his words from a recent bio: "As founder of Symmetry Research, he investigat[ed] the use of mathematical physics metaphors to describe color appearance phenomena. This includes a description of color contrast and induction [...] using the concept of electrostatic fields." He was passionately devoted to these ideas, reading more widely and learning more quickly than anyone else I know in the field. Finally, he was very much in tune with practical applications, conducting experiments on his Macintosh computer, learning about image compression, and trying to help us communicate better through the Worldwide Web. During his five years of ISCC membership, Ron volunteered for many services, including chairing the Poster Paper and Contributed Paper Committees since 1992.

Through his professional activities, Ron had a tremendously positive impact on peoples. I offer here a personal reminiscence, which I believe to be typical of the reactions of others.

Ron and I met in Princeton at the 1992 Inter-Society Color Council meeting, where he introduced me to some of his ideas about color. Very soon we became close personal friends. In the next year or so we corresponded about color theory, and occasionally would meet on the campus of U. C. San Diego to discuss his ideas. I could not help being drawn into his circle of friends, which included artists, philosophers, and noted vision scientists and their graduate students. (Such networks are fragile, and must be protected as endangered species.) Although I had to miss Ron's first ISCC talk in Newport (April 1993), I was fortunate enough to be in San Diego the week before the meeting, and got to hear Ron give a "dry run" at a party to whom he invited a number of his local friends. It was at this party that I began truly to appreciate Ron's gifts: for being able to communicate to artists and scientists alike, for his optimism and enthusiasm, and for his gentle but persistent ambition to become a "Renaissance man." As I found out later, Ron's aspirations in color were a 14-year struggle, but despite the initial hardships of lack of technical training and being ignored, he found the courage to shore up his ideas with diverse learning, and to communicate them with polish and magnetism—without rancor over the past.

Last February, Ron was essential to the success of the Pan-Chromatic Conference in Williamsburg, VA (of which I was one of the chairs). By November of last year, several authors had canceled their talks, so I had already begun looking for a good last-minute contribution. Then Ron appeared at the SID meeting in Scottsdale with a Macintosh computer in his knapsack. Informally he showed a few of us a dazzling demonstration of a little known and unexplained illusion (which has since become known as the "chromatic White's illusion"). When I asked Ron to present his slide show in Williamsburg, he agreed to give me a disk and perhaps even to attend the meeting, but insisted that I, not he, should give the actual presentation. In deference to Ron's modesty, I agreed to these terms, but tried to change his mind about giving the talk himself. I am no stranger to conference presentations, but this one was particularly daunting. We had to bring together from opposite ends of the country a computer and a liquid crystal display (the latter of which had not been

used in years), and to make sure the combination delivered a convincing illusion to a large audience in an unfamiliar environment. Furthermore, the speaker had to operate the graphic software in real time, to exercise continuing vigilance on the optics of the LCD, to discuss the slides in logical progression, to monitor the audience's perception of the illusion, and to explain the apparently unexplainable in the slides. At the last minute Ron offered to present the talk, realizing that it was easier for him to speak than to coach me repeatedly. That was a good decision. Ron gave an excellent presentation, which was remembered as a high point in the conference. Incidentally, Ron also almost single-handedly took on the audio-visual aspects of the conference, and still was able to write an outstanding conference summary for the ISCC Newsletter.

Even now I ask myself how Ron was able to bring himself to do all this, especially since, back in September of last year, the Conference committee rejected his abstract for a (different) technical presentation.

By the April ISCC meeting in Greensboro, Ron had become a member of the Board of Directors of the ISCC. This was certainly a noteworthy achievement, but it was outshone by Ron's further research into the "chromatic White's illusion." Having by this time studied the literature thoroughly, he invited some of us to an unofficial "Midnight Macintosh" session in which we were treated to more variants of the illusion including a counterexample to a published assertion. We all enjoyed the session, complete with debates that lasted until well after midnight. Also, I for one felt a bit younger and more enthusiastic about science after this, Ron's last conference contribution.

After the Greensboro meeting, Ron sent me a new document with some thoughts on diophantine equations and the symmetry of color space. Unlike earlier documents, this one inspired me to explore an unaccustomed mathematical direction. Unfortunately, I did not respond in time to share my ideas with him. After I learned of Ron's passing, I sent a copy of the document to Bill Burling, a friend of ours at MIT (who has written a poem in tribute to Ron). Perhaps together we can develop Ron's ideas toward his goal of letting people understand "how [colors] paint the world in their inner mind" (quote from Bill Burling's poem, "Ron's Offering").

Ron is survived by his mother, Ms. Doris Westerfelt Oldchurch, and by his sister, Ms. Constance Oldchurch Hood, in San Diego, CA. He will be missed by all who knew him, including his friends in the ISCC.

Michael H. Brill

THE FOLLOWING IS A LETTER FROM RON OLDCHURCH'S SISTER TO ISCC PRESIDENT, ROLAND CONNELLY

Dear Mr. Connelly,

Thank you for the letters from you and from Ms. Anne Laidlaw. The friendship and support of my brother's friends in ISCC have meant a lot to the family. Over the next months, we will be making every effort to organize Ron's papers, computer files, and library so that his work may be continued by his colleagues.

In your letter, you asked that we let ISCC know of Ron's involvement in charitable activities. As you may have known, he worked for the San Diego county Schools for nearly 23 years. For the past thirteen years, he has also been dedicated to understanding the nature of color, and this left little time for other outside pursuits. However, my mother and I would like to let you know a little more about how the interests in color evolved, and to invite ISCC to help sponsor a very small charitable project for the Santee School District.

Throughout our childhood, Ron and I were inspired almost daily by our mother who was an art teacher. As her children we had the good fortune to have unlimited access to paints, papers, pastels and other media, to create and modify ideas that mother would then present to her classes. In those days, children learned a discipline based art curriculum that taught color along with line and form. In California, the visual arts were cut from the curriculum several years ago. When our mother retired, she decided to volunteer her time for two days a week to teach visual arts in Santee, an low-income rural area outside of San Diego. The schools in Santee do not provide art supplies so lessons have been limited to drawing and recycled art.

