

Inter-Society Color Council *News*



Number 354 March/April 1995

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ISCC 64TH ANNUAL MEETING

Koury Convention Center, Greensboro, North Carolina
 Saturday, April 22, 1995: Board Meeting
 Sunday April 23, 1995 : ISCC Annual Meeting

Morning

Continental Breakfast.

Registration

Education Committee.

Color - Diversity vs. Unity, moderated by Prof. Bob Chung

IMG Meeting

Member-Body brunch by invitation, Dr. Joann Taylor.
 Everybody else on your own.

Project Committee #49 Improved Colorimetry, Dr. Bill Thornton.

Poster Session (concurrent), Mr. Ron Oldchurch.

Interest Group III: Art, Design, and Psychology, Prof. Wade Thompson, Ms. Magenta Yglesias.

- *Chromatic Experience*, Dr. Bill R. Wooten, Brown University.

- *Joseph Albers: Interaction of Color: CD-Rom Edition*, Mr. Joseph Roberts, Pratt Institute.

- *Color Design and Fiber Arts*, Ms. Marion-Ortolf Bagley, University of Minnesota.

Newcomer's Meeting, Mr. Roland Connelly.

Pig Pickin' Reception at Greensboro Historical Museum..
 (Shuttle buses depart 5:30 and 5:45 P.M.)

MONDAY, APRIL 24, 1995

Continental Breakfast.

Registration

Interest Group I: Fundamental and Applied Color Research

Tutorial, Dr.. Mark Fairchild.

- *CRT Colorimetry*, Dr. Roy Berns, RIT Munsell Color Science Laboratory.

- *The Design and Use of a Cone Excitation Space*, Dr. Vivianne Smith, University of Chicago.

Project Committee #50: Commercial Lamp Light Spectral Power Distributions, Dr. Danny Rich.

(Continued→)

NOON

Award Luncheon and Business Meeting. Mr. Roland Connelly.

Interest Group II: Industrial Applications of Color, Mr. Rich Riffel, Mr. Bill Tuting.

- *What's New in Material Color Standards*, Prof. Frederick T. Simon, FTS, Inc.
- *Computer Color Formulation for Carpets: a comparison of Instrument Types*, Ms. Diane Niedrinhaus, HunterLab.
- *Experience with the New Color Facsimile Standards*, Dr. Giordano Beretta, Hewlett Packard.
- *Dyer's Brightness*, Mr. James Wiberley.

Tour of Greensboro-area textile plants.

Tabletop equipment exhibit with hor d' oeuvres, Mr. Joe Campbell.

TUESDAY, APRIL 25, 1995**JOINT SYMPOSIUM WITH AATCC**

Morning

Registration

Continental Breakfast

How We See Color

- *In Textiles, Color IS Quality, and the Eyes Have it!*, Louis A Graham, Lou Graham & Assoc.
- *Detection of Illumination Changes in Variegated Scenes*, Qasim Zaidi, Jeremy S. De Bonet, Branka Spehar, The Lighthouse.

BREAK**How We Describe Color**

- *Color Names for CIELAB Color Space*, Fred 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.

How We Match Color

- *Direct dyeing: Repeatability and Match Prediction*, Christina Miller and J. Richard Aspland, Clemson University.
- *Recipe Formulation for Textile Dyeing and Printing - How to Succeed in Industry*, Luiz Claudio Ramalho DE Almeida, Kelson Dos Santos Araujo, Robert Hirschler, SENAI/CETIQT.

Color, Design, and Textiles

- *Applications of Colorimetric Vision Systems in the Textile Industry*, Christopher D. Bunting, HunterLab.
- *Successes and Challenges of Fabricless Product Development*, Michael P. Keating, Cone Mills.

Moderated Discussion.**Symposium Adjournment.**

For Information Contact: Ann Laidlaw, SheLyn Inc., 1108 Greccade St. Greensboro NC 27408
Phone: (910) 274-1963 Fax: (910) 274-1971

ANNOUNCEMENTS**Desperately Seeking Membership Secretary!**

The position of ISCC Membership Secretary is available for an able candidate who wishes to serve the needs of the Inter-Society Color Council. The office of Membership Secretary is responsible for managing the membership database, printing mailing labels for ISCC publications and announcements, and answering questions from prospective members regarding the activities of the Council. In addition, the Membership Secretary also redirects returned mail, sends informational packets to new members, and reports membership information to ISCC Board meetings. Please contact current Membership Secretary for more information: Ann Laidlaw, SheLyn Inc., 1108 Greccade Street, Greensboro NC 27408 (910)274-1963.

New Board Members

ISCC Secretary Danny Rich announced at the meeting of the Board of Directors at Williamsburg, Virginia, February 12, 1995, that the voting delegates had elected Mark Fairchild, Ron Oldchurch and Wade Thompson to serve a three-year term from 1995 to 1998. Their biographies are published in ISCC NEWS No. 353, January/February 1995. They will replace Mike Brill, Bob Chung and Joel Pokorny whose three-year term expires at the end of the Annual Meeting in Greensboro, North Carolina, April 25, 1995.
Harry Hammond

Interested in being an Education Committee Chair?

The ISCC Education Committee is looking for someone who can provide the leadership and keep the committee active in the next three years. If you're interested in the position, or know someone who is a good candidate, please give Bob Chung a call at (716) 475-2722. Bob's fax number is (716) 475-7063.

INTEREST GROUP III ART, DESIGN AND PSYCHOLOGY

April 22-25, 1995

Interest Group III Seminar Presents Topics in Art,
Fiber Arts Design and Psychology

Since 1987, Art, Design and Psychology Interest Group III has endeavored to provide to the Council a forum in which current research, issues and topics relative to the concerns of its members might be presented. This year, Interest Group III will be presenting a schedule of prominent seminar speakers which represents a wide range of color interests and professional activity within the arts, design and psychology. These are individuals who have spent a considerable number of years making contributions to color as researchers, scholars and educators. The topics they will be presenting represent their most current research and professional activities. These individuals will be available to the audience for questions and you are strongly encouraged to join us and participate in this most worthwhile seminar.

Dr. Bill R. Wooten, Professor and Chairperson of the Department of Psychology at Brown University in Providence, Rhode Island will be presenting results of his recent research in color psychology entitled "Chromatic Experience." The "Chromatic Experience" study investigated how the psychological dimensions of hue, saturation and lightness contribute to sensations such as warm and cool and attempted to relate ratings of these attributes to the Opponent Process Theory.

Mr. Joseph Roberts, Chairperson of the Department of Art and Design at the Pratt Institute in New York will discuss the new CD-Rom Edition of Josef Albers' influential work *Interaction of Color* recently published by Yale University Press. Mr. Roberts was involved in designing the CD-Rom Edition of *Interaction of Color* and worked with the Josef Albers Foundation in implementing the transformation of this important work into the CD format. *Interaction of Color* was first published in 1963 and since then has been highly praised and widely recognized as one of the most important works on color relative to art and design ever published.

