Inter-Society Color Council *News*

Number 342 March/April 1993

IN THIS ISSUE

THE 1993 ISCC ANNUAL MEETING

IS JUST AROUND THE CORNER!

Keep April 18, 19, 20, and 21 open. Plan to attend the ISCC Annual Meeting and stay for the ISCC/CPMA's Symposium "Color Pigments, Regulations, and the Environment".

This year's meeting theme is "Color: Regulations and Environment". There will be much to do and much to see. From the ISCC Meeting to the ISCC/CPMA (formerly the DCMA) agenda, you will be "fruitfully" busy.

ISCC Interest Group I, Fundamental and Applied Color Research, has a large variety of topics they will be discussing. They include Color Appearance Modeling, Color Reproduction, Color Image Compression, and much more. When the session ends, ideas for future meetings and ideas for the direction of IG I will be solicited. Give them your input.

ISCC Interest Group II, Industrial Application of Color, will discuss, among other things, objective estimates of color differences, the current CIE recommendations for color differences, CMC (this should be good) and much more. Be there if you want to stay on top of what is happening in industry.

ISCC Interest Group III, Art Design and Psychology, will be presenting an exciting program of speakers addressing the topic of human wellness as influenced and manipulated through color, light and environmental design. Current speakers include architects and designers from the faculty of the New York School of Interior Design and the College of Architecture at the Rhode Island School of Design. IG III is committed to providing a forum for ISCC members and non-members interested in sharing research and ideas related to art, design and psychology.

ISCC Project Committee 44 will be presenting results of recent research to extend the data set to compare the Fairchild-Pirotta correction for lightness to a function proposed by Rodriques. Also being discussed is Joy Luke's extension to her visual studies of the proposed system for colorimetry.

ISCC Project Committee 49 will examine the current documentation of colorimetry difficulties, and will document why improvements are needed, and as well will determine what further documentation is needed. Secondly they will work to substantiate and extend the new visual data by using a visual colorimeter coupled to a spectroradiometer. They are also very involved in other areas of interest to a wide variety of ISCC members, so plan on attending this one!

There will be a very interesting ISCC Poster Session on Sunday evening.

You can see the Instrument Manufacturer's Color Measuring Systems on display after the meetings, both Monday and Tuesday evenings.

These items just touch the surface of this year's meeting. There are going to be some surprises also. You *must* be there to see and hear it all.

Come one, come all!

It's simple to register. You should have already received the ISCC/DCMA notice and registration form in the mail. Simply complete the registration form and mail it in. It's that easy!

The registration form includes everything listed on the back page of the brochure, *including* the dinner Monday evening. You will need to register when you check in, if you plan on attending the dinner. Do so early, as seating is somewhat limited.

CALL FOR MACBETH AWARD NOMINATIONS

Every two years the Inter-Society Color Council is honored to be able to present the Macbeth Award to an individual for outstanding recent contributions to the field of color. This award was established in 1970 by Mr. Norman Macbeth, Jr. in honor of the memory of his father, Norman Macbeth, a founding member of the ISCC and founder of Macbeth Daylighting Corporation, now a part of Kollmorgen.

Nominations for the Macbeth Award are now being considered by the Macbeth Award Committee. Individuals or groups of individuals interested in having a specific nominee considered by the committee should submit nominations by October 1, 1993.

Candidates will be judged for their recent significant contribution to any field of interest related to color whether or not it is represented by an Inter-Society Color Council Member-Body. The candidate's contribution may be direct, it may be in the active practical stimulation of application of color, or it may be an outstanding dissemination of knowledge of color by writing or lecturing, based on original contributions by the nominee. Candidates need not have been active in the affairs of the Inter-Society Color Council but they must be either a current or former member of the ISCC. Requests for nomination forms should be directed to:

Joel Pokorny
Chairman, Macbeth Award Committee
Visual Sciences Center
University of Chicago
939 East 57th Street
Chicago, IL 60637
Phone 312 702-1983
Fax 312 702- 4442
e-mail: s+p@chroma.uchicago.edu

To All Members

CALL FOR ASSISTANCE

Individual Members and Member-Body Delegates to ISCC, are invited to submit suggestions for locations and topics for *future* ISCC meetings. Commitments for Annual meetings and for Williamsburg Conferences are typically made two years in advance, so plan ahead!

Please forward your recommendations and ideas for meeting topics and locations to:

Michael A. Hammel
ISCC News Editor
98 Grand View Drive
Fairport, NY 14450
(716) 223-1823 (voice) (716) 425-2411 (facsimile)

Also, please let us know whether or not you would be willing to serve as the local program chair.

NEW BOARD MEMBERS ELECTED

The Inter-Society Color Council is pleased to announce the election of three new directors to the Board of Directors. At the end of the Annual Meeting April 21, 1993 in Newport, Rhode Island, Gary F. Beebe, Joseph F. Campbell and Robert T. Marcus will replace retiring directors Ann Laidlaw of SheLyn, Inc., Greensboro, NC; Nancy Jo Howard of Philadelphia College of Textiles and Science, Philadelphia, PA; and Romesh Kumar of Hoechst Celanese Corporation, Coventry, RI. The new members will serve from 1993 until 1996.

Gary F. Beebe received a B.S. in Plastics from the University of Lowell, an M.S. in Color Science from Clemson University where he studied under Professor Fred Simon, and an M.B.A. from Ohio University. He has been employed by the Rohm & Haas Company in Bristol, PA since 1985, where he now is Manager of Color and Optical Services in the Plastics Technology Center. Prior to joining Rohm & Haas, he was manager of the color and measurement laboratory of the Owens Corning Fiberglass Technical Center in Granville, Ohio. Mr. Beebe is Technical Program Chairman of the Society of Plastics Engineers (SPE), Treasurer of the Delaware Valley Section of the SPE, and was the organizer of the Regional Technical Conference of the SPE/Color and Appearance Division held in Cherry Hill, NJ this past year.

Joseph F. Campbell received his B.S.E. degree from the University of Michigan. He is a Senior Engineer with DuPont Automotive Finishes in Troy, MI. Mr. Campbell's responsibilities are for applied color research projects in automotive finishing, including computer color matching, dispensing systems, colorimetry, and color order systems. He is a member of the Detroit Colour Council. Last year he was responsible for the entire color matching instrument show and exposition held in conjunction with the ISCC Annual Meeting in Princeton, New Jersey.

Robert T. Marcus is the Manager of the Color Standards Laboratory at Pantone, Inc. He received his B.S. and Ph.D. from Renselaer Polytechnic Institute, where his graduate research investigated the visual spacing of the Munsell Color Order System under the direction of Professor Fred W. Billmeyer, Jr. Prior to joining Pantone, Dr. Marcus was Technical Manager for Color Data Products for the Macbeth Division of Kollmorgen Corporation and a researcher of metallic paint systems at PPG Industries. He is currently Membership Secretary of ASTM Committee E12 on Appearance, a member of the Federation of Societies for Coatings Technology and a member of the United States National Committee of the CIE. *ISCC News Release*

NEWS FROM MEMBER BODIES

ASTM INSTITUTE FOR STANDARDS RESEARCH NAMES 1993 OFFICERS AND TRUSTEES

ASTM New members of the 1993 Board of Trustees for the ASTM Institute for Standards Research have been named. John A. Blair, manager of standards development for DuPont Polymer Products in Wilmington, DE, is 1993 Chairman, and Connie Glover Ritzert, PCB program manager for the Aluminum Company of America, (Alcoa) in Pittsburgh, PA is 1993 Vice Chairman.

Albert J. Bartosic, counsel to Petter, Hamilton, and Scheetz in Philadelphia, PA, has been nominated to serve an unexpired one-year term as trustee.