Mother and I would like to apply the contributions in Ron's memory to build a "colorbox". These portable units will contain classroom sets (30) of paints, pastels, pencils, watercolor and mixed media that can be used by children over the next few years. Access to supplies will then make it possible for mother to provide sequential lessons in the development and use of

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color. I am excited to think that her students may enjoy some of the privileges that Ron and I did. We have already spoken with educators in Santee, and the district will make official acknowledgment of any charitable gifts in Ron's name.

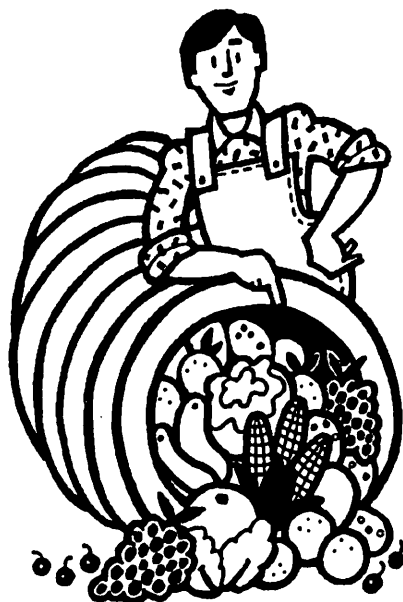
I am not sure if this type of project is compatible with your mission, but it is very consistent with my brother's interests. He loved children and would be pleased to have a role in teaching young people about colors. I would be glad to speak with you on my brother's behalf and can be reached at my home phone (213)226-0470 until August 18th. We will return to Los Angeles August 28th. Our mother can be reached at her home (619)292-0455 on the same dates, or correspondence can be sent to her address.

Doris Oldchurch
10715 Esmeraldas
San Diego, CA 92124

Once again, please let your ISCC Colleagues know of our gratitude for the cards, letters and wishes of these past difficult weeks.

Sincerely,

Constance Oldchurch Hood



JOINT ISCC/AATCC SYMPOSIUM TEXTILES AND COLOR

The following four sessions of talks took place at the 1995 ISCC Annual Meeting during the joint ISCC/AATCC symposium on Textiles and Color:

Session I: How We See Color. Moderator: Dr. Roy Berns

- In Textiles, Color IS Quality, and the Eyes Have It!, LOUIS A. GRAHAM, Lou Graham & Associates.
- Perceived Grey-Levels in Complex Configurations, QASIM ZAIDI, JEREMY S. DE BONET, BRANKA SPEHAR, The Lighthouse Research Institute.

Session II: How We Describe Color. Moderator: Dr. Roy Berns

- Color Names for CIELAB Color Space, FREDERICK T. SIMON, FTS, Inc.
- A Study of the Color Memory of Dyers, MARTIN BIDE, KENNETH LANGLEY, AND EHTESHAM KHOYRATTY, University of Rhode Island
- Memory for Color: What Do We Recall?, STEVEN K. SHEVELL, University of Chicago

Session III: How We Match Color. Moderator: Mr. Roland Connelly

- Direct Dyeing: Repeatability and Match Prediction, CHRISTINA MILLER AND J. RICHARD ASPLAND, Clemson University
- Recipe Formulation for Textile Dyeing and Print - How to Succeed in Industry, LUIZ CLAUDIO RAMALHO DE ALMEIDA, KELSON DOS SANTOS ARAUJO, ROBERT HIRSCHLER, SENAI/CETIQT

Session IV: Color, Design, and Textiles. Moderator: Mr. Roland Connelly

- Applications of Colorimetric Vision Systems in the Textile Industry, CHRISTOPHER D. BUNTING, Hunter Lab
- Successes and Challenges of Fabricless Product Development, MICHAEL P. KEATING, Cone Mills

Abstracts of this joint ISCC/AATCC Symposium held after the 1995 ISCC Annual Meeting are available.

If you are interested, please send \$5 for postage with your name and address to:

Ann Laidlaw
c/o SheLyn, Inc..
1108 Grecade Street
Greensboro, NC 27408

Sward Paint Testing Manual" is listed by this title in the December 1983 schedule of meetings of the Paint Committee. The name of Henry A. Gardner, Sr., has been perpetuated for all time by his son, Henry A. Gardner, Jr., who, in 1977 established the Gardner Award in ASTM. That award is made not more than once each year to an individual member of the Paint Committee who has been responsible for managing a unit in that Committee so that it's productivity is high. Henry Gardner, Sr., was a prolific writer. Meritorious authorship might well have been the basis for the Gardner Award had it not been for the fact that the ASTM Paint Committee in 1969 established a n Award for Meritorious Authorship in memory of Dr. William T. Pearce who chaired the Paint committee for more than 20 years.

ASTM sold 7500 copies of the 13th Edition of the Paint Testing manual published in 1972. Who will pick up the ball and run with it to produce the 14th Edition? An energetic Editor is desirable. Yet Gib Sward finished the previous edition when he was 80 years old! The ASTM Paint Committee is looking to Dr. John C. Weaver, retired director of Research for the Sherwin-Williams Company and now professor of Polymer Chemistry at Case Western Reserve University, Cleveland, Ohio. The writing of any book is a huge undertaking. Editing one at first seems like it should be easier, but in fact it may be more difficult. If you have the knowledge to write chapters of a book yourself it is often easier to do so than to try to find someone else and then coax, cajole, or threaten the individual until he accomplished the task!

Harry K. Hammond III

CAUS NEWS



Here are a couple of great ones! (Ed.)

Color Coding Trash on Millennium Block

"Because so much trash appears on West 68th Street from so many different sources, an effort is being made to color code the bags in containers. Currently, look for daytime black for residential regular garbage or blue for recyclables. Evening Black is Sony, clear is Coconuts. Yet to be coded are Gap, Reebok, and Health Club."