Marian-Ortolfo Bagley is Professor and Chairperson of the Design Communication program at the University of Minnesota, Minneapolis. Her presentation "Color Design for Fiber Arts" will explore after-image color perception as a design basis for the fiber arts. The paper will present the basic color integration strategies of gradation, contrast, transparency illusion, and the design integration principles of similarity, repetition, proportion and interpenetration.

Practical examples of gradations of value, hue and chroma will be shown in textile projects and from examples taken from the recent exhibition *Quilt Design* at the Goldstein

Gallery of the Department of Design, Housing and Apparel at the University of Minnesota.

*Prof. Wade S. Thompson, Chair
Art, Design and Psychology Interest Group III*

ISCC EDUCATION COMMITTEE WORKSHOP PLANNED

The ISCC Education Committee invites you to attend the workshop entitled, "Color — Diversity vs. Unity," on Sunday, April 23, 1995, 8:30 - 10:30 am at the 1995 ISCC Annual Meeting in Greensboro, NC. The workshop will provide you with a close look at how ISCC members differ in their color interests and, at the same time, search for unity in color. Panel members from Interest Group I (Fundamental and Applied Color Research), II (Industrial Applications), III (Art, Design, and Psychology), and the Education Committee will be present. Issues such as: "Where and how often do science and art of color cross paths?", "Are there new ways for vision people, industrial people, and creative people to relate color to each other more meaningfully?" will be addressed and explored.

RIT'S MUNSELL COLOR SCIENCE LABORATORY OFFERS INDUSTRIAL SHORT COURSES IN COLOR MEASUREMENT AND FORMULATION.

Rochester Institute of Technology's Munsell Color Science Laboratory will present its annual course, "Principles of Industrial Color Measurement," June 5-7, 1995 and a new course, "Industrial Instrumental Color Matching," June 8, 1995.

"Principles of Industrial Color Measurement," will focus on the applications of colorimetry for industrial color control. The course will be taught by Dr. Roy Berns, Director of the Munsell Color Science Laboratory and Dr. Mark Fairchild, Associate Professor of Color Science.

"Industrial Instrumentation Color Matching" will present techniques to successfully use computer colorant formulation systems in an industrial environment. This course will be taught by Ralph Stanziola, President of Industrial Color Technology.

These courses are highly beneficial to persons involved in the coloration of natural and synthetic materials such as coatings, textiles, and polymers.

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Also coming in June:

INDUSTRIAL SHORT COURSE IN COLOR IMAGING

"Device-Independent Color Imaging" will be held on June 12-14, 1995. This is a 3 day, intensive short course designed to teach methods of achieving high accuracy color for electronic imaging peripherals, so called device-independent color.

Color peripherals such as scanners, CRT displays, and thermal, ink-jet, electrophotographic and direct-digital printers, are an integral part of today's document processing and publishing and scientific visualization. In order to integrate these devices and achieve acceptable color fidelity, an understanding is required of the visual system, metrology, image formation principles and the interaction between observations and the colored image. This course will be taught by Dr. Roy Berns.

The second advanced course, "Color-Appearance Models: Theory and Practice," will be held Jun 15-16, 1995. This 2 day intensive short course is designed for scientists and engineers working in the fields of color science, color reproduction, and electronic imaging. Color-appearance models extend basic colorimetry, as typified by CIE tristimulus values, to the prediction of color matches and color appearance across widely varying viewing conditions. Tristimulus values can only predict color matches for identical viewing conditions. Recent advances in open systems for electronic image reproduction have accentuated the need for accurate and efficient color-appearance models. The instructor will be Dr. Mark Fairchild.

For further information, contact Colleen M. Desimone, Munsell Color Science Laboratory, Rochester Institute of Technology, Chester F. Carlson Center for Imaging Science, 54 Lomb Memorial Drive, Rochester, NY 14623; Telephone (716) 475-7189; FAX (716) 475-5988 E-Mail CMD9553@rit.edu

HEMMENDINGER LAB HAS NEW PARTNER!

Henry Hemmendinger has announced that Hugh Fairman has joined him as a partner in the Hemmendinger Color Laboratory (HCL), the Laboratory that Hemmendinger founded in 1970. HCL supplies material standards with accurate spectrophotometric and colorimetric measurements for transmission and reflection spectrophotometry. HCL standards are based on standard reference materials from the U.S. National Bureau of Standards (now NIST) and from the National Physical Laboratory (Great Britain). HCL standards can be used to verify the accuracy of spectrophotometers and spectrocolorimeters. It's anticipated that in the near future, HCL standards will be available with diagnostic software.

Fairman brings to the partnership his years of experience in carrying on the work of Edwin Stearns and William Venable to provide tristimulus weighting functions that will minimize the effect of instrument bandpass dependence. Fairman has been responsible for the conduct of the ASTM field test that documented the improvement. See article by Hugh S. Fairman, "Results of the ASTM field test of tristimulus weighting functions", *Color Res. Appl.* VOL. 20, pages 44-49 (1995).

Reported by Harry K. Hammond III

PROJECT COMMITTEE #49 - ACTIVITY UPDATE

Project Committee 49 on Improved Colorimetry, held a working meeting at Datacolor International, Lawrenceville, NJ on October 28, 1994. The meeting,

chaired by William Thornton, was convened to discuss the progress in assessing problems with classical descriptions of color matching.

Thirteen people were in attendance.

REVIEW OF PC49 WORK: In the experiments with the coupled visual colorimeter-spectroradiometer, early work always used a 10 degree visual field. Observations were made with both eyes, and with movement of the head unrestricted. Later this effort was extended to bright (120 cd/m²) and small visual fields (1.3 degree, central fovea). Four thousand viewed lights were measured as absolute spectral power distributions traceable to NIST, mostly as visually-matching maximum-saturation or Maxwell-method pairs. Both the 1931 2 degree and the 1964 10 degree CIE Standard Observers were found to yield very different computed chromaticities for two lights that visually match to the human observers, for dim and bright, large and small visual fields.

PROGRESS SINCE LAST MEETING (April 1994):

I. Chromaticity errors in 1000 visually matching pairs were converted to visual jnds by Simon-Goodwin and FMC1.

II. The large chromaticity errors (15-25 visual jnds) persist in bright and dim visual conditions, 10 degree and 1.3 degree fields, Maxwell and maximum-saturation matches.

III. A procedure for computing visual jnds of predicted rod intrusion was worked out and justified (by Hugh Fairman).

IV. Jnds of predicted rod intrusion were computed for 1000 visually matching pairs (bright and dim, 10 degree and 1.3 degree, Maxwell and max-saturation).