Three trustees have been nominated to serve three-year terms. They are James D. Converse, director of corporate standards for Eastman Kodak Company in Rochester, NY; Donald A. Elinski, supervisor of engineering standards and administrative services with the corporate technology laboratory of Aeroquip Corp., In Jackson, MI; and Thomas M. Moses, vice president of administration for the Reedy Creek Improvement District, Lake Buena Vista, FL.

ISR is a separate, not-for-profit corporation established by ASTM in 1988 to sponsor standards-related research. ISR serves to identify, develop, and manage such research. Current ISR projects involve fire standards, inter-laboratory testing for rock properties, waste disposal, women's sizing standards, degradable plastics, labeling of recyclable plastics, advance ceramics, alkali-silica reaction in concrete, soil testing, skid resistance, composites, and child resistant packaging.

ASTM IRS Press Release

NEW MEMBERS

We are pleased to list the latest members to the ISCC. Welcome!

Dr. Yigal Accad
Electronics for Imaging, Inc.
2855 Campus Drive
San Mateo CA 94403

Ms. Wenying Jin
Visual Sciences Ctr, Univ of Chicago
939 E. 57th Street
Chicago IL 60637

Mr. Jim Leland
Labsphere, Inc.
PO Box 70
Shaker Road
North Sutton NH 03260

Mr. Jack F. Rahill
6th Floor, B69
Research Labs
Eastman Kodak Co.
Rochester NY 14650-1925

Mr. Robin A. Reinhardt
Benjamin Moore & Co.
134 Lister Ave.
Newark NJ 07105

Dr. James E. Rodgers, III
Monsanto, The Chemical Group
PO Box 97
Gonzalez FL 32560-0097

Dr. Arthur G. Shapiro
Univ. of Chicago
Vision Research Lab.
939 E. 57th Street
Chicago IL 60637

Report of Chairman of ASTM Delegates to ISCC

Committee E-12 on Appearance has been very active. The chairman for the two year term, 1992–1994, is William N. Hale, Jr. Other officers are Norbert L. Johnson, Vice-Chairman; J. Murray Stewart, Jr., Recording Secretary; Robert T. Marcus, Membership Secretary; Justin J Rennilson, Past Chairman; and Bode Buckley, ASTM Staff Manager. The Subcommittee on Editorial and Terminology, chaired by Fred W. Billmeyer, Jr., has been adding numerous new terms and revising others contained in Standard E 284 on Terminology of Appearance. New terms and their definitions are added at frequent intervals. The most recent edition of the standard, designated E 284–92 contains over 400 defined terms and many cross references.

ASTM Subcommittee E12.02 Meeting

A Meeting of ASTM Subcommittee E12.02 on Spectrophotometry and Colorimetry was held in Fort Lauderdale, FL, January 18, 1993. The attendance was larger than for any previous meeting. Fifty people signed the attendance sheets, 28 members and 22 visitors. The minutes of the meeting of June 25, 1992, at Princeton, New Jersey, were approved as distributed.

Status of Standards

E313–73 (1987), Test Method for Indexes of Whiteness and Yellowness of Near-White, Opaque Materials. The committee voted to reaffirm this method by concurrent E12.02, E12, and Society ballot.

E805–81(1987), Practice for Identification of Instrumental Methods of Color and Color-Difference Measurement of Materials. An updated revision of the practice is to be submitted to ballot when it is completed.

E1164–91, Practice for Obtaining Spectrophotometric Data for Object-Color Evaluation. Revision had been proposed to amplify the practice concerning measurement of transmittance of translucent specimens. One negative vote on the proposed revision was deemed persuasive. Billmeyer moved to remove

one item and replace another by a revision he proposed.

E308–90, Test Method for Computing the Colors of Objects by Using the CIE System. A few copies of a revised text prepared by Hugh Fairman and edited by Fred Billmeyer were brought to the meeting. There was much discussion about whether the text should be held for ballot until a planned field trial is carried out on the new tables. The final decision was to submit the text to ballot without waiting for completion of the field trial. Billmeyer briefly reviewed the proposed revisions including changing the wording of the title from "test method" to "practice". Extensive revisions of the text were made in sections on Scope, Terminology, Summary of Practice, portions of Procedure, Calculations, Precision and Bias, and References. Editorial changes were made in existing tables and in the figure. New text material will accompany the new tables. A flow chart has also been added. After discussion, it was agreed to send the text material to ballot as soon as possible.

The new tables, to be field tested before being included, are to be designated 6.1 to 6.36. They will supplement tables 5.1 to 5.36 now in E308–90. Fairman presented a plan for field testing of the new tables. A computer disk with programs and tables is to be provided by Fairman. Ten people volunteered to assist Fairman in checking the computer generated tables.

Old Business

Proposed Guide to Selection of Color–Difference Equations. No substantive progress has been made in drafting a guide. The search will continue for a task group chairman.

Precision and Bias Statements for Test Methods Requiring Them. Cal McCamy proposed that the need for such statements be addressed individually as each standard comes up for review. Where published data exist that appear to be clearly applicable, use will be made of them. New intercomparisons will be carried out only in the absence of published data.

Proposed Guide to Measurement of Transmittance of Translucent Specimens. Thomas Leonard, Chairman of the Subcommittee on Scattering, commented that in drafting E1392–90, Practice for Angle Resolved Optical Scatter Measurements on Specular or Diffuse Surfaces consideration had been given to including material on the measurement of translucent specimens, but it had decided that the task was too monumental. Other persons at the E12.02 meeting agreed that it is a difficult task, but they pointed out that this only emphasizes the need for the proposed guide.

Hue–Difference Computation. At the June 1992 meeting at Princeton, Harry Hammond had requested that anyone making hue–difference computations communicate with him, but no information has been received. However Hammond noted that an article on the subject had been published recently. See Edward Chronicle and Ian Nemmo–Smith, Application of Some Statistical Methods for Comparing Samples of Hue–Angle Data, Color Res. Appl., v 17, n 6, 375–378 (1992).

Proposed Test Method for Total Luminous Reflectance by Use of 30/t Integrating Sphere Geometry. The subcommittee ballot closed on September 17, 1992. It consisted of 44 votes, 65 percent of the 67 voting members. The tally was: Affirmative 26, Negative 1, Abstaining 17. After a detailed explanation was sent to the negative voter, the negative was withdrawn. The proposed standard thus passed subcommittee ballot. Danny Rich moved that it now be submitted to E12 ballot. Billmeyer, who had put the original Popson draft in ASTM format, agreed to revise the text to incorporate constructive comments received with affirmative votes and to send the revision to ballot. There was discussion of the reasons for the negative, relating to a need for material standards for measurement of reflectance factor for this and other unusual geometries, where none now exist.

New Business

Hugh Fairman indicated that he is interested in the development of a "Standard Practice for the Electronic Interchange of Spectral Measurement Data." He desires to learn whether there are other committee members who would like to work on such a development. After fifteen minutes of discussion, Carroll Conklin moved that a task group be established. Persons desiring to participate included Connelly, Norbert Johnson, McCamy (or someone else from Macbeth), O'Donnell, Rich, Rood, Roznak, Steve Shafer, Springsteen, and Wahl. Fairman volunteered to serve as Task Group Chairman.

Harry K. Hammond III

NEW PRESIDENT FOR AATCC

Nick J. Christie, Vice-president and technical director for Apollo Chemical Corp. in Burlington, NC, has been elected president of the American Association of Textile Chemists and Colorists (AATCC) for 1993.