The West 68th Street Block Association, Spring 1995

Diesel Trucks Now Custom-Colored

"The days of the plain gray truck are long gone. Buyers of medium and heavy-duty trucks and tractors are demanding unique bright colors for truck cab extensions. Freightliner Corp. is meeting this demand by using automated fluid dispensing and mixing systems to provide custom paint jobs

for each of the 50,000 trucks it makes per year. "Freightliner uses Imron 5000 single-stage high-solids polyurethane from duPont. The accutiner dispenses and mixes the required resins and color components in quantities so small that Freightliner can get as little as one quart. Over 30 tints are used to create any of 8000 duPont color formulas."

*Industrial Paint and Powder 4/95
Extracted from the CAUS August News*

COLOR MARKETING GROUP ELECTS NEW BOARD MEMBERS

CMG The Color Marketing Group has elected to its Board of Directors five new members:

Enid Allen, CMG Macbeth Division/Munsell Color, Bel Air, MD

Anna Mack, CMG Mack / Cooley Marketing, Inc., Portland, OR

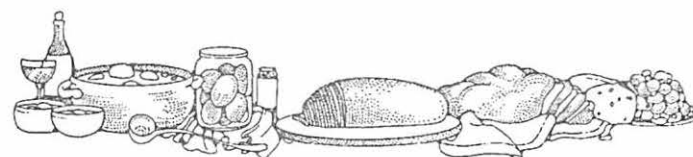
Linda Miller, CMG L.C.M. Style, Inc., Montreal, Quebec, Canada

Barry Ridge, CMG Barry Ridge Graphic Design, Westlake Village, CA

Larry Wegner, CMG Cooper Lighting, Elk Grove Village, IL

All of the above members have earned the "CMG" appellation indicating "Chairholder" status. This status is given recognition of their achievement and leadership in the profession of Color Design.

The Color Marketing Group is a 33-year-old international not-for-profit association of 1,500 Color Designers. These Color Designers forecast Color Directions one to three years in advance for all industries, manufactured products and services including: Residential, Transportation, Architectural / Building, Communications / Graphics, Fashion, Recreational, and environments for Retail, Hospitality, Office, and Health Care.



POSTER SESSION AGAIN SLATED FOR 1995 ANNUAL MEETING AND PAINT INDUSTRIES' SHOW IN ST. LOUIS

FSCT The 1995 FSCT Annual Meeting and Paint Industries' Show will again feature a Poster Session as part of its Technical Programming. This announcement was made by 1995 Annual Meeting Program Committee Chair Louis Holzknicht of Devco Coatings Co. In Louisville, KY. This year's session will be held on Tuesday, October 10, 1995 in a specially designated area of the Cervantes Convention Center. The theme of the 1995 event is "Creativity + Adaptability = Gateway to Success."

The Poster Session is designated to provide a forum for individuals who are actively involved in coatings research. It allows each participant to display posters of the work and make brief presentations on the project. The session provides a non-commercial arena for new ideas, new techniques, preliminary results, and/or work that is significant but not ready for full publication.

Posters will be displayed on Tuesday, October 10, 1995 from 9:00AM to 5:00PM and judging will take place beginning at 11:00 AM. Each participant will be provided with a display board for the session.

This space has been
intentionally left
empty.(Ed.)

GATF AND NAPL NAME SHEETFEED EXECUTIVE



The
Graphic
Arts
Technical
Founda-

tion (GATF) and the National Association of Printers and Lithographers (NAPL) have named Frank Woods, president of Woods Lithographics, Phoenix, AZ.

Woods was nominated by a variety of individuals including customers, suppliers, and fellow employees. Frank Woods was nominated because of his contributions to the printing industry, his standards of excellence, and his support of charitable organizations. In 1978 Woods and his wife Barbara founded Woods Lithographics with the intent of producing printed excellence at every level. Today the company employs 100 people and has received awards from the Printing Industries of America (PIA), the Art Directors Club, the New York Art Directors Club, AR100, the San Francisco Creative Alliance, the Dallas Society of Visual Communicators, and the Gold Ink Awards. Woods is credited with creating commercial work using 300- and 500-line screens while most of the industry was still using 200-line screens. In 1992, Woods Lithographics introduced the UltraDot R600 Printing System and two years later developed and began offering the UltraRaster® Printing System.

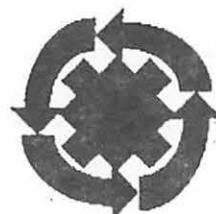
GATF AND NAPL ANNOUNCE CREATION OF NSTF SCHOLARSHIP

The Graphic Arts Technical Foundation (GATF) and the National Association of Printers and

Lithographers (NAPL) has announced the creation of an NSTF scholarship honoring the Sheetfed Executive of the Year. The scholarship is to be awarded to a college chosen by Sheetfed Executive of the Year.

The National Scholarship Trust Fund, headquartered at GATF, develops and administers scholarships and fellowships to students interested in pursuing careers in the graphic arts field. NSTF awards scholarships under two separate programs. The first is intended for high school seniors or recent high school graduates undertaking a two- or four-year program of study. The second is intended for students already enrolled in a four-year program.

PROGRAM SET FOR HFES 39TH ANNUAL MEETING



The technical and social programs for the Human Factors and Ergonomics Society's 39th Annual Meeting have been set, and regis-

tration materials will be available on July 17. The meeting will be held October 9-13, 1995. The meeting headquarters is the Sheraton Harbor Island Hotel in San Diego, California. Throughout the week, members and nonmembers may attend 16 hands-on workshops geared toward professionals at all levels (CEU credit available) and more than 100 technical sessions on the full range of ergonomics involvement: design, prototyping, test and evaluation, training, and maintenance. Session topics include:

- office workstation design
- advanced traveler information systems
- medical systems and rehabilitation
- ergonomics education
- warnings, risk behavior, and safety
- product design and evaluation
- biomechanics and psychophysics

(Continued→)

- computer input devices and visual displays
- using the Internet
- cognitive functioning and decision making
- virtual reality
- communications interfaces
- system development models
- organizational issues and job design
- development of ergonomics standards

Book, service, and product exhibits will be open October 10-12; attendees may also visit technical and research facilities in the area and attend special events, such as the opening reception, an awards banquet, and premeeting outings to Tijuana and the Temecula wineries. Demonstrations of computer-based systems will be available. The HFES Placement Service will help to match job seekers and employers throughout the week. For information, contact HFES, P.O. Box 1369, Santa Monica, CA 90406-1369, USA; 310/394-1811, fax 310/394-2410, 72133.-1474@compuserve.com.