V. Confirmation was determined for Stiles' comment that his "very small correction" [for predicted rod intrusion] makes "...a negligible difference...for almost all cases of practical interest." Jnds of predicted rod intrusion offer no explanation for the large errors by the CIE Standard Observers.

VI. The PC49 database (4000 viewed lights, as absolute SPDs, plus hundreds of files of various forms of analysis) may

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now exceed that basing Stiles' 1964 Standard Observer.

VII. In 1993, PC49 analyses of 500 pairs were proffered to Pokorny, Smith, and Shapiro; that group analyzed the PC49 data for rod intrusion and published the analysis. Fairman recalculated their results, and arrived at values of scotopic retinal illuminances that were higher by at least a factor of 10 (and hence, were less favorable to rod intrusion).

Bill Thornton

Ellen C. Carter

*Color Research and Application
(703) 527-6003*

GRADUATE SCHOLARSHIPS IN COLOR SCIENCE

The Masters of Science degree program in Color Science at Rochester Institute of Technology is seeking highly-qualified applicants to fill the following scholarships:

Macbeth Engle Fellowship
Grum Memorial Scholarship
Munsell Color Science Laboratory
Scholarship

In addition, funding is available for teaching and research assistantships. Support can include full-time tuition (\$15,387) and 12 month stipend (\$15,000).

The Color Science program is an interdisciplinary program consisting of required courses in color vision, psychophysics, colorimetry, optical radiation measurements, color appearance, and color modeling, elective courses that build on the student's background and interests, and either a research thesis or graduate project. Graduates are in high demand and have accepted industrial positions in electronic imaging, color instrumentation, colorant formulation, and basic and applied research.

To obtain application forms and degree requirements, contact:

Dr. Roy S. Berns

Munsell Color Science Laboratory
Carlson Center for Imaging Science
RIT
54 Lomb Memorial Drive
Rochester, NY 14623
Phone 716 475 2230
Fax 716 475 5988
E-Mail: rsbpph@rit.edu

COLOR TUTORIAL BY SDSC

"Interactive Color" is a Macintosh-based application used to teach color. This color tutorial was created by the San Diego Supercomputer Center in 1991, and revised in 1993. It can be downloaded from the Internet.

The magic word is:

"ftp://ftp.sdsc.edu/pub/sdsc/graphics/interactive_color". This is a highly interactive tool to teach color. But there is one problem — some color concepts are incorrectly stated in the tutorial.

XIII SYMPOSIUM OF THE INTERNATIONAL RESEARCH GROUP ON COLOUR VISION DEFICIENCIES

This is an announcement for the XIII Symposium of the International Research Group on Colour Vision Deficiencies (IRGCVD) which will take place from July 27-30, 1995 in Pau, FRANCE.

President, Professor Andre ROTH (GENEVE); General Secretary, Professor Jack MORELAND (KEELE).

PRELIMINARY PROGRAMME

THURSDAY 27 JULY 1995

AM Registration
Directorial Committee Meeting
PM Scientific Sessions
Reception "Hotel de Ville"

FRIDAY 28 JULY 1995
AM Scientific Sessions
PM Scientific Sessions
Visit to the Castle of PAU
Reception in the Parliament of NAVARRE

SATURDAY 29 JULY 1995
AM Scientific Sessions
PM Trip: Discovery of BEARN
Dinner at the Castle of LAAS

SUNDAY 30 JULY 1995
AM Scientific Sessions
PM Scientific Sessions
Gala Dinner at the ESCALADIEU
Abbey

ADDITIONAL ACCOMPANYING
PARTNERS PROGRAMME
(only if the number of participants is sufficient)

THURSDAY AM PAU, English Town
FRIDAY AM + PM JOURNEE
PYRENEENNE

PRINCIPAL TOPICS OF THE SYMPOSIUM

- 1 Variation of Colour Vision: Genotypes and Phenotypes.
- 2 Structure and Function in Colour Vision.
- 3 Colour Vision and field Defects.

Registration fees include: congress kit, admission to scientific sessions, coffee breaks

For more information contact:

Dr. Jean LEID, 4 Place Royale, 64000 PAU, Tel: + 33 59275896 Fax: + 33 59276736 or

Dr. Ken KNOBLAUCH (LYON)
Tel: 33 72 13 15 88
Fax: 33 72 13 15 99
email: ken.knoblauch@cismibm.univ-lyon1.fr

ANNOUNCING INTERNATIONAL SYMPOSIUM ON LIGHTING FOR AGING VISION AND HEALTH

MARCH 22-23, 1995
Renaissance Hotel, Orlando
florida

Organized by the Lighting Research Institute Endorsed by the White House Conference on Aging Co-Chairs: Dr. David Sliney, Dr. Jack Werner, Dr. Werner Adrian

OBJECTIVE: To offer a scientific exchange of information on the optimization of lighting conditions for vision and health in the aging population. To offer possible input for policy recommendations to the White House Conference on Aging which meets in May 1995.

Questions to be addressed:

How does the eye age?
How does glare effect the aging eye?
What are the non-visual effects of lighting and aging:
How will the National Energy Policy Act 1992 effect the application of current knowledge?

Topics and Speakers:

Change of the Retina with Age: J. Marshall, United Kingdom
Age and the Visual System: R. Weale, United Kingdom
Glare Effects of Age and their Significance in Visual
Ergonomics: J.J. Vos, The Netherlands
Ocular Stray Light with Age, Effects of
Cataracts: J.T.P
VanderBerg, U. of Amsterdam, The Netherlands
General Aspects of Vision and Age: H. Leibowitz, USA

Color Vision Senescence J. Werner, USA
Change of Visual Acuity with Age: W. Adrian, Canada
Change of Contrast Sensitivity with Age & Reduction of
Retinal Contrast in Low Vision: G. Woo, Canada
Practical application regarding Visual Performance with Age:L. Halonene, Finland
UV-Radiation and its Effect of Aging: D. Sliney, USA
Visual Requirements of the Aging Driver: D. Kline, Canada
Effect of Visual Aging upon the Driver: F. Schieber, USA
Application of Current Knowledge in Lighting: E. Noel, USA
Non-Visual Effects of Lighting and Aging: C.M. Singer, USA
Lighting for Aging Vision and Health:Impact of the Energy Policy Act of 1992: E. Noel, USA, L. Anderson Canada, J. Haloin,USA

Costs:

\$300.00 per person if registered by February 28, 1995
\$324.00 per person after February 28, 1995

Payment must be made by check or money order drawn on a US Bank. Make check payable to the Lighting Research Institute.