A native of Mendham, NJ, Christie has been active in the textile dyeing and finishing industry since 1958. Before joining Apollo Chemical in 1989 as head of research and development, manufacturing and technical service, he was technical manager for the textile chemical division of Diamond Shamrock Corp. and its successor companies, Occidental Chemical Corp. and Henkel corp. Before that he was a group leader in textile chemistry and dyeing research at Dow Badische, manager of the dyeing research and product application laboratories of Inmont corp., and a group leader in the central research laboratories of J.P. Stevens and Co.

Christie holds a BS in textile chemistry from the Philadelphia college of Textiles and Science, a master's in organic chemistry from Seton Hall University and a master's in business administration from Fairleigh Dickinson University. He holds some 17 U.S. patents on textile processing chemicals and is the author of more than 20 papers published in the technical press.

DETROIT COLOUR COUNCIL

The 1992 meetings began in March with an interesting insight into "automotive supplier audits" presented by Kimball Shellnut, Chrysler Corporation. He described an audit program to establish automotive supplier excellence. This was followed in May by a creative slide presentation given by Marilyn White, PPG Industries. Her topic was "Color Styling."

The big meeting in September last year was a symposium on color durability needs for interior and exterior parts, titled "Automotive Color and Appearance Durability." The moderator was Jim King, DuPont Automotive Products, and the panelists were: Charles Cameron, Ciba-Geigy, Additive; John Fillion, Chrysler Corporation; Keith Hegedus, Guilford Mills; Mark Pollo, Ferro Corporation; Kurt Scott, Atlas Electric Devices; and Edward Tysl, PPG Industries. The program dealt with a number of important durability and degradation issues, including:

Customer Expectations
Stabilizers
OEM Test Requirements
Test Method Standardization
Accelerated Weathering vs. Environmental Testing
Interpretation of Test Results

Over 200 people, representing 75 companies, were in attendance.

Our 1992 program session finished on a light note with an entertaining, yet interesting presentation by Lou Graham, consultant. Lou's talk and slide presentation was on "Color Vision Testing-Latest Proposals." This has led to automotive companies discussing whether or not to adopt these proposals.

The officers for 1993 are: James Hall, General Motors, President; Patricia Oldenkamp, Eagle-Ottawa Leather Co. Vice President; Daniel McDonald, Penn color, Secretary; and Laura Schaefer-Galea, Morton International, Treasurer.

The 1993 program led off in February with a talk by John Shettier, General Motors, Design. His topic covered the California Design Studios. The May meeting will deal with "Camera Based Colorimetry." The September symposium will be a presentation by industry experts on new pigments submitted by color producers.

As well, the DCC supported "COLOR TECHNOLOGY", a 3-credit course at Eastern Michigan University, Intended primarily for those in or entering the coatings and plastics industries. The class was filled beyond capacity but the 3-member teams were efficient in equipment-sharing and completed all projects. Students spent half of each session in lecture and half between two laboratories for exercises which include: proper visual evaluation and terminology; exposure to various vision tests; automotive color design-specific vehicles; business/residence design to suit the client; tinting strength determination of pigment batches; correlation of ΔE^* and ΔE CMC to visual observations; construction of physical tolerance limits and minimizing a forced metameric situation with and without color measurement; and correlation of color difference data in metameric and nonmetameric pairs. Each team delegates duties and shares in the findings.

Adjunct professor is Bill Longley, design instructor is Pat Oldenkamp, color measurement coordinator is Bob Santine, and lab project coordinator is Ken Maes.

J.R. Keiser

THE HUMAN FACTORS AND ERGONOMICS SOCIETY

37th Annual Meeting Plans Are Under Way!

The Human Factors and Ergonomics Society (formerly the Human Factors Society) will hold its 37th Annual Meeting on October 11-15, 1993, in Seattle, Washington. Sessions and exhibits will take place in the Washington State Convention Center.

The week will begin with hands-on workshops (CEU credit is available) geared toward professionals at all levels. Lecture, panel, symposium, debate, and demonstration proposals are due February 26; poster proposals are due June 4. The meeting, whose theme is "Designing for Diversity," will feature more than 100 technical sessions on a broad range of ergonomics-related topics, including aerospace, aging, biomechanics and anthropometry, communications, computer systems, consumer products, forensics, medical devices for functionally impaired populations, organizational design and management, safety, system development, test and evaluation, and visual performance.

Professional tours will be offered of technical and research facilities in the Seattle area. The annual banquet and awards presentation will be held on October 13, at which distinguished recipients of nine HFES awards will be recognized.

Registration information and a preliminary program will be available in late summer. The meeting is open to all interested individuals. For information contact the Human Factors and Ergonomics Society, P.O Box 1369, Santa Monica, CA 90406-1369, U.S.A. Telephone (310) 394-1811 FAX (310) 394-2410.

The Human Factors and Ergonomics Society is a multidisciplinary professional organization of 5000 persons in the United States and throughout the world. Its members include psychologists, engineers, designers, and scientists, all of whom have a common interest in designing systems and equipment to be safe and effective for the people who operate and maintain them.

ILLUMINATING ENGINEERING SOCIETY OF NORTH AMERICA

IES

IESNA Publishes Design Guide For Warehouse Lighting

The IESNA is pleased to announce the publication of Design Guide For Warehouse Lighting. This is the first IESNA design guide dealing with lighting for warehouses and storage areas. It describes considerations for good lighting practice for interior warehouses and storage areas, emphasizing the desired end results and describing various current methods available to achieve them.

This publication comprehensively discusses how to deal with the rapid changes taking place in warehouse lighting. The traditional image held of "the warehouse" must be expanded to encompass new concepts, including, but not limited to, automation, highrise storage, bar-coding, cold storage, shrink wrap packaging programmed variable levels of illumination, and other manifestations of modern warehouse procedure. This 26-page guide covers lighting requirements for the receipt of items into the area, their storage placement, inventory accounting, and the selection of items for removal and shipping. It is essential for designers, engineers, facility managers, architects, as well as to any related professional who is involved in industrial type facilities.

The cost of this publication is $18.00; it is available to IESNA members at a cost of $12.00.

To order, or to receive a review copy, call (212) 705-7920 or FAX (212) 705-7641

IESNA was founded in 1906 to establish scientific lighting standards and to promote good lighting practices for the benefit of the society.

IESNA Announces 1993 Annual conference

The IESNA announces its Annual Conference scheduled August 8-12, 1993 in Houston, Texas at the Westin Galleria Hotel. This three and one-half day conference is the most comprehensive educational forum for the lighting industry. Educational seminars address timely topics on liability and legislation for lighting design; recycled light and its impact on the environment; the 1992 energy policy act and its impact on efficiency and design; and lighting for the aging eye. Technical paper sessions focus on design theory, measurement and controls, light sources, and psychology and vision. Also scheduled are workshops on lighting design for museum galleries and roadway lighting topics. Innovative products and services are showcased in a presentation format followed by tabletop exhibits of products from leading manufacturers.

Designers Wednesday - an entire day devoted to issues facing lighting designers including design for kitchens and baths; applications of light and color; total lighting system; lamps, ballasts, luminaires and controls; and restoration lighting. Also featured is the annual IIDA awards luncheon recognizing outstanding design projects for ingenuity and originality in lighting design. Contact:

Valerie Landers, Meetings Manager
IESNA
345 east 47th street
NY NY 10017
(212) 705-7269
Fax (212) 705-7641

OPTICAL SOCIETY OF AMERICA

Here are abbreviated abstracts of some articles on color that might be of interest to ISCC members.