HFES News Release

ASIA DISPLAY '95 EMPHASIZES DISPLAYS FOR MULTIMEDIA SYSTEMS OF THE FUTURE



Asia Display '95, the new name for Japan Display, will be held in ACT CITY Hamamatsu, Hamamatsu, Japan, from October 16 to 18, 1995. The conference, sponsored by the Society for Information Display and the Institute of Television Engineers of Japan, will include an invited talk by Hidehiko Katoh on the Progress in TFT-LCDs Technology and Production. Overall, the conference covers a broad range of research developments relating to electronic information displays.

The conference location is the home of Yamaha Corp., which gives Yamaha the opportunity to present a special evening session: "Past, Present, and Future of Electronic Musical Instruments (with Demonstrations)."

The International Display Workshops '95, held in conjunction with Asia Display, will be presented on

October 19. These invited tutorials include ample time for detailed discussion. Among them is a workshop on HDTV and its industrial applications, including applications in cinema, printing, medicine, and museums. Other workshops will cover stereoscopic 3D display technologies and applications, LCD color filters, (Continued on page 17)



SPE RETEC 95

Sep. 25 - 26

Color & Appearance Division & Carolinas Section of the Society of Plastics Engineers (SPE)

"Coloring Properties and Effects of Colorants on Processing and Polymer Properties"

Isle of Palms, Wild Dunes Resort

Information: Johnny F. Suthers

Phone: (615) 229-3263

RETEC Technical Program Schedule

Monday, September 25, 1995

7:00 - 8:00 RETEC ATTENDEES BREAKFAST

8:00 - 17:00 Registration

8:15 - 8:30 Conference Opening

8:30 - 9:00 Toxic Use Reduction Approach to Formulation

9:00 - 9:30 Improved Performance of Enhanced Ultramarines in Colour Concentrate Production

9:30 - 10:00 The Influence of Resin + Additives on Properties of 80% TiO₂ / LDPE Mater Batch

10:00 - 10:15 BREAK

10:15 - 10:45 Heat Stability Testing of Organic Pigments

10:45 - 11:15 Dispersive and Distributive Mixing For Carbon Blacks in Polymers

11:15 - 11:45 A Unique Highly Transparent, Yellow Pigment for Polyolefin Fibers

12:00 - 13:15 LUNCH and AWARDS

12:45 GUEST SPEAKER

13:15 - 13:45 An Anthology of Color Measurement Error Mechanisms

13:45 - 14:15 Heavy Metal Free Color Concentrates for Engineering Resins

14:15 - 14:45 A Journey Through FDA Requirements for Polymer Colorants

14:45 - 15:15 Advances in Equipment Design for Color Compounding

15:15 - 15:30 BREAK

15:30 - 16:00 Improving Colour Control In Automotive PVC

16:00 - 16:30 A Complete Solution for Computer Color Formulation

17:00 HOSPITALITY SUITS OPEN

Tuesday, September 26, 1995

7:00 - 11:30 REGISTRATION CONTINUES

8:00 - 8:30 Rapid Evaluation of Pigment Color

8:30 - 9:00 Effect of Optical Brighteners on Polymer Color Properties

9:00 - 9:30 Efficiently Blending Colorants and Additives

9:30 - 10:00	Colorant Selection Criteria for New Product Development
10:00 - 10:15	BREAK
10:15 - 10:45	In Search of the Perfect Color
10:45 - 11:15	Hindered Amines Effects on Dispersion
11:15 - 11:45	Discussion of Production Techniques to Optimize Quality
12:00 - 13:15	LUNCH and AWARDS
12:45	GUEST SPEAKER
13:15 - 13:45	Dyes for Performance Applications
13:45 - 14:15	TiO ₂ in High Temperature Film
14:15 - 14:45	New Ultramarine Pigments Line
14:45 - 15:15	Weathering of Black, Thin-Gauge Polyethylene Films
15:15 - 15:30	BREAK
15:30 - 16:00	Fluorescent Colorants for Special Plastics Applications
16:00 - 16:30	Development of Cerium Red Pigment: An Alternative to Heavy Metals
17:00	HOSPITALITY SUITS OPEN

Wednesday, September 27, 1995 - Thursday, September 28, 1995

Two-day workshop dedicated to raise the attendee's level of knowledge of plastics coloring. Hands-on experience will help the attendee understand color, appearance, pigments (colorants) and visual/computer color matching. Day one will cover Science and day two will cover Color Matching. ***This activity is separate from the RETEC program and not included with RETEC registration.***

OTHER NEWS

CALL FOR PAPERS! AIC INTERIM MEETING 96, COLOUR AND PSYCHOLOGY JUNE 15-18, 1996 GOTHENBURG, SWEDEN

Many psychological questions are asked about colours. Colours carry symbolic meaning, but do all cultures share this meaning? Are colour preferences completely individual? Are colours related to certain moods, personality traits, etc.? How do we talk about colours, do we name them in the same way? Are we effected by colours in the environment? How is colour used in literature?

During this international conference the focus will be on what empirical research has to offer as answers to questions of this kind. The psychological question of colour appearance will also be taken up, including transparency, appearance changes due to distance, lighting and other conditions.

Oral and Poster presentations are invited from people from all relevant disciplines and anybody who is interested. The conference will also include a number of invited lectures.

An Extended Abstract of not more than 1000 words should be submitted by January 1, 1996. All papers must be written in English. Acceptance of papers is subject to review by the Papers Committee and authors will be notified by February 15, 1996.

Expression of interest could be done by completing and returning the form below. A second circular giving further details will be sent to those who have submitted this form.

Gothenburg, situated on the west-coast, is Sweden's second largest city

and considered to be very charming., it has a good selection of hotels ranging from budget to luxury, proposals will be included in the second circular.