Registration Includes: 2 lunches, all coffee breaks and a hard copy of the proceedings.
To Register: Send your check, Name, and address to:

Lighting Research Institute
120 Wall Street, 17th fl
New York, NY 10005-4001 USA
Phone: 212.248.5014
Fax:212.248.5019 or 5017

Hotel

Attendees are requested to make their own reservations. The Renaissance Hotel, Orlando florida, USA. Special rates if registered by February 20, 1995. Mention the LRI Symposium and receive rates of \$63.00 US single/one person/night plus tax \$78.00 US for a double/two person/night plus tax. \$15.00 US each additional person plus tax.

Renaissance Hotel, Orlando Airport
5545 Forbes Place, Orlando florida
32812 USA
Phone: 407/240/1000, FAX: 407/240/1005



NEWS FROM MEMBER BODIES

NEWS FROM ASTM

ASTM Committee E-12 on Appearance held its winter meeting January 24-27, 1995 in Phoenix, Arizona. Eleven technical subcommittees met separately prior to the meeting of the main committee. Fred Billmeyer always has a lively discussion of Terminology. He was unable to be present at this meeting; so it was chaired by the long-time subcommittee secretary, Robert Marcus, who is now Vice Chairman of the main committee. ASTM Standard E-284-93a, Terminology of Appearance already contains definitions of approximately 400 terms, but the evolution of appearance technology continues to require use of new terms, and to avoid ambiguity, terms need to be precisely defined. The most urgent need for new terms as well as understandable definitions of them, is in the area of pearlescent and effect pigments and instrument geometries.

The subcommittee on Colorimetry and Spectrophotometry has been chaired for years by Harry Hammond. He too was unable to be present at the meeting, but he provided an agenda that was mailed to all members prior to the meeting. The current requirement of this subcommittee is to review critically four standards that have been published for five years. ASTM regulations require that they be balloted for reaffirmation or revision as appropriate.

The close proximity of the deadline for sending material for the March/April issue of ISCC News to the printer prohibits publishing in this column brief but meaningful reports for each subcommittee. A few months hence the secretary will have minutes of what took place at the meetings. Anyone interested may request a copy from the

Committee Secretary, Yvonne Barnes, National Institute of Standard and Technology, Radiometric Physics Division, Bldg. 220, Room A305, Gaithersburg, Maryland 20899

Submitted by Harry K. Hammond III

USE OF CIE SYSTEM FOR COMPUTING COLORS

ASTM CIE has long published tables of standard observer color matching functions and standard illuminant spectral power distributions. In the early editions the user has been obliged to combine appropriate illuminant distributions with selected observer functions.

Use of different wavelength intervals and instrument spectral band widths can produce different computed colors for the same specimens. In an attempt to standardize procedures, ASTM Committee E-12 on Appearance published Standard E308 in 1966. The method has been widely used. It has also been revised several times. The committee found it difficult to decide whether E308 should be designated a "Standard Test Method" or "Standard Practice." ASTM designates the edition of a standard by adding a two digit suffix to the numerical designation to indicate the year of publication. When a standard is revised more than once during a year, a letter suffix is also added. This past year E308-94 was published early in the year and then in December E308-94a was published. Committee E-12 urges everyone to procure and use the latest edition, namely E308-94a. The committee also cautions that it is very important to designate which edition was used to obtain the results. Note particularly that there will be important differences in results depending on whether E308-94 is used or the superior data contained in E308-94a. Read carefully the "Introduction" to E308-94a.

Each edition of E308 has contained many pages of text and tables (31 in the latest). With previous editions, the user was obliged to type the tabular data into his spectrophotometer. The latest edition is to be available with a "Adjunct" in the form of a computer disk. The 94a edition and Adjunct Disk are available from ASTM. For ordering information and prices, telephone 215-299-5585 or fax 215-977-9679.

*Harry K Hammond III
ASTM E-12.02*

Spectrophotometry and Colorimetry

COLOR MARKETING GROUP ANNOUNCES UPCOMING COLOR FORECASTING CONFERENCES

CMG CMG announces its Spring and Fall International Conference dates and locations for 1995 and 1996.

Spring 1995 - May 14-16, 1995
Dallas, Texas
The Fairmont Hotel

Fall 1995 - November 5-7, 1995
Phoenix, Arizona
The Pointe Hilton Resort At Squaw Peak

Spring 1996 - May 5-7, 1996
New Orleans, Louisiana
Sheraton New Orleans Hotel & Towers

Fall 1996 - November 3-5, 1996
Seattle, Washington
Sheraton Seattle Hotel & Towers

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FSCT SEEKS NOMINATIONS FOR ARMIN J. BRUNING AWARD

Dr. Robert T. Marcus, Chairman of the Bruning Award Committee, has announced that nominations are being sought for the 1995 recipient of this award. Established to recognize an individual for outstanding contributions to the science of color in the field of coatings technology, the award commemorates Mr. Bruning, the inventor of the Davis-Bruning colorimeter. Mr. Bruning was noted for his devotion to the pursuit of the scientific study of color.

A nominee for the award must have contributed significantly to the field of color study. These contributions could include very basic work which increases our understanding of the interaction of colorants, light and observers (human and instruments). However, the contributions of the nominee could also include various aspects of techniques or theories developed by others, or the teaching of color science or the dissemination of information in a manner which has direct benefit to the coatings industry. The nominee does not have to be a member of the Society or the Federation of Societies for Coatings Technology.

To nominate an individual for the Bruning award, please contact Dr. Marcus, Chairman, at Pantone, Inc., 590 Commerce Blvd., Carlstadt, NJ 07072-3098, Telephone (201) 935-5500.

The nomination must include documentation concerning the nominee's qualifications and contributions in the area of color science for the coatings industry. Nominations must be received prior to May 12, 1995.

GATF TEACHER PROGRAM JULY 17-21, 1995

The Graphic Arts Technical Foundation (GATF) and the Graphic Arts and Research Foundation (GAERF) will sponsor the New Technology—Teacher Update Program July 17-21, 1995

The event will be funded by GEARF and administered by GATF.

The one-week program will feature intensive classroom sessions designed to expose educators to the latest in graphic arts reproduction technology through hands-on training experiences. The program will include a class project combining design, imaging, color separation, and reproduction. It will include electronic reproduction as well as conventional method.

The program is open to full-time educators in public or nonprofit institutions. The goal of the program is to provide an understanding of the training and retraining needs for tomorrow's work force.

Graphic arts educators teaching at junior or senior high, senior high vocational or technical, post-high technical, community or junior college, or four year college or university levels are eligible. Interested teachers are requested to submit an application form to GATF by Friday, April 21, 1995.

Twenty teachers will be selected for the program by use of a lottery system. However, special consideration will be given to teachers who have not previously attended a GEARF/GATF program. Selectees will be notified by Friday, May 12.

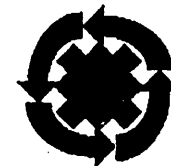
Housing will be provided at a local university dormitory for both teachers and participants. Participants will be responsible for their own transportation and meals. College credit can be earned for the program at some universities when advance arrangements are made.