"Asymmetric color matching: how color appearance depends on the illuminant" by David H. Brainard and Brian A. Wandell [JOSA A 9: 1433, 1992] We report the results of matching experiments designed to study the color appearance of objects rendered under different simulated illuminants on a CRT monitor. Subjects set asymmetric color matches between a standard object and a text object that were rendered under illuminants with different spectral power distributions. For any illuminant change, we found that the mapping between the cone coordinates of matching standard and test objects was well approximated by a diagonal linear transformation. In addition, we examined the dependence of the diagonal transformation on the illuminant change. For the range of illuminants tested, we found that the change in the diagonal elements of the linear transformation was a linear function of the illuminant change.with von Kries's hypothesis

"Linear Models of Surface and Illuminant Spectra" by David H. Marimont and Brian A. Wandell [JOSA A9:1905, 1992].We describe procedures for creating efficient spectral representations for color. The representations generalize conventional tristimulus representations, which are based on the peripheral encoding by the human eye. We use low-dimensional linear models to approximate the spectral properties of surfaces and illuminants with respect to a collection of sensing devices. We choose the linear-model basis functions by minimizing the error in approximating sensor responses for collections of surfaces and illuminants. These linear models offer some conceptual simplification for applications such as printer calibration. They also perform substantially better than principal-components approximations for computer-graphic applications.

SOCIETY FOR INFORMATION DISPLAY

SID A final reminder about the SID '93 International Symposium & Exhibition to be held at the Washington State Convention Center, May 16-21, 1993 in Seattle, Washington.

This busy week will include Product Engineering/Application Sessions, Poster Session, Symposia, Evening Panels, Topical Sessions, and Technical Seminars/ Tutorials.

The meetings will feature two keynote speakers: Dr. Nicholas Negroponte speaking about "The Future of Television" and Mr. Kenneth D. Tiven attempting to answer the question "Global TV News: What Will it Look Like in the New Video Age?" Also the awards luncheon featured speaker will be Mr. Peter Morton, who will present "Media Mayhem (How to extract a happy, stable, and productive training solution from the electronic media explosion".

For more information contact one of the following:

Louis D. Silverstein,
SID '93 Conference Chair
VCD Sciences, Inc.
9695 East Yucca Street
Scottsdale, AZ 85260
(602) 391-1326 (FAX: same)

Jay Morreale,
Conference Coordinator
Palisades Institute for Research Services
201 Varick St., Suit 1140
New York, NY 10014
(212) 620-3371 (FAX: -3379)

Richard H. Bruce,
SID '93 Program Chair
Xerox PARC
3333 Coyote Hill Rd.
Palo Alto, CA 94304
(415) 812-4447 (FAX: -4471)

HELP!

ISCC needs to print new ISCC Brochures (you know, those colorful ones everyone has received at one time or another, with the Large Rainbow Spectrum on the back).

The printing plates can't be located. Anyone knowing their whereabouts, please contact Ann Laidlaw IMMEDIATELY at (919) 274 1963.

Your assistance is greatly appreciated!

FEDERATION OF SOCIETIES FOR COATINGS TECHNOLOGY

FSCT The theme for the 1993 Annual Meeting of the FSCT will be "Today's Competitive Coatings: Lean, Mean, and Green."

The Annual Meeting will be chaired by Clifford Schoff, of PPG Industries, Allison Park, PA. The Annual Meeting will be held in conjunction with the Federation's Paint Industries' Show at the Georgia World Congress Center in Atlanta, Georgia on October 27-29, 1993.

Success in the coatings industry, now, and in the future, belongs to those who take the lead by blending long term profitability, coatings performance and environmental protection. The 1993 theme recognizes these goals in the terms: LEAN: cost effective ... process efficient ... waste free; MEAN: consistent ...tough...durable ... resistant; GREEN: environmentally friendly ... renewable ... recyclable ... safe.

Sessions tentatively scheduled for the 1993 event will cover topics including: corrosion, manufacturing, advanced technologies in coatings research, radiation curing, latex technology, polymer science, environmental impact/ constraints, and physical property characterization. For more information about the meeting, contact

Clifford Schoff
PPG Industries, Inc.
P. O. Box 9
Allison Park, PA 15101

SOCIETY OF IMAGING SCIENCE AND TECHNOLOGY

IS&T

IS&T Announces the Third Technical Symposium on: PREPRESS, PROOFING, & PRINTING, October 31-November 3, 1993 Immediately following GRAPH EXPO '93

ABOUT THE SYMPOSIUM

Objective:

This is the third in a series of symposia which have the purpose of addressing technical issues in imaging in the printing and publishing industry. The Symposium will take place in the Chicago Hyatt Regency Hotel immediately following Graph Expo for the convenience of those who wish to attend both events.

As technology advances, rapidly changing systems continue to blend with new and existing materials and processes to provide the needed improvements in cost, productivity and quality for the specifiers and users of print media. Meanwhile, a process revolution is occurring, accelerated by the growth and diffusion of desktop electronic prepress and by the ability of suppliers to provide printing on demand and publishing in alternative media. This symposium will address the technical issues that are both causes and effects of these changes.

Tutorial Seminars:

The Symposium will begin with a series of tutorial seminars on leading edge technical subjects in graphics imaging. These tutorials will provide a brief concentrated study of key aspects of technologies, some of which are in use today and some of which will find increasing application in the near future. The Tutorials Chair welcomes your suggestions for presenters and topics.

Plenary Session:

Keynote speakers will address the dramatic changes occurring today in prepress, proofing and print and will foreshadow the technological future as a framework for the sessions that will follow. A panel discussion including the keynote speakers and other experts will follow.

Technical Sessions:

The technical presentations will then bring together scientists, engineers, technologists and technical managers in the fields of printing, publishing and graphics imaging. Scientific and technical papers relating to current and future issues of color image capture, measurement, manipulation, communication and reproduction in the prepress, proofing and press environments will be presented.

Social Program:

A welcoming reception and a luncheon with a featured speaker will be provided for symposium participants. A technical poster session will be combined with product demonstrations at an evening reception intended to satisfy the participants needs to network with colleagues.

The Technical Program

Concurrent Tracks:
PrePress
Proofing
Printing

Proposed Session Topics

Color Scanners
Electronic Photography
Hybrid Imaging Systems
Image Processing
Prepress Interfaces
Desktop vs Midrange vs High End
Page and Document Description
Taking Prepress "In House"
Image Databases and Networks

Digital Color Proofing
Future Role for Analog Proofing
Proof to Press Match
Device Independent Color
Color Measurement and Management
Colorimetry vs Densitometry
Halftone Dots vs Continuous Tones
Color Fax and Remote Proofing

Data Communication and Storage
Imagesetters and RIPS
Screening and Descreening
Computer-to-Plate
Digital Color Printing
Advances in Traditional Processes
Process Control
Alternative Media

Invitation To Authors

We solicit presentations that deal with technical issues in modern prepress, proofing and printing processes. The Program Chair will be pleased to consider original work in areas related to those listed in the Proposed Session Topics. Please submit an abstract of approximately 200 words and a brief biography by April 1, 1993 to:

Michael Rodriguez
R. R. Donnelley and Sons Company
750 Warrenville Road
Lisle, IL 60532
(708) 810-5256
FAX (708) 719-6658

FOR MORE INFORMATION CONTACT IS&T AT: (703) 642-9094.