Registration fees for delegates is expected to be about SEK 2,700 (approx. 370 USD) including the proceedings, reception at the evening of arrival, lunches, morning and afternoon coffees, as well as a get-together party.

For further information contact Colour and Psychology, Prof. Lars Sivik - Inst. Of Visual Env. Res, Kullaviks Skogsvag4, S-429 35 Kullavik - Sweden - Tel. 46 (0) 31 933347 FAX 46 (0)31 431012 - E-mail: sivik@psy.gu.se

JUDD-AIC AWARD

On Tuesday, September 5, 1995, at the Interim Meeting of the International Colour Association (AIC) in Berlin, Germany, the President of AIC, Prof. Dr. Lucia R. Ronchi, will present the Deane B. Judd-AIC Award for 1995 to Prof. Dr.-Ing. Heinz Terstiege for his leadership and important work in the field of color science.

This award has been presented not more often than biennially since 1975 when it was established by his wife, Elizabeth (Betty) Judd, to honor the memory of her husband, a renowned twentieth century color scientist.

The award consists of a gold medal with a portrait of Deane Judd on one side. On the other side will be the inscription "To honor Heinz Terstiege 1995 for important work in color science."

The award was originally administered by the Munsell Color Foundation, but when the foundation was disbanded administration was transferred to the Munsell Color Science Laboratory, Roy Berns, director.

(Continued→)

Previous recipients, listed chronologically, have been

Miss Dorothy Nickerson
Professor William David Wright
Doctor Gunter Wyszecki
Professor Manfred Richter
Doctor David Lewis MacAdam
Doctor Leo M. Hurvich and
Dr. Dorothea Jameson
Doctor Robert W. G. Hunt

Harry K. Hammond III

COLOR RESEARCH AND APPLICATION

In This Issue, October 1995

David L. MacAdam opens this issue with a Talking About Color... column in which he discusses color in the stained glass windows of Chartres Cathedral, and a description of these windows by Henry Adams. The descriptions in Dr. MacAdam's column set the tone for a two-part article by John Hutchings also found in the issue.

The very broad topic of "The Continuity of Colour, Design, Art, and Science" is tackled by John Hutchings. Though his physics background, his book on the color of food and his more recent coordination of the survey of color in folklore, Mr. Hutchings is uniquely qualified to examine the role of color in total appearance. In an attempt to emphasize the continuity of science and art, he examines scenes from the manufactured product, interior design, and the performing and fine arts. In "Part 1. The Philosophy of the Total Appearance Concept and Image Measurement" he describes the principles involved in the basic perceptions of form, color, translucency, gloss and movement. In Part 2 of The Continuity of Colour, Design, Art, and Science, "Applications of the Total Appearance Concept to Image Creation" Mr. Hutchings seeks to help practitioners of both science and art achieve a greater understanding and

control of the visual images by looking at the concept of image creation in five real-life activities, items, or scenes.

Readers of this journal over the past five years probably have become familiar with the monumental research involving data collection for various aspects of color appearance that has been undertaken at the Loughborough University of Technology Computer-Human Interface Research Centre. Many factors are likely to affect the color appearance of objects and the fidelity of color reproduction. Past articles describe data that has been collected in several media from color monitors, to back-lit transparencies, to reflective painted papers under various conditions. Wen-Guey Kuo, M. Ronnier Luo and Helmut E. Bez describe the collection of a new set of color appearance data and the subsequent analysis of chromatic-adaptation transformations predicted by diverse color appearance models. In "The Various Chromatic-Adaptation Transformations Tested Using New Colour Appearance Data in Textile," they describe the collection of a set of color appearance data in the textile media, and then they use this data to evaluate the performance of seven chromatic-adaptation transformations. Textiles not only offer a different medium with more texture, but also are of interest because the viewing conditions often involve larger field sizes (10' rather than 2'). While the results clearly indicate some models perform better than others, the results also show that no model has the predictive capabilities to satisfy the needs in the textile industry.

The next article describes the development of another observer data base. In the many industries where color is an important consideration, it has become increasingly common to use colored CRT monitors for at least part of the color work. Then very often one is trying to compare monitor color either simple colored patches or complex scenes with either original real-life scenes or printer reproductions of the colors on the monitor. However to accomplish this there is often

considerable difference in the color gamut available in the two systems. Thus it is necessary to map color that can be achieved in one medium on to achievable color gamut of the other medium. Most gamut mapping strategies involve holding the hue constant while remapping the other color dimensions. This is most easily accomplished if the color appearance space used to define the color gamuts has linear loci of constant perceived hue. In order to evaluate color appearance models for constant hue loci a new data base of pseudo-object colors was developed at the Munsell Color Science Laboratory of Rochester Institute of Technology. In the "Determination of Constant Hue Loci for a CRT Gamut and Their Predictions Using Color Appearance Spaces," Po-Chieh Hung and Roy S. Berns report on both the development of the data base and the subsequent evaluation of four color appearance spaces.

The October issue ends with a short note that has a long table. The British Building Colour Standards were developed to provide a framework for the coordination of colors for the use in the building industry. The original method of notation, hue, greyness, and weight content was unique, and therefore not conducive to international use. In "The British Building Colour Standards: Conversion to the Notations of Munsell, NCS, DIN, Coloroid, Colorcurve and OSA-UCS" Ali A. Hamie, T. W. Allan Whitfield, and T. John Wiltshire provide the aim points and actual values of the British Building Color Standards (BS5252) in some of the more widely used color systems throughout the world, thus making them more practical and convenient.

Ellen Carter
Color Research and Application



CALENDAR

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

Harry K. Hammond, III
or
John Peterson
BYK-Gardner, USA
2435 Linden Lane
Silver Spring, MD 20910
Phone: 301-495-7150
Fax: 301-585-4067

1995

AIC INTERIM MEETING '95

Colorimetry

Sept. 4 - 6

Berlin, Germany

Information: Prof. Dr. Heinz Terstiege
c/o BAM

Unter den Eichen 87

12205 Berlin, Germany

Fax: (011) 49-30-812-10-83

Sept. 4 - 8

Silver Halide and Electronic Imaging

Information: Dr. M. R. Pointer

Kodak Ltd.