For additional information contact:
Dr. Jack Simich at GATF
Phone 412-621-6941
Fax 412-621-3049.

GRADING COLORED DIAMONDS

GIA A comprehensive report on the system developed by Gemological Institute of America (GIA) Gem Trade Laboratory (GTL) to grade colored diamonds is published in the Winter 1994 issue of *Gems & Gemology*. To subscribe to the quarterly journal *Gems & Gemology*, contact Subscriptions Department toll-free in the U.S., phone: (800) 421-7250 ext. 201, fax: (310) 453-4478, or write *Gems & Gemology*, P.O. Box 2110, Santa Monica, California 90407-2110.

HFES TO HOLD ITS 39TH ANNUAL MEETING IN SAN DIEGO: "DESIGNING FOR THE GLOBAL VILLAGE"



SANTA MONICA, CA
— The Human Factors and Ergonomics Society 39th Annual Meeting will take place October 9-13, 1995, at

the Sheraton Harbor Island Hotel. This year's theme, "Designing for the Global Village," recognizes the need for ergonomists, as designers, to become more sensitive to the international community and to the challenges that cultural diversity presents.

Throughout the week the meeting will feature hands-on workshops geared toward professionals at all levels (CEU credit is available) as well as more than 100 technical sessions on a broad range of ergonomics-related topics: for instance, office ergonomics, carpal tunnel syndrome, aging, consumer

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products, persons with disabilities, medical systems, safety, computer systems, environmental design, aviation/aerospace, biomechanics, communications, forensics, system development, organizational design and management, test and evaluation, and visual performance.

Attendees will also have the chance to browse book, service, and product exhibits; tour technical and research facilities in the area; and attend special events, such as receptions, an awards banquet, and local outings. The HFES Placement Service will be available to help match job seekers and employers.

The deadline for lectures, panels, symposia, debates, demonstrations, and workshops is February 13; poster proposals are due March 27. You need not be an HFES member to participate. The Call for Proposals is available immediately, and preliminary program/registration packets will be mailed in July. For information, contact HFES at the address above.

HFES is a multidisciplinary professional organization of more than 5400 persons in the United States and throughout the world. Members include psychologists, engineers, designers, and scientists, all of whom have a common interest in designing systems, tools, consumer products, and equipment to be safe and effective for the people who operate and maintain them.

Contact: Lois Smith, Publications
Manager

Human Factors and Ergonomics
Society

P.O. Box 1369

Santa Monica, CA 90406-1369 USA

310/394-1811

Fax: 310/394-2410

72133.1474@compuserve.com

HFES RELEASES NEW BOOK ON METHODS OF MEASURING THE HUMAN BODY



SANTA MONICA, CA
The Human Factors
and Ergonomics
Society proudly
announces the publi-
cation of

**ANTHROPOMETRIC METHODS:
DESIGNING TO FIT THE HUMAN
BODY** by John A. Roebuck, Jr., an
internationally recognized expert on
anthropometry and its applications.
The book is best described in the
author's own words:

"Technological innovations are changing the ways in which anthropometry [the science of human measurement] is used in engineering applications. Among these innovations are computer modeling of people as substitutes for living humans in computer-aided design and the use of new electronic imaging methods for measurement. Anthropometric measurement and application methods are currently undergoing significant revolutions in concepts as a result of new technologies.

"In [ANTHROPOMETRIC METHODS] I describe what these methods were like before the revolution, how they are changing, and what they may be like in the future. . . . Included are descriptions of how [anthropometry] can beneficially influence the practice of human factors/ergonomics in the design of products that can be used readily and safely."

- From the introduction

The book describes traditional and new technology for performing measurements, summarizing data, and analyzing and presenting those data prior to their integration into

simulations. It also enables designers to develop design requirements and evaluate prototypes.

ANTHROPOMETRIC METHODS covers the following topics: (a) preparing for measurements, (b) devices and procedures for measuring, (c) reporting statistical results, (d) forecasting and estimating, (e) tools for applications, (f) work space design and evaluation, (g) design/evaluation of tools and equipment, and (h) clothing design. Also included are references, a glossary, appendixes, and an index.

ISBN 0-945289-01-4, 5 = 8 = , paperbound, 200 pp. \$15 for HFES members; \$20 for nonmembers; \$5 shipping/handling; California sales tax if applicable. Quantity discounts are available. To request a review copy, call 310/394-1811 today. The Human Factors and Ergonomics Society is a multidisciplinary professional organization of more than 5400 persons in the United States and throughout the world. Members include psychologists, engineers, designers, and scientists, all of whom have a common interest in designing systems, tools, consumer products, and equipment to be safe and effective for the people who operate and maintain them.

Contact: Lois Smith, Publications
Manager

Human Factors and Ergonomics
Society

P.O. Box 1369

Santa Monica, CA 90406-1369 USA

310/394-1811

FAX 310/394-2410

72133.1474@compuserve.com

THE VISUAL PERCEPTION AND INSTRUMENTAL MEASUREMENT OF "WHITE AND "WHITENESS"



The Optical Society of America is holding their annual meeting in Portland,

Oregon, September 11-15, 1995. A technical session within the division of Color and Vision is planned, as indicated in the title above.

While many people will argue that "white" is achromatic and therefore not a color, the cognition of the phenomenon which is commonly called white involves several unique features of the color vision system. It also requires some special characteristics of the optical instrumentation used to objectively characterize materials that are intended to possess the visual attributes of "white" or "whiteness". The color white also appears to hold a special place in the theory of advanced colorimetry, known as color appearance. "White" is used in more commercial applications than any other single color. Many commercial products, like paper, cotton, wool and pigments are graded and priced on the basis of their whiteness.

This session will consist of invited and contributed papers from both the color vision community and the color technology community, with the aim of bringing together the fundamental and applied aspects of this commercially important optical phenomenon. You are encouraged to submit a contributed paper on any aspect of the measurement and evaluation of white or near-whites. The paper can address the influence of

"white" and "whiteness" on physiological models of color vision, phenomenological models of color appearance and color reproduction and on the industrial problems of paper, textiles, paints, plastics and foods and pharmaceuticals.

Send abstracts to:
Dr. Danny C. Rich
Datacolor International
5 Princess Road
Lawrenceville, NJ 08648
73700.3514@compuserve.com
or send them directly to OSA
headquarters in Washington, DC.