O T H E R N E W S

COLOR SCIENCE ASSOCIATION OF JAPAN

It is with pleasure that the Color Science Association of Japan (CSAJ) announces their new officers:

President Dr. Leo Mori

(Toshiba Lighting & Technology Corporation)

Vice-President Prof. Asao Komachiya

(National Tokyo University of Fine Arts and Music)

Vice-President Prof. Takuo Goto

(Nagoya University, Faculty of Letters)

Vice-President Prof. Reoko Imazu

(International Buddhist University)

Also, please note that the address of CSAJ was changed as follows:
12-14, Hamamtsucho 2 chome
Minato-ku
Tokyo 105
Japan
Telephone and Fax 03 3432 0868

Ellen Carter

NEWS FROM THE CIE

CIE Symposium '93, Colorimetry

At an ad hoc meeting at the Robertson Hall, Princeton University, New Jersey on 23rd June 1992 attendees requested the CIE Central Bureau to organize a symposium based on invitation dealing with debated questions of photometry and colorimetry, as e.g. brightness-luminance discrepancies found in some metameric matches of lights and non-additivity problems found in some metameric matches of lights and non-additivity problems encountered in colorimetry. These problems seem to be created by the introduction of highly metameric light sources and by variation in the methods used for calculating tristimulus values. It is intended to invite some 20 of the world's leading experts to the meeting to be held at the Central Bureau on 8th-10th June 1993. The proceedings of the symposium will be published by November 1993.

Items on the tentative agenda are:
1) Review of experiments leading to 1931 and 1964 standard observers,
2) Assumptions in XYZ and x,y, Y specifications and their limitations,
3) Properties of the 1931 and 1964 observers, 4) Need for revising the current standards.

CIE is inviting members of the community of color users to support this venture by subscribing to one of the following two sponsorships: "Sustaining Sponsor of the CIE Symposium on advances of fundamental photometry and colorimetry" or "Sponsor of the CIE Symposium on advances of fundamental photometry and colorimetry" Further details on the sponsorships are available from Dr. J. Schanda, Executive Director, CIE Central Bureau, Vienna (FAX +43 1 713 0838).

from CIE News, December 1992.

News About Members
CIE Announces Changes

Several ISCC members have taken on new responsibilities for CIE activities. Dr. Fred W. Billmeyer became Liaison Officer to ISO/TC61/5. Calvin S. McCamy became chairman of TC 1-38: Compatibility of tabular spectral data for computational purposes, Dr. Justin J. Rennilson became chairman of TC 2-36: Revision of CIE Publication 54 (Retroreflection), Dr. Joann M. Taylor became reporter for Division 2 on Visual gloss, Dr. J. C. Zwinkels became chairperson of the New TC 2-25: Calibration Methods and Photoluminescent Standard for Total Radiance Factor Measurement and reporter for Division 1 on Practical Daylight Sources. We are pleased to acknowledge their service.

WHO HAS AN OSTWALD COLOR WHEEL?

Dr. Roy Perkinson, Conserator of Prints and Drawings at the Museum of Fine Arts Boston, 465 Huntington Avenue, Boston, MA 02115, is looking for (suffering from waves of nostalgia) a copy of an old Ostwald color wheel he remembers his father had. The wheel had slots cut out from the overlay card that could be rotated to show different hue combinations (complements, triads, etc.) for a sampling of colors from the Ostwald triangle. He would appreciate help in locating one of these wheels. If anyone can help, please contact Dr. Perkinson at the address above or Walter C. Granville, 312 Elm Court, Libertyville, IL 60048-2114.

Walter Granville

NEW CIE PUBLICATIONS

CIE Publication No. 91. Proceedings 22nd Session Melbourne 1991, 3 volumes, 721 pages, contains the quadrennial progress reports of the seven Divisions, the texts of the Invited and Contributed Papers and the Posters presented at the Conference.

Volume 1, Part 1, contains information of the activities of
Division 1 – Vision and Colour
Division 2 – Physical Measurement of Light and Radiation
Division 3 – Interior Environment and Lighting Design
Related contributed papers with summaries in English, French and German.
Volume 1, Part 2, contains information on the activities of
Division 4 – Lighting and Signaling for Transport
Division 5 – Exterior and Other Lighting Applications
Division 6 – Photobiology and Photochemistry
Division 7 – General Aspects of Lighting (including Vocabulary)
Contents of workshops and respective contributed papers with summaries in the three languages as in Part 1.

Volume 2 contains the Welcoming Addresses, Reports of CIE Officers, Keynote Papers, Reports from Workshops, Conference Cosing Address, Opening Address for each Division meeting, Reports from Divisions, a few late or corrected papers, and, most important, an alphabetical list of names and addresses of delegates.

CIE Publications are stocked in USA and shipped prepaid from CIE Publication Sales by Mr. Thomas M. Lemmons, TLA–Lighting Consultants, Inc., 72 Loring Avenue, Salem, MA 01970.Payment must accompany order. More information when needed can be obtained by phone (301) 975–2342 or fax (301) 840–8551.

Tabulated below are list prices and USNC member prices in dollars for the Melbourne Proceedings and other recent CIE publications.

Pub. No.	*Title*	*List Price ($)*	*Member Price ($)*
91	Melbourne Proceedings	246	164
92	Guide to Lighting Urban Areas, 1992	70	47
93	Accident Countermeasures, 1992	114	76
94	Guide on flood Lighting & Decorative Lighting*		
95	Technical Report – Contrast and Visibility, 1992	81	54
96	Electric Light Sources, State of the Art, 1992	83	42
97	Maintenance of Indoor Electric Lighting Systems, 1992	63	42
98	Personal dosimetry of UV Radiation, 1992	83	42
99	Lighting Education, 1983–89	54	36
100	Fundamentals of Night Driving, 1992	86	63
ISO 10526	Colorimetric Illuminants, 1986 (replaces S002)	36	24
ISO 10527	Colorimetric Observers, 1986 (replaces S001)	52	35
D002	Disk Version of Publications 13.2 and 15.2	54	36

*Not yet available

Harry K. Hammond III

Research Solutions From the RIT Research Corporation

MILT PEARSON: STILL ONE STEP AHEAD

The RIT Research Corporation is a subsidiary of Rochester Institute of Technology that conducts applied research on a contract basis for industry and government. A good portion of those research activities are rooted in the graphic arts. While the T&E Center's Research and Testing operation focuses on physical testing and research, the RIT Research Corporation provides applied scientific research in a variety of imaging areas. This is one in a series of articles describing the activities and staff of the RIT Research Corporation.

In the movies, it's the Academy Award. In journalism, it's the Pulitzer Prize. And for research in the graphic arts, it's the TAGA Honors Award.

Milton Pearson, principal imaging scientist at the RIT Research Corporation, was presented this honor at the 1992 conference of the Technical Association of the Graphic Arts.

Since he started keeping records 21 years ago, Milt has jogged more than 8,000 miles. Not surprisingly, one of the recurring themes in Milt's career is that he always seems to be ahead of everybody else. He has recognized the significance of many important topics years before today's prophets and sages "discovered" them. Colorimetry, gamuts, screenless lithography and on-press measurement are just a few of the subjects Milt helped pioneer.

Milt joined the T&E Center's predecessor, the Graphic Arts Research Department (GARD) in 1965. One of his early assignments was to investigate the match between the spectral sensitivity of printing plates and the sources used to expose them.

"In addition to the carbon arc, new exposure sources were being introduced

at that time," he said. "There was concern that the glass in the vacuum frame absorbed too much ultraviolet light and should be made thinner. As it turned out, the polyester base in the films absorbed much more U.V." This information was presented to the industry in *GARD Progress*, an RIT publication.

In another early project, Milt collaborated with Irving Pobboravsky, another GARD member now at the Research Corporation. Together, they performed a study of screenless lithography, identifying the mechanism by which screenless lithography works. Their 1967 TAGA paper has proven so enduring that newer studies on the subject still cite it.

Milt served in the U.S. Navy. Upon his discharge from the Naval Photographic Center, he enrolled in the Photographic Science program at RIT. His senior thesis addressed the gamut, or range of printable colors, of sets of printing inks. He was one of the first to apply the principles of colorimetry to this problem. It is still an important topic; national and international standardizing committees are beginning to address what Milt studied as an undergraduate nearly 30 years ago.