Research Division W93

Headstone Drive

Harrow

Middlesex

HA1 4TY

Phone: (011) 44 0181 424 3750

Fax: (011) 44 0181 424 3750

OSA ANNUAL MEETING

Sept. 10 - 15

Optical Society of America Annual Meeting

Portland, OR

Information: OSA Meeting Department

Phone: (202) 416-1980

"COLOR AND CULTURAL HERITAGE" CONFERENCE '95

Sept. 12 - 15

Color Group - Bulgaria

"St. Constantine" Resort

"F. J. Curie" Scientists' House

Varna, Bulgaria

Information: M.F.A Krasimir Krustev

Color Group - Bulgaria

P.O.B. 431

BG-1000

Sofia Bulgaria

Phone: (011) 359-2-88-4075

Fax: (011) 359-2-87-9360

SPE RETEC 95

Sept. 25 - 26

Color & Appearance Division & Carolinas Section of the
Society of Plastics Engineers (SPE)

"Coloring Properties and Effects of Colorants on Processing
and Polymer Properties"

Isle of Palms, Wild Dunes Resort

Information: Johnny F. Suthers

Phone: (615) 229-3263

AATCC CONFERENCE AND EXHIBITION

Oct. 8 - 11

American Association of Textile Chemists and Colorists

Hyatt Regency

Atlanta, GA

Information: AATCC

Phone: (919) 549-8141

IS&T 4th TECHNICAL SYMPOSIUM

WITH GRAPH EXPO '95

Oct. 8 - 12

Prepress, Proofing, & Printing

Chicago, IL

Information: IS&T

7003 Kilworth Lane

Springfield, VA 22151

Phone: (703) 642-9090

Fax: (703) 642-9094

email: Imagesoc@us.net

Oct. 9 - 11

Biological Effects of Light

Hotel Nikko

Atlanta, GA

Information: Scott Bowen

(404) 252-7913

FSCT Annual Meeting & Paint Industries Show

Oct. 9 - 11

Saint Louis, MO

Information: Robert Ziegler

Federation of Societies for Coating

Technology

492 Norristown Rd.

Blue Bell, PA 19422-2350

Phone: (610) 940-0777

Fax: (610) 940-0292

GATF, NSTF, AND PIA ANNUAL MEETING

Oct. 28 - 31

Preparing for Tomorrow's Technology Today

Colonial Williamsburg Inn and Lodge

Williamsburg, VA

Information: Kathy M. Halligan

GATF

4615 Forbes Avenue

Pittsburgh, PA 15213

Phone: (412) 621-3790 ext. 243

Fax: (412) 621-3049

- or -

Colleen Scully

Printing Industries of America, Inc.

100 Daingerfield Road

Alexandria, VA 22314

Phone: (703) 519-9187

Fax: (703) 548-3327

IS&T 11th ANNUAL INTERNATIONAL CONGRESS

Oct. 28 - Nov. 3

Advances In Non-Impact Printing Technology

Hyatt Regency Hilton Head

Hilton Head Island, SC

Information: IS&T

7003 Kilworth Lane

Springfield, VA 22151

Phone: (703) 642-9090

Fax: (703) 642-9094

email: imagesoc@us.net

CIE 23rd QUADRENNIAL MEETING

Nov. 1 - 3 Division Meetings: Nov. 6 - 8

International Commission on Illumination

Vigyan Bhavan Conference Complex

New Delhi, India

Information: Jonathan Hardis

Secretary USNC/CIE

Phone: (301) 975-2373

Fax: (301) 840-8551

E-mail: hardis@onyx.nist.gov

CMG FALL CONFERENCE

Nov. 5 - 7

Color Marketing Group International Color Directions
Conference

The Pointe Hilton Resort at Squaw Peak

Phoenix, AZ

Information: Katie Register

Phone: (703) 329-8500

Fax: (703) 329-0155

IS&T & SID 3rd COLOR IMAGING CONFERENCE

Nov. 7 - 10

Color Science, Systems, and Applications

Radisson Resort

Scottsdale, AZ

Information: IS&T

7003 Kilworth Lane

Springfield, VA 22151

Phone: (703) 642-9090

Fax: (703) 642-9094

email: imagesoc@us.net

ASTM COMMITTEE D-20 ON PLASTICS

Nov. 13 - 16

Norfolk, VA

Information: Mrs. Katherine Morgan

Phone: (215) 299-5529

1996**ASTM COMMITTEE D-1 ON PAINT**

Jan. 21 - 24

Fort Lauderdale, FL

Information: Scott Orthey

Phone: (215) 299-5507

ASTM COMMITTEE E-12 ON APPEARANCE

Jan. 22 - 24

Fort Lauderdale, FL

Information: Bode Buckley

Phone: (215) 299-5599

USNC/CIE "1995" ANNUAL MEETING

Jan. 27-29

United States National Committee of CIE

Orlando, FL

Information: Jonathan Hardis

Secretary USNC/CIE

Phone: (301) 975-2373

Fax: (301) 840-8551

E-mail: hardis@onyx.nist.gov

IS&T/SPIE

Jan. 28 - Feb. 2

Electronic Imaging: Science and Technology

San Jose Convention Center

San Jose, CA

Information: IS&T Conference Manager

7003 Kilworth Lane

Springfield, VA 22151

Phone: (703) 642-9090

Fax: (703) 642-9094

email: imagesoc@us.net

(Continued→)

IS&T 9th INTERNATIONAL SYMPOSIUM

Feb. 18 - 21

Photofinishing Technology

Co-located with PMA Show (Feb. 22 - 25)