CALL FOR PAPERS

Topic: Coloring Plastics for Performance, SPE RETEC 95, Charleston, SC



The Color and Appearance Division (CAD) and the Carolinas Section of the Society of Plastics Engineers (SPE) will co-sponsor a RETEC in Charleston, SC (Isle of Palms, Wild Dunes Resort) on September 25-26, 1995. You are invited to submit an abstract for the conference. We are looking for qualified papers to address: Coloring Properties and Effects of Colorants on Processing and Polymer Properties. Topics to be covered are:

- Colorant Properties
- Effects on Processing
- Governmental Regulations
- Effects of Polymer Properties
- Process Control
- Industry Specifications

Send Abstract to:

Color & Appearance 1995 RETEC
Call for Papers
Johnny Suthers, Eastman Chemical
Company, P.O. Box 51, Kingsport, TN
37662
Telephone (615) 229-3263; Fax (615)
229-4205
Papers are due no later than June 14,
1995

OTHER NEWS

INTERDISCIPLINARY CONFERENCE MESHES VISION RESEARCH AND PHILOSOPHY IN EXPLORATION OF CONTEMPORARY COLOR SCIENCE

Although there is a long tradition in philosophy of reflection on the metaphysics and epistemology of color and color experience, most of this work has proceeded independently of scientific research on color vision. By the same token, researchers in color science have often ignored the philosophical literature on color and on the philosophy of science. The IRCS (Institute for Research in Cognitive Science) Color Science and Philosophy Conference gathered color scientists and philosophers together in April at the University of Pennsylvania in order to explore how empirical research in color science might bear on traditional philosophical discussions of color and color experience, and to explore how philosophical reflection on color and the nature of scientific theories and explanation might help to sharpen and clarify the aims and explanations offered by contemporary color science.

The conference was organized by IRCS postdoctoral fellow David Bennett and grew out of a joint Psychology/Philosophy seminar co-taught by Ed Pugh and Gary Hatfield. Leo Hurvich and Dorothea Jameson gave the opening and closing talks, respectively. Larry Hardin's talk "Basic Color Terms and Color Categories" was part of the IRCS Friday colloquium series.

Color Conference Presentations:
"Hering's Theories of Nervous

(Continued→)

Processes" by Leo Hurvich, U. Penn.; "Basic Color Terms and Basic Color Categories" by Larry Hadin, Philosophy, Syracuse University; "Color and Representation Content: Metameric matching and the Distal Focus of Perception" by Gary Hatfield, Philosophy, U. Penn. - commenting: Gershon Buchsbaum, Bioengineering, U. Penn.; "Psycho-physiological Linking Hypotheses, Critical Loci and Bridge Loci: Applications to Color Vision" by Edward Pugh, Psychology, U. Penn. - commenting: David Teller, Psychology, U. of Washington; Brian McLaughlin, Philosophy, Rutgers; "Analyzing Objective Color in Terms of Subjective Reactions" by Gilbert Harman, Philosophy, Princeton; - commenting: Ernest Sosa, Philosophy, Brown U., Michael Tye, Philosophy, Temple U.; "Visual Processing in the Cerebral Cortex: Blind Spots, Headaches, and Gray Rainbows" by Dorothea Jameson, Psychology, U. Penn. - commenting: Justin Broakes, Philosophy, Brown U.; Leif Finkel, Bioengineering, U. Penn; Edward Pugh.

(excerpt and edited from Strokes of the Penn, Vol.4 (1) Nov. 1994.)



COLOR RESEARCH AND APPLICATION

IN THIS ISSUE, February 1995

Throughout history inventions and new technologies as well as changing tastes have led to new occupations. However, it is not often that we examine a new profession in this type of scientific journal. We open this issue with a different sort of article, "The Color Consultant: A New Professional Serving Architecture Today in France" by Sonia Prieto. Two important periods during the 20th century, one focusing on the use (or non-use) of color in architecture and the other highlighted by painter-artists who wanted to apply their work to constructed space on a different scale, heralded the development of the color consultant in French architecture. After an historical overview of color in French architecture, Dr. Prieto describes the contributions of six color consultants and how their seminal work grew into a new profession.

In previous issues, [vol. 16, 166-180, 181-197; vol. 18, 98-113 and 191-209] we have included articles describing the work of several projects at the Loughborough University of Technology Computer-Human Interface (LUTCHI) Research Centre. In this issue, Dr. M. Ronnier Luo, X.W. Gao, and S.A.R. Scrivener continue reporting on related research in "Quantifying Colour Appearance. Part V- Simultaneous Contrast." While the earlier articles described the experimental procedures to quantify color appearance in three media, reflective, monitor, and transmissive materials, this article focuses on the effect of simultaneous contrast in experiments. Experiments were conducted to investigate the effect of simultaneous contrast on color appearance by varying the lightness, colorfulness, and hue of an induction field surrounding a test color. The results are reported, and the Hunt color appearance model was tested.

C. Rich and Jocelyn Jalijali report on an experiment that produced results similar to those of the North and Fairchild experiments. In "Effects of Observer Metamerism in the Determination of Human Color Matching Functions," the authors review the history of observer metamerism, discuss some of the possible sources of the large variations in inter-observer matches, then formulate a commercially viable special index of metamerism for change in observer.

Most common color difference formulae are developed for very small variations in color, and based on the assumption that the scale is made up of multiples of threshold steps. However, it has been shown that this is not true when one gets to very large color differences. Therefore, the question arises as to whether there is one linear scale for small differences and another for large differences with a transition somewhere in between, or whether the entire color difference scale is non-linear. In "Linearity and Additivity of Small Color Differences" Klaus Witt reports on an experiment to determine whether there is a transition in metric scale of color difference in the range of small to medium color difference and, if so, where that transition is located.

In 1989, in this journal, William Venable recommended a computational procedure by which a correction for spectral bandpass error could be built into the CIE tristimulus weighting functions. Do the newly calculated tristimulus weighting factors reduce the bandpass dependence? The American Society for Testing and Materials, using 140 spectra selected from those actually found in participants laboratories, conducted a field trial involving over 15,000 color differences resulting from tristimulus values calculated using various sets of tristimulus weighting functions. Hugh Fairman in "Results of the ASTM field Test of Tristimulus Weighting Functions" reports that errors were reduced by one to two orders of magnitude from errors using uncorrected weight sets.

The next article, "Automotive Color Certification" by William V. Longley is based on his presentation at RETEC '93, which was selected as Best Paper by the evaluation committee of the Color and Appearance Division of the Society of Plastic Engineers. Even though there have been great advances in color measurement instrumentation and computer control software, there are few industries which allow the acceptance of color by the instrumental numbers without a visual override. The automobile interior is an example of a product in which numerous parts are made out of different materials must match in color for the look of total quality. In this article Mr. Longley describes a pilot program in which the producers certify batches of color concentrate or precolored resin as meeting certain measured criteria. The parts are then molded and installed in vehicles and are not challenged visually but are monitored for the record. Good color match quality has resulted.

From the automotive industry, we next move to two articles inspired by work in the textile industry. The advent of computer-controlled jet printing of textiles motivated researchers to study trichromatic printing. The color resulting from partial overlap of the dots in a printing pattern is difficult to predict because subtractive mixing occurs where there is overlap, but the observer interprets the overall effect of the dots by additive means. Herbert M. Kulube and Chris Hawkyard have developed a model to predict the color of trichromatic or polychromatic printing on a substrate. They give the details of the model in "Predicting the Colour of Trichromatic Prints" in this issue.