After graduating from RIT, Milt worked briefly at Corning Glass, where photosensitive glass was being used to produce a host of products, including matrices for flexographic plates. The flexographic matrices produced by this process were dimensionally stable and had nice square shoulders with little undercutting.

In less than a year, Milt was offered a position at RIT's Graphic Arts Research Department and returned to campus. There he worked with some of the luminaries of the time, including John Yule, who suggested some improvements to Milt's earlier gamut investigation.

During this period, Milt become involved with CIE, the International Commission on Illumination. During the late 1970s and early 1980s, he served as secretary of the CIE Committee on Radiometry and Photometry of Materials. This committee determines to a large extent how color should be measured. He also served on ANSI's subcommittee on optical density; for several years he was one of the few members of this committee representing the printing industry.

Milt also has been active in the Inter-Society Color Council (ISCC), an organization dedicated to advancing the art, science and technology of color. Milt edited the proceedings volume for the group's 1971 conference on optimum reproduction of color. More recently, when Milt suggested a conference on the comparison of color images presented in different media, both ISCC and TAGA agreed to co-sponsor it. This conference, which addressed a problem routinely faced in the printing industry, was held last February with resounding success.

During the 1970s the RIT group, by that time known as the Graphic Arts Research Center (GARC) and now known as the T&E Center, became interested in the possibility of measuring printing parameters on a moving web press. A team was formed consisting of Milt, Irving Pobboravsky and Chester Daniels, who is still at the T&E Center. They outfitted the web press with a special densitometer and designed equipment to drive the densitometer and collect measurements. A description of this set-up is given in their 1979 TAGA paper. Using a specially designed test target occupying less than a square inch, they measured dot gain, slur and solid ink density. These figures were automatically plotted on a control chart, showing their variation throughout the run.

The on-press instrumentation presented an opportunity to use the web press as a laboratory to probe the causes of dot gain. They found that solid ink density is the largest contributor to dot gain and, surprisingly, that press speed has little effect.

In 1980, the RIT Research Corporation was formed; important changes occurred in the space of a year or so. GARC became the T&E Center, and Milt was invited to join a newly formed department of the Research Corporation, then called the Graphic Arts Division. This meant having to assume new responsibilities, as Milt constituted half the division's personnel. In addition to managing contracts and performing much of the research, he had to prepare proposals and sell projects.

With the introduction of electronic prepress systems, digital imaging and the growing interest in color reproduction, the Research Corporation's imaging business has grown. Some of the recent and current projects of the Imaging Division, as it is now called, involve things that Milt helped develop many years ago. Naturally, he oversees many of these projects personally.

Working with Milt is a rewarding and pleasurable experience. I have learned a lot from him, and especially enjoy it when we pioneer even newer areas together. I join my colleagues at the RIT Research Corporation in congratulating Milt for this well-deserved honor.

Stephen Viggiano

Stephen Viggiano is a senior imaging scientist at the RIT Research Corporation.

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PROBLEM COMMITTEE #49 - IMPROVED COLORIMETRY

Bill Thornton has available on disk all the data that was developed for his three-part article on Improved Colorimetry. Any researcher who would like to analyze the data further or use the data for more research should contact Dr. Thornton, Prime Color, Inc., 27 Harvard Road, Cranford, NJ 07016-1550 or phone (908) 272-5759.

CALL FOR PAPERS BY IS&T AND SID

COLOR IMAGING CONFERENCE: TRANSFORMS & TRANSPORTABILITY OF COLOR

November 7 - 11, 1993 • The Pointe Hilton Hotel at Squaw Peak - Phoenix, Arizona

Society for Imaging Science & Technology
7003 Kilworth Lane
Springfield,VA 22151
Tel: (703) 642-9090
FAX: (703) 642-9094

Sponsored by the Society for Information Display
8055 W. Manchester Avenue
Suite 615, Playa del Rey, CA 90293
Tel: (310)305-1502
FAX: (310)305-1433

The Cooperating Societies are: **ISCC**—Inter-Society Color Council, **SPSTJ**—Society of Photographic Science & Technology of Japan, **SEPJ**—Society of Electrophotography of Japan

The Tentative Program is as follows:

Sunday November 7

The conference will feature a series of tutorials on the fundamentals of color science, measurements and devices.

Tutorials will be available on:

- Color Science (Theories and Color Spaces)
- Color Measurement (Theories and Color Spaces)
- Color Display (CRT, LCD, Emissive Devices)
- Color Hardcopy (Photographic, Thermal, Electrophotographic and Inkjet)

Monday November 8
Understanding of Color Theory & Spaces

The invited speakers will describe how the fundamental assumptions of color theory are used and misused when applied to practical problems. Particular attention will be given to current research in color theory. Among the Invited Speakers are Robert Hunt, John McCann, and Steve Shevell. The afternoon session will be made up of contributed papers, electronic poster sessions and discussions.

Tuesday November 9
Color at the Desktop

The invited papers will describe systems that use color theory to calibrate color devices. These morning talks will establish a common framework and vocabulary so that contributed papers in the afternoon can concentrate on the new and unique aspects of the authors' work. Invited speakers include John Meyer, Paul Roetling, Louis Silverstein, Gerald Murch and Gary Starkweather. The afternoon session will be made up of contributed papers, electronic poster sessions and discussions. We hope to have a panel discussion between representatives of commercial color management systems.

Wednesday & Thursday
November 10 & 11
Applications of Color Systems

Wednesday morning's invited papers will focus on system applications. How are calibrated color devices used in science, engineering, medicine, business and the arts? These talks will establish a common framework and vocabulary so that contributed papers in the afternoon can concentrate on specific customer requirements. Some Invited Speakers are Jan Allebach, Joyce Farrell, Shin Ohno, Warren Rhodes, and Maureen Stone. The contributed papers and electronic posters will describe commercial applications for calibrated color systems. A panel discussion is planned on the future color spin-off applications of HDTV systems.

INTRODUCTION
Color Imaging Conference: Transforms & Transportability of Color

Imaging has undergone tremendous change in the past few years. Technological breakthroughs have pushed hardware to resolution limits only dreamed of a few years ago and competitive pricing has allowed the average user to have equipment that only the specialist had access to before. True, while it has been said for many years that "color is coming", finally, today the creation, editing, communication, production and reproduction of color images is becoming economically feasible for millions of customers. During the past five years fast growth has brought a large number of new technical problems. Now we must begin to deal with the problems that using continuous-tone color brings. We are attempting to exchange color data, often without knowledge about the nature of the original color image, across different input and output devices and across different computer platforms, systems and networks. We output the data on many different types of devices at different resolutions from monitors and scanners that image in red, green and blue to printers that image in cyan, magenta, yellow and black. Since we have no universal definition of the digits we transmit from device to device, it is no wonder that confusion exists. This confusion limits the usefulness of all the elements of digital color imaging systems.

This conference and workshop will provide an international, multidisiplinary forum for dialogue on the transformation and transport of color in digital documents. The emphasis will be on what we need to know and what we need to do to universally transport color. In an informal setting with ample discussion time reserved between sessions, participants will try to bridge the distances between input and output, between hardware and software and the end users. The program will feature world renowned, technically expert invited speakers from academia and industry along with contributed papers, tutorials, an electronic poster session, and panel discussions. ➡

AN INVITATION TO AUTHORS & PARTICIPANTS

We solicit presentations on technical issues of color imaging systems: transforms and transportability of color. The Program Committee will be pleased to consider original work on the topics suggested in the Tentative Program.