Las Vegas, NV

Information: IS&T Conference Manager

7003 Kilworth Lane

Springfield, VA 22151

Phone: (703) 642-9090

Fax: (703) 642-9094

ASTM COMMITTEE D-20 ON PLASTICS

Mar. 18 - 21

Orlando, FL

Information: Mrs. Katherine Morgan

Phone: (215) 299-5529

TAGA ANNUAL CONFERENCE

Apr. 28 - May 1

Technical Association of the Graphic Arts Annual Technical Conference

Dallas, TX

Information: Karen Lawrence

Phone: (716) 475-7470

ISCC ANNUAL MEETING WITH ASTM

May 5 - 7

Orlando, FL

Information: Danny Rich

Phone: (609) 895-7427

Fax: (609) 895-7461

ASTM COMMITTEE E-12 ON APPEARANCE

May 8 - 10

Orlando, FL

Information: Bode Buckley

Phone: (215) 299-5599

CMG SPRING CONFERENCE

May 5 - 7

Color Marketing Group Conference

Sheraton New Orleans Hotel & Towers

New Orleans, LA

Information: Katie Register

Phone: (703) 329-8500

Fax: (703) 329-0155

EXPO 96

May 11 - Oct. 4

Color and Light in Communication

Information: Gabor David

3 Tukory u.

Budapest

H-1054

Hungary

SID '96

May 13 - 17

San Diego, CA

Information: Lauren Kinsey

SID

1526 Brookhollow Drive

Suite 82

Santa Ana, CA 92705

Phone: (714) 545-1526

Fax: (714) 545-1547

email: socforinfodisplay@mcimail.com

IS&T 49th ANNUAL CONFERENCE

May 19 - 24

Minneapolis Marriott City Center

Minneapolis, MN

Information: IS&T Conference Manager

7003 Kilworth Lane

Springfield, VA 22151

Phone: (703) 642-9090

Fax: (703) 642-9094

AIC - '96 INTERIM MEETING

June 16 - 18

Color Psychology Beyond Psychophysics

Gothenburg, Sweden

Information: Lars Sivik

Kullaviks Skogsväg 4

S-429 35 Kullavik, Sweden

Phone: (011) 46-31-933347

Fax: (011) 46-31-431012

email: sivik@psy.gu.se

ASTM COMMITTEE D-1 ON PAINT

June 23 - 26

San Francisco, CA

Information: Scott Orthey

Phone: (215) 299-5507

ASTM COMMITTEE E-12 ON APPEARANCE

June 24 - 26

San Francisco, CA

Information: Bode Buckley

Phone: (215) 299-5599

AATCC CONFERENCE AND EXHIBITION

Sept. 15-18

American Association of Textile Chemists and Colorists

MEMBERSHIP APPLICATION

INTER-SOCIETY COLOR COUNCIL APPLICATION FOR INDIVIDUAL MEMBERSHIP

Name _____ Date _____

☐ Dr. ☐ Mr. ☐ Ms.

Company/Affiliation _____

Street _____

City, State, Zip _____

Telephone (____) _____

☐ Home

Fax (____) _____

☐ Business

E-mail Address _____

Signature _____

My chief interests in color are:

☐ Fundamental and Applied Research

☐ Industrial Application of Color

☐ Art, Design and Psychology

My work relates to the following products and services:

Name other interests _____

My present and past business, professional or educational connections with color are: _____

My particular interests in color are: _____

I belong to the following national organizations or associations: _____

I learned about ISCC from: ☐ ISCC Newsletter ☐ Other source: _____

Please tell us the individual or organization that interested you in ISCC

ISCC dues are shown on the reverse side. Applications for membership dated prior to July 1 should be accompanied by full annual dues; those dated July 1 and later should be accompanied by 50% of annual dues. You have the option of subscribing to Color Research & Application at special membership rates. If you wish to do so, please Contact John Wiley & Sons, Inc. Directly. John Wiley & Sons, Inc. Attn. M Fellin, 10th Floor, 605 Third Avenue, NY, NY 10158-0012

This application and remittance should be sent to

Inter-Society Color Council, ATTN: Membership

11491 Sunset Hills Rd., Suite 301, Reston, VA 22090 Telephone (703) 318-0263

ISCC BY-LAWS

EXCERPT FROM THE BY-LAWS OF THE INTER-SOCIETY COLOR COUNCIL, INC.

Constitution, Article II — Aims and Purposes

The Council shall operate solely and exclusively as a non-profit organization with the aims and purposes:

- A. To stimulate and coordinate the work being done by the various members leading to the description and specification of color by these members.
- B. To promote the practical application of this work to the color problems arising in science, art, and industry, for the benefit of the public at large.
- C. To promote communications between technically oriented specialists in color and creative workers in art, design, and education, so as to facilitate more effective use of color by the public through dissemination of information about color in both scientific and artistic applications.
- D. To promote educational activities and the interchange of ideas on the subject of color and appearance among its members and the public generally.
- E. To cooperate with other organizations, both public and private, to accomplish these objectives for the direct and indirect enjoyment and benefit of the public at large.

Council Activities

The ISCC is the principal professional society on the field of color in the United States, encompassing the arts, sciences and industry, pursuant to the Aims and Purposes described above. Other national organizations with an interest in color are Member-Bodies of the Council and appoint delegations to participate in the Council's work. Individual members are the largest single group. The Annual Meeting, usually held in April, includes meetings of the Project Committees and sessions of three Interest Groups: Fundamental & Applied Color Research; Industrial Application of Color; and Art, Design & Psychology. There is also a main program devoted to a specific aspect of color plus a Poster Paper session. Joint programs with one of the Council's Member-Bodies are interesting and educational.

In most years there is a separate topical Williamsburg Conference, often in February, where a single color subject is explored in depth with participants from all over the world providing state-of-the art information. Attendance at these conferences is usually smaller than at Annual Meetings, reflecting their topical nature and permitting interaction between speakers and participants.

The ISCC is the U.S. Member of the Association Internationale de la Couleur (AIC), which holds general meetings quadrennially and topical meetings annually. Color Research & Application, published bimonthly in English, is the principal international journal in this field; it is endorsed by ISCC. It reports recent research and opinions of colorists, review books and reports on national and international color meetings. Membership in ISCC permits subscription at more than a 50% discount. The ISCC News, a bimonthly newsletter, reports the color activities of the Council, its members, Member-Bodies and international color organizations. Members receive the ISCC News at no cost. Member-Bodies and Sustaining Members receive 10 copies of the ISCC News.