In the next article, "Objective Evaluation of Color Design III" Naoki Kawamoto develops an evaluation method applicable to real color designs such as those with multiple color in elements of varying size on fabrics. The first article in this series by Soen, Shimada, and Akita examines whether esthetics can be subjected to scientific analysis by evaluating random color patterns and Fourier analysis. The

second article by Kawamoto and Soen examines color harmony in terms of 13 scales such as beautiful-ugly, etc. This article deals particularly with the problem of ordered repeats of color arrangements in a pattern.

Also found in this issue is another featured classic in color. Herbert E. Ives' 1912 article "The Relations Between the Color of the Illuminant and the Color of the Illuminated Object" is reprinted from Transactions of the Illuminating Engineering Society with an introductory commentary by Michael H. Brill. While Ives is well-known for his work in many areas of color science, however, his contribution to the assessment of color rendering by light sources is not one of the areas well documented. To quote Dr. Brill, "this work comprised what may be the first computational test of von Kries's theory of color constancy."

Ellen C. Carter

*Color Research and Application
(703) 527-6003*

COLOR RESEARCH AND APPLICATION SPECIAL ISSUE ON FLUORESCENCE PART 2

IN THIS ISSUE

Vol. 20, Issue #2, April, 1995

This is the second special issue on fluorescence. The first special issue on fluorescence appeared as Issue #6, Vol. 19, December 1994. That issue contained articles which fall into the general category of colorimetry of fluorescent materials. This issue features articles dealing with the applications using fluorescent colors. As with the first issue, each of the authors in this issue presented a lecture on the same topic as their article at the 1994 Inter-

Society Color Council Williamsburg Conference on Colorimetry of Fluorescent Materials. For a brief description of all the presentations at that conference readers should note Michael Brill's review of the meeting published in the August issue of this journal. [See 19:313-317,1994.]

In the applications area there are several articles related to traffic and pedestrians. First, David M. Burn, Norbert L. Johnson, and Lee A. Pavelka from the Traffic Control Division of 3M Company bridge the gap between colorimetry and applications by presenting "Colorimetry of Durable Fluorescent Retroreflective Materials." This new class of materials combine the prismatic retroreflective optics and bright fluorescent colors to produce materials that have increased daytime conspicuity. The very characteristics that make these materials so noticeable present a particular challenge to measurement. These challenges, some solutions, and suggestions for future commercial instrumentation are presented by these authors. Two applications follow; traffic signs and pedestrian identification.

In an article about traffic signs two of the former authors, David M. Burns and Lee A. Pavelka describe the results of a field study investigating the relative advantages of fluorescent colors over regular colors for detection, color recognition and conspicuity in traffic situations. In "Visibility of Durable Fluorescent Materials for Signing Applications," they found that fluorescent colors have the property of gaining greater amounts of attention. Gary Lesley writes about "Enhancing the Daytime Conspicuity of Pedestrians Through the Use of Fluorescent Materials." Mr. Lesley points out that it is important that pedestrians not only be noticed but must be recognized as people rather than merely roadside objects. Designs and markings on clothing must enhance the vehicle operators ability to not only see the pedestrian but also to recognize that it is a person.

A. Nurhan Becidyan describes the importance of fluorescent and

(Continued→)

luminescent dyes or pigments in a quite different application, the security of currency. Most often these applications are not limited to the traditional fluorescent pigments emitting visible light, but rather extended dyes or pigments that follow the fluorescent principle of absorbing in one region and emitting radiation in another with increased conspicuity. Mr. Becidyan's color photographs of currencies from around the world demonstrate the ingenuity in this application admirably.

A more traditional application of fluorescent pigments is in the paper industry. Fluorescent brighteners make paper look whiter. Yana Y. Kulikova, Michael K. Schaepe, and Wayne B. Robbins describe research done at the Institute of Paper Science and Technology. In "Assessment of the Influence of Paper Formation on the Fluorescence Contribution to Brightness," the authors examine CIE Whiteness both including and excluding fluorescence as a function of formation. Formation is a paper industry term which refers to the uniformity of wood fiber distribution in the matrix of the paper. Since direct observation of brightness is often confounded with the addition of fluorescent dyes for brightness enhancement, understanding the relationship of paper formation and the fluorescence contribution to paper brightness is an important element in describing subjective paper nonuniformity appearance.

The issue closes with a Color Forum concerning metamerism. Lawrence D. Carstensen of Columbus Coated Fabrics proposes examining formulations involving metamers, near-metamers (paramers), and even potentially invariant samples with the CMC acceptability formula to calculate a metameric error. Mr. Carstensen hopes that this proposal will generate a meaningful reader exchange of ideas on this very real industrial problem.

Ellen C. Carter
Color Research and Application
(703) 527-6003

NEW MEMBERS

We're pleased to announce the newest members of ISCC. Welcome!

Mr. Lawrence D. Carstensen
Borden Packaging and Industrial Products
1280 Borth Grant Ave.
Columbus OH 43201
USA

Mr. Manjit Daniel
Photo Research
9330 DeSoto Avenue
Chatsworth CA 91311
USA

Mr. Don DePorter
8200 Montgomery Blvd. NE #299
Albuquerque NM 87109
USA

Ms. Mary M. Hartzell
Division of Textiles & Clothing
Room 129
Univ. of California
Davis CA 95616
USA

Mr. Richard Herzog
Thompson Consumer Electronics
101 W. 103rd Street
MS 46206-INH 520
Indianapolis IN 46206-1102
USA

Dr. Jee L. Look
Procter & Gamble Company
Miami Valley Lab, Rm25146
PO Box 538707
Cincinnati OH 45253-8707
USA

Mr. Alex J. Lukshaitis
Rhe-Tech, Inc.
1500 N. Territorial Road
Whitmore Lake MI 48439
USA

Mr. Rod Overbeek
Herman Miller Inc.
8191 Logistics Drive
MS 0254
Zeeland MI 49464
USA

Ms. Hilary Page
12451 Queensbury Lane
Houston TX 77024-4138
USA

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RIT Munsell Color Science Laboratory
54 Lomb Memorial Drive
Rochester, NY 14623-5604
phone: 716-475-2230
fax: 716-475-5988
e-mail: rsbph@rit.edu