Please submit an abstract of approximately 200 words and a short biography by April 1, 1993 to:

Ms. Pamela Forness, IS&T Conference Manager, 7003 Kilworth Lane, Springfield, VA 22151
(703) 642-9090; FAX: (703) 642-9094

Upon acceptance of your abstract, you will be sent an author's kit for preparation of an eight page paper along with forms for a demographic sketch, publication release and audio visual information for your presentation at the conference. Speakers will be allowed twenty to thirty minutes for presentations.

Authors are responsible for obtaining appropriate clearances as necessary. Prepared papers will be due by August 1, 1993 for publication in a proceedings book that will be distributed to each attendee upon registering for the meeting.

1994 ISCC WILLIAMSBURG CONFERENCE ON COLORIMETRY OF FLUORESCENT MATERIALS

The Inter-Society Color Council is sponsoring a Conference on the Colorimetry of Fluorescent Materials to be held in Williamsburg, Virginia on February 21-23, 1994.

The conference will consist of a series of invited and contributed papers on the subject. The object of the Conference is to point out the problems and current methods associated with the measurement and evaluation of materials containing fluorescent additives; discuss the contribution of fluorescent whitening agents and colorants to applications in papers, textiles, paints, plastics, and printing inks; and, to stimulate research in this field.

The conference will cover the following topics:

What is fluorescence • How are the fluorescent pigments and dyes manufactured • How to measure fluorescence-problems and pitfalls • Applications of fluorescent materials • State and Federal laws on Safety Colors • Standards and Specifications • Fluorescent Whitening Agents (FWA's) • Progress in the development of daylight simulators • Security Applications • Fluorescent Colorant Formulation

The papers will be presented by experts in the field from here and abroad. After each paper, time for discussion will be reserved and a panel of experts in a particular field will be available to help answer questions which may arise.

If you are interested in presenting a paper on any of the above aspects of fluorescence, please submit a title and an abstract of not more than 200 words to the address below. The co-Chairmen for the Conference will be Dr. Fred W. Billmeyer, Jr. and Richard W. Harold. Arrangements Chairman will be Dr. Romesh Kumar. A more detailed brochure will be available in late April, 1993.

Submit a title and abstract NO LATER THAN September 1, 1993 to:

Richard W. Harold
ISCC Williamsburg Fluorescence Conference
C/O Hunter Associates Laboratory, Inc
11491 Sunset Hills Road
Reston, VA 22090
USA

Telephone (703) 471-6870 FAX (703) 471-4237

IN THIS ISSUE

CR&A In June of 1992 the AIC held an interim symposium on its 25th Anniversary. The theme of the symposium was computer color formulation.

This issue starts with an article relating to that theme. Although it was apparent at the meeting that Kubelka-Munk theory is used widely in formulation problems, there are many approaches. Which strategy should be employed? Matching to the same tristimulus values X, Y, and Z; or performing a least-squares curve-fit to the spectral curve? In "Comparison of Colorimetric and Spectrophotometric Algorithms for Computer Match Prediction," Boris Sluban not only compares these two strategies, but also suggests a new matching strategy minimizing the color difference in three illuminants as a way to combine the good properties of the first two strategies.

In the last issue we compared national standardizing laboratories' ability to agree on transmittance measurements. In this issue we look at how international cooperation can lead to improved measurements of food colors. In "The Use of Calibrants in Food Colour Measurement: An International Cooperative Study" by Kent, Calvert, MacDougall, Malkin, and Witt, the 'hitching post' procedure is used to improve instrumental calibrations and gain significant improvement in agreement between laboratories.

This issue contains the first of two articles from the field of color vision and written by Marcia A. Finkelstein. (The second article will follow in Issue #3.) Earlier, Dr. Finkelstein and her co-workers proposed a detection model for long wavelength lights. In this model there are two pathways and two nonlinear sites. The sites are first the long-wavelength (L-) sensitive cones and the medium-wavelength (M-) sensitive cones; the second a red/green opponent stage that receives inputs from both the L- and M- pathways. The model suggests that two mechanisms partially reduce the effects of response compression. Without adaptive mechanisms to counteract the response compression, lights of only moderate intensity would saturate the visual system. In "Spatial Sensitization and Adaptation in a Long-wavelength Cone Pathway" Marcia Finkelstein quantifies the fit of the model to data and tests one of the model's assumptions: that the M-cone input to the opponent site is weaker than that of the L- cones.

In 1986 a consortium was formed to investigate color image quality in the color reproduction industry. In order to assess the changes in color appearance between monitor and reflection media under a wide range of viewing conditions such as light sources, luminance levels, backgrounds, and borders, a series of research experiments was undertaken and subsequently reported on in the journal [Vol. 16, 166-197]. In 1990 a new project was started to test the application of color spaces and appearance models to additional media and viewing conditions. In "Quantifying Colour Appearance Part III. Supplementary LUTCHI Colour Appearance Data," M. Ronnier Luo and his co-researchers, X. W. Gao, P. A. Rhodes, H. J. Xin, A. A. Clarke, & S. A. R. Scrivener report on two new experiments designed to check conflicting results found earlier and to extend the range of luminance conditions previously used.

Neville S. Smith has extended his earlier work with the inter-comparisons of color order systems. In "Colorcurve and Coloroid Notations for the OSA-UCS Atlas Samples" Dr. Smith provides tables of values and graphs of the relative positions of OSA-USC atlas samples in both systems. The mappings in these figures and those in earlier articles can be used to provide insight into the structure of the diverse systems.

In recent issues of this journal Dr. Yoshinobu Nayatani and his co-workers have examined the Helmholtz-Kohlrausch effect, i.e., the fact that two objects whose colors have the same Munsell Values, but one being achromatic and the other chromatic, will exhibit different perceived lightnesses. The perceived lightness of chromatic object colors has been studied over a wide range of illuminance from scotopic to photopic levels. In Ikeda's research of equivalent lightness of chromatic colors in the mesopic range, experimental data indicated that the equivalent lightness of each chromatic object color changes significantly when the adapting illuminance is changed, even in the photopic range. Therefore, Y. Nayatani, Sobagaki, & K. Hashimoto undertook a study to estimate equivalent lightnesses to be compared to the observed equivalent lightness of chromatic object colors over the illuminance range from .01 lx to 3000 lx, which have been reported by Yujiri. The results of that study are reported in "Illuminance Dependency of Equivalent Lightness on Chromatic Object Colors."

In this issue's Color Forum Mark D. Fairchild defends the current status of the CIE standard observer and William A. Thornton defends his recent work "Toward a More Accurate and Extensible Colorimetry". In "The CIE Standard Observer: Mandatory Retirement at Age 65?" Dr. Fairchild reviews the status of the CIE standard observer and suggests that its retirement would be premature. In rebuttal Dr. Thornton suggests updating the current system of colorimetry to alleviate problems encountered when working in the fields of lighting, color graphics, and hardcopy color reproduction.

This month's Communications and Comments Column includes one item, a progress report on CIE Technical Committee 1-29 Industrial Color-Difference Evaluation. In this report Chairman David H. Alman presents excerpts from a draft recommendation. The excerpts include basic equations, selected weighting functions, and parametric factors. Dr. Alman closes by inviting readers to comment and encouraging users to perform field trials of the tentative recommendation in comparison to the models currently being used.

Dr. Ellen Carter, Editor

C A L E N D A R

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

Harry K. Hammond, III
BYK-Gardner, Inc.
2435 Linden Lane
Silver Spring, MD 20910
301-495-7150 FAX 301-585-4067

1993

COLOUR GROUP, Jan. 6
Colour Deficiencies and Anomalies, City University. Information: Hon. Secretary 081 943-6539

ASTM COMMITTEE D-1 ON PAINT, Jan. 17-20
Crown Sterling Suites, Ft. Lauderdale South, Florida. Information: Scott Orthey, (215) 299-5507.