Categories of Membership

	Annual Dues
<i>Individual Member.</i> Any person interested in color and desirous of participating in the activities of the Council.	\$45.00
<i>Student Member.</i> Full time students.	\$10.00
<i>Member-Body.</i> Any non-profit national organization interested in color and desirous of participating in the activities of the Council.	\$100.00
<i>Sustaining Member.</i> Any organization not eligible as a Member-Body, or any individual, interested in color and wishing to support the work of the Council. Receives 10 copies of ISCC News.	\$500.00
<i>Retired.</i> Treasurer must be notified, in writing, of retirement before dues have been billed.	\$10.00
<i>Library Subscriptions.</i> Receives all ISCC mailings, including ISCC News.	\$60.00
<i>Overseas Member.</i> A surcharge of \$20 is added to \$45 dues to cover additional mailing costs.	\$65.00

(SID, Continued from page 11)

advanced LCDs, phosphor and phosphor applications, and plasma display physics and materials.

The Workshop organizers are planning to use teleprompters and other audio-visual aids to help make their oral presentations as effective as possible. In addition, the organizers hope to supply translation services at the question-and-answer sessions to facilitate true international communication and interaction, said Professor Shunsuke Kobayashi of Tokyo University of A&T, the Workshop Chair.

Asia Display '95 and the International Display Workshops are scheduled to overlap the dates of the Japan Electronic Show, which is being held from October 17-21 at INTEX Osaka, making it convenient to attend all three events within a single week.

For conference and hotel registration information, contact the Asia

Display '95 Secretariat, c/o The Convention, Annecy Aoyama 2F, 2-6-

12, Minami-Aoyama, Minato-ku, Tokyo 107, Japan. Phone +81-3- 3423-4180; fax +81-3-3423-4108.

Registration for the International Display Workshops is on-site only.

Information is available from Masahiko Seki at NHK Science and Technology Laboratories in Tokyo. Phone +81-3-5494-2253; fax +81- 3-5494-2256.

SID News Release



J O B S 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 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!

JOB WANTED:

Prof. Dr. Todor Kehlibarov
P.O. Box 1089
Sofia, BG-1000 Bulgaria
Ph/fax: 011 359 2 880597
US Contact: Dr. F.W. Billmeyer,
Ph/fax: 518 377 9511

Senior color and light scientist seeking short or long term position in the West. Speaks English, French, several European languages. More than 30 years experience in instrumental and visual color measurement of wide variety natural and synthetic materials. Can perform research, establish laboratories, teach courses, supervise quality control, much more.

JOB WANTED

Phil Q. Jin,
The University of Chicago, 939 East 57th Street, Chicago,
IL 60637
ph.: (312)702-1987 (lab) or (312)363-7919 (home)
fax: (312)702-4442
e-mail: jinq@midway.uchicago.edu

Ph.D. in Color Vision (03/95), MS in Color Science/Optics, interested in obtaining a professional position doing research, development, or marketing in color science and/or optics. Fluent in Chinese and English. Experienced in color vision, psychophysics, colorimetry, photometry, statistics, UNIX, C, image display programming. Permanent resident of USA.

ISCC NEWS EDITOR Michael A. Hammel

Send photo material (black and white if possible) to:

Editor, ISCC News • Michael A. Hammel • 3782 Bonny Rigg Trail, Roswell, GA 30075

Please send all other materials on diskette as follows to the above address:

MS DOS-ASCII, Q&A, Word Star, Word Perfect (5.25"-1.2 Meg, or 360K) (3.5"-1.44 Meg or 730K). MACINTOSH-Word, Macwrite, MS Works (3.5"-1.44 Meg, 800K or 400K).

E-mail:

Internet: hammel@gvu.gatech.edu (or) MCSL@rit.edu

Compuserve: 75664,1567

If necessary, fax material to (404) 587-5128

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



meeting reports



photos



contributions from members

OFFICERS 1994-1996

Position	Name	Address	Telephone	FAX
President	Mr. Roland L. Connelly	ShelLyn, Inc., 1108 Grecale Street, Greensboro, NC 27408	(910) 274-1963	(910) 274-1971
Pres. Elect	Dr. Ellen C. Carter	2509 N. Utah Street, Arlington, VA 22207	(703) 527-6003	
Secretary	Dr. Danny C. Rich	Datacolor International, 5 Princess Rd., Lawrenceville, NJ 08648	(609) 895-7427	(609) 895-7461
Treasurer	Mr. Daniel S. Walton	Color and Appearance Technology P.O. Box 3709, Princeton, NJ 08543	(609) 734-0300	(609) 734-0245
Past-Pres.	Ms. Paula J. Alessi	Eastman Kodak Company, Rochester, NY 14650	(716) 477-7673	(716) 722-1116

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1994-1997

Mr. Michael A. Hammel	3782 Bonny Rigg Trail Roswell, GA 30075	(404) 587-5120	(404) 587-5128
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Mr. William S. Vogel	10013 Sagefield Dr., Baton Rouge, LA 70818	(504) 261-7107	

1995-1998

Dr. Mark Fairchild	RIT Munsell Color Science Laboratory, P.O. Box 9887 Rochester, NY 14623	(716) 475 2784	(716) 475 5988
Prof. Wade Thompson	1910 East Cardinal St., Springfield, MO 65804	(417) 836 6694	(417) 883 5830

ISCC MEMBER-BODIES

American Association of Textile Chemists and Colorists (AATCC)	Graphic Arts Technical Foundation (GATF)
American College of Prosthodontists (ACP)	The Human Factors & Ergonomics Society
American Society for Testing and Materials (ASTM)	Illuminating Engineering Society of North America (IESNA)
American Society of Interior Designers (ASID)	National Artists Equity Association (NAEA)
American Society for Photogrammetry and 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 Manufacturers Association (CPMA)	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)

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Pantone Color Institute
Color and Appearance Technology

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