ASTM COMMITTEE E-12 ON APPEARANCE, Jan. 17-20
Crown Sterling Suites, Ft. Lauderdale South, Florida. Information: Bode Buckley, (215) 299-5599.

IS&T/SPIE SYMPOSIUM, Jan. 31- Feb. 5
The Society for Imaging Science and Technology Symposium on Electronic Imaging: Science and Technology, San Jose Convention Center, San Jose, California. Information: (703) 642-9094.

COLOUR GROUP, Feb. 3
Newton Lecture and Dinner, Royal Society. Information: Hon. Secretary 081 943-6539

OSA TOPICAL MEETING OPHTHALMIC AND VISUAL OPTICS, Feb. 19-20
The Optical Society of America - Third Topical Meeting on Ophthalmic and Visual Optics, Doubletree Hotel, Monterey, California. Information: OSA (202) 223-0920.

OSA TOPICAL MEETING NONINVASIVE ASSESSMENT OF THE VISUAL SYSTEM, Feb. 21-23
The Optical Society of America - Topical Meeting on Noninvasive Assessment of the Visual System, Doubletree Hotel, Monterey, California. Information: OSA (202) 223-0920.

ASTM COMMITTEE D-20 ON PLASTICS, Mar. 1-4
Atlanta, Georgia. Information: Katharine Schaff, (215) 299-5529.

COLOUR GROUP, Mar. 3
Colour in Architecture, National Gallery. Information: Hon. Secretary 081 943-6539

COLOUR GROUP, Mar. 31
Colour in Archeology, Institute of Archeology. Information: Hon. Secretary 081 943-6539

CMG - CONFERENCE, Apr. 4-6
Color Marketing Group International Color Directions Conference, Hyatt Crystal City, Washington, District of Columbia. Information: Katie Register (703) 528-7666.

LUX EUROPA 1993, Apr. 4-7
Chartered Institution of Building Services Engineers, Edinburgh, Scotland. Information: CIBSE, Delta House, 222 Balham High Rd., London SW12 9BS.

ISCC ANNUAL MEETING, Apr. 18-20
Color, Environment and Regulations, Newport Islander Doubletree Hotel, Newport, Rhode Island. Information: Romesh Kumar (401) 823-2161.

TAGA ANNUAL CONFERENCE, Apr 25-28
Technical Association of the Graphic Arts Annual Technical Conference, Minneapolis - St. Paul, Minnesota. Information: Karen Lawrence, (716) 475-7470.

IS&T ANNUAL CONFERENCE, May 9-14
The Society for Imaging Science and Technology 46th Annual Conference, Boston Marriott Cambridge Hotel, Cambridge, Massachusetts. Information: IS&T (703) 642-9090.

CORM '93 ANNUAL MEETING, May 18-21
National Institute for Standards and Technology, Gaithersburg, Maryland. Information: Dr. Jack Hsia (301) 975-2342.

ASPRS WORKSHOP ON COLOR PHOTOGRAPHY AND VIDEOGRAPHY IN RESOURCE MONITORING, May 24-27
American Society for Photogrammetry and Remote Sensing - 14th Biennial Workshop on Color Photography and Videography in Resource Monitoring, Utah State University, Logan, Utah. Information: Christopher Neale (801) 750-3689.

CIE SYMPOSIUM '93, Jun. 8-10
CIE Symposium '93, Colorimetry, Central Bureau of the CIE, Vienna, Austria. Information: Dr. J. Schanda (fax +43 1 713 0838).

AIC-7TH CONGRESS, Jun. 14-18
International Colour Association - 7th Congress, Technical University of Budapest, Budapest, Hungary. Information: Prof. Antal Nemcsics, Technical University of Budapest, Conference Office, Building Z, Room 101/b, H-1521 Budapest, Muegyetem rkp.3-9, Hungary, Phone and FAX (36-1) 185-2218.

LIGHT AND COLOR IN THE OPEN AIR, Jun. 16-18
Optical Society of America Second Topical Meeting on Light and Color in the Open Air, The Pennsylvania State University State College, Pennsylvana. Information: OSA Office (202) 223-0920.

IS&T INTERNATIONAL SYMPOSIUM, Jun 21-25
International Symposium on Electronic Imaging Device Engineering, Munich Fairgrounds South, Munich, Germany. Information: IS&T (703) 642-9090.

ASTM COMMITTEE E-12 ON APPEARANCE, Jun. 23-25
Atlanta, Georgia. Information: , Bode Buckley, (215) 299-5599.

ASTM COMMITTEE D-1 ON PAINT, Jun. 27-30
Wyndham Franklin Hotel, Philadelphia, Pennsylvania. Information: Scott Orthey, (215) 299-5507.

MONTAGE 93, Jul.11-Aug.7
Montage 93: International Festival of the Image, Rochester, New York. Information: Montage 93 (716) 442-8898.

IESNA ANNUAL CONFERENCE, Aug. 8-12
Illuminating Engineering Society of North America, 87th Annual Conference, Houston, Texas. Information: Valerie Landers, (212) 705-7269.

CMG - CONFERENCE, Sep. 12-14
Color Marketing Group International Color Directions Conference, Hotel del Coronado, San Diego, California. Information: Katie Register (703) 528-7666.

DCC MEETING, Sep. 23
Detroit Colour Council New Pigments for Automotive Applications, Michigan State Management Education Center, Troy, Michigan. Information: James Hall (313) 947-5428

AATCC - CONFERENCE AND EXHIBITION, Oct. 3-6
American Asssociation of Textile Chemists and Colorists, Montreal, Quebec, Canada. Information: AATCC, (919) 549-8141.

OSA - ANNUAL MEETING, Oct. 3-8
Optical Society of America Annual Meeting, Toronto, Canada. Information: OSA (202) 223-0920.

IS&T 9th INTERNATIONAL CONGRESS, Oct. 4-8
The Society for Imaging Science & Technology, 9th International Congress on Advances in Non-Impact Printing Technologies with Exhibit, Pacific Convention Plaza, Yokohama, Japan. Information: IS&T (703) 642-9090.

IS&T Technical Symposium on PREPRESS, PROOFING, & PRINTING Oct. 31-Nov. 3
Hyatt Regency Hotel, Chicago. Information: IS&T (703) 642-9090

FSCT - 71st ANNUAL MEETING, Oct. 27-29
Federation of Societies for Coatings Technology 71st Annual Meeting and 58th Paint Industries' Show, Georgia World Congress Center, Atlanta, Georgia. Information: FSCT Office, (215) 940-0777.

COLOR IMAGING SYSTEMS, Nov. 7-10
Color Imaging Systems co-sponsored by the Society for Imaging Science and Technology and Society for Information Display, The Pointe Hilton Resort at Squaw Peak, Phoenix, Arizona. Information: IS&T (703) 642-9090.

ASTM COMMITTEE D-20 ON PLASTICS, Nov. 15-18
Fort Worth, Texas. Information: Katharine Schaff, (215) 299-5529.

NEWSLETTER EDITOR Michael A. Hammel

Send photo material (black and white if possible) to:
Editor, ISCC News • 98 Grand View Drive • Fairport, NY 14450 • Tel. (716) 223-1823
If at all possible, please send all other materials ON DISKETTE as follows:
MSDOS–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)
For hard copy transmission, FAX to (716) 425-2411.
Or send to: Dr. Ellen C. Carter • 2509 N. Utah St. • Arlington, VA 22207-4031

Please note: the deadline for submission of material is the 1st of even numbered months.


meeting reports


photos


contributions from members

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