C A L E N D A R

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

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

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

Harry K. Hammond, III

or

John W. Peterson

BYK-Gardner, USA

2435 Linden Lane

Silver Spring, MD 20910

Phone: 301-495-7150

Fax: 301-585-4067

1995

ASTM COMMITTEE D-20 ON PLASTICS

Mar. 12-16

Denver, Colorado

Information: Katharine Schaaf

Phone: (215) 299-5529

RIT SEMINAR

Mar. 30-31

Visualizing & Communicating Color

Rochester Institute of Technology

Rochester, NY

Information: Rochester Institute of Technology

Technical and Education Center of

the Graphical Arts

Frank E. Gannett Building

66 Lomb Memorial Drive

Rochester, NY

14623-5604

Phone: (716) 475-2737

Fax: (716) 475-7052

TAGA ANNUAL CONFERENCE

Apr. 2-5

Technical Association of the Graphic Arts Annual Technical Conference

Orlando, Florida

Information: Karen Lawrence

Phone: (716) 475-7470

AVA ANNUAL GENERAL MEETING

Apr. 35

Invariance and Constancy in Vision

Information: Dr. John Harris

Department of Psychology

University of Reading

Earley Gate

Whiteknights

Reading

RG6 2AL

Phone: 011 44 0734 318522

COLOR COMMUNICATIONS

Apr. 19-21

International conference to be held at

Renold Conference Center, UMIST

Manchester, UK

Information: Mrs. P. A. Leigh

CE Office UMIST

P.O. Box 88

Manchester, M60 10D

Phone: (01) 61-200-3995

Fax: (01) 61-200-3534

ISCC ANNUAL MEETING

Apr. 23-25

Color and Textiles

Inter-Society Color Council with American Association of Textile Chemists and Colorists

Holiday Inn Four Seasons

Greensboro, North Carolina

Information: Ann Laidlaw

Phone: (919) 274-1963

IS&T

May 7-12

Imaging On the Information Superhighway

Information: IS&T

7003 Kilworth Lane

Springfield, VA

22151

Phone: (703) 642-9090

Fax: (703) 642-9094

E-mail: imagesoc@us.net

(Continued→)

CMG SPRING CONFERENCE

May 14-16
 Color Marketing Group International Color Directions
 Conference
 Fairmont Hotel
 Dallas, Texas
 Information: Katie Register
 Phone: (703) 329-0155

CORM 95, ANNUAL MEETING

May 15-17
 Council for Optical Radiation Measurement
 Westin Hotel, Ottawa, Ontario, Canada
 Information: Norbert Johnson
 Phone: (612) 733-5939
 Fax: (612) 733-6211

MCSL SHORT COURSES

Munsell Color Science Laboratory, Rochester Institute of
 Technology, Rochester, New York
 June 5-7 Principles of Industrial Color Measurement
 Instructors: Roy Berns & Mark Fairchild
 June 8 Industrial Instrumental Color Matching
 Instructor: Ralph Stanziola of Industrial
 Color Technology
 June 12-14 Device Independent Color Imaging
 Instructor: Roy Berns
 June 15-16 Color-Appearance Models: Theory & Practice
 Instructor: Mark Fairchild
 Information: Colleen Desimone
 Phone: (716) 475-7189
 Fax: (716) 475-5988

ASTM COMMITTEE E-12 ON APPEARANCE

June 21-23
 Denver, Colorado
 Information: Bode Buckley
 Phone: (215) 299-5599

June 26-30
 Virtual Reality and its Applications
 Leeds, UK
 Information: Mrs. F. Johnson
 Conference Office
 University of Leeds
 Leeds
 LS2 9JT
 Phone: 011 44 0532 336100

**5th INTERNATIONAL CONFERENCE ON IMAGE
PROCESSING**

June 26-30
 Information: IAP95 Secretariat
 IEE Conference Services
 Savoy Place
 London
 WC2 0BL

ASTM COMMITTEE D-1 ON PAINT

July 9-13
 Atlanta, Georgia
 Information: Mrs. Katherine Morgan
 Phone: (215) 299-5529

ASTM COMMITTEE D-20 ON PLASTICS

July 9-13
 Lake Como, Wisconsin
 Information: Mrs. Katherine Morgan
 Phone: (215) 299-5529

1995 IESNA ANNUAL CONFERENCE

July 29 - Aug. 3
 Marriott Marquis
 New York City, New York
 Information: Valerie Landers
 IESNA
 Phone: (212) 248-5000 ext. 117

AIC INTERIM MEETING '95

Colorimetry
 Sep. 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. 10-15
 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, Oregon
 Information: OSA Meeting Department
 Phone: (202) 416-1980

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

(Continued→)

AATCC CONFERENCE AND EXHIBITION

Oct. 8-11
 American Association of Textile Chemists and Colorists
 Hyatt Regency
 Atlanta, Georgia
 Information: AATCC
 Phone: (919) 549-8141

IS&T 4th TECHNICAL SYMPOSIUM

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
 E-mail: imagesoc@us.net

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

**IS&T 11th ANNUAL INTERNATIONAL CONGRESS ON
ADVANCES IN NON-IMPACT PRINTING TECHNOLOGY**

Oct. 29 - Nov. 3
 Hyatt Regency Hilton Head
 Hilton Head, SC
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 Springfield, VA
 22151
 Phone: (703) 642-9090
 Fax: (703) 642-9094
 E-mail: 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, Arizona
 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
 E-mail: imagesoc@us.net

ASTM COMMITTEE D-20 ON PLASTICS

Nov. 13-16
 Norfolk, Virginia
 Information: Mrs. Katherine Morgan
 Phone: (215) 299-5529

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

Jan. 21-24
 Fort Lauderdale, Florida
 Information: Scott Orthey
 Phone: (215) 299-5507

ASTM COMMITTEE E-12 ON APPEARANCE

Jan. 22-24
 Fort Lauderdale Florida
 Information: Bode Buckley
 Phone: (215) 299-5599

USNC/CIE "1995" ANNUAL MEETING

Jan. 27-29
 United States National Committee of CIE
 Orlando, Florida
 Information: Bode Buckley
 Phone: (215) 299-5599

ASTM COMMITTEE D-20 ON PLASTICS

Mar. 18-21
 Orlando, Florida
 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, Texas

Information: Karen Lawrence

Phone: (716) 475-7470

ISCC/ASTM ANNUAL MEETING

May 5-7

Orlando, Florida

Information: Dr. Dan Rich

Phone: (609) 895-7427

Fax: (609) 895-7461

CMG SPRING CONFERENCE

May 5-7

Color Marketing Group Conference

Sheraton New Orleans Hotel & Towers

New Orleans, Louisiana

Information: Katie Register

Phone: (703) 329-8500

Fax: (703) 329-0155

ASTM COMMITTEE E-12 ON APPEARANCE

May 8-10

Orlando, Florida

Information: Bode Buckley

Phone: (215) 299-5599

EXPO 96

May 11 - Oct. 4

Color and Light in Communication

Information: Gabor David

3 Tukory u.

Budapest

H-1054

Hungary

ASTM COMMITTEE D-1 ON PAINT

June 23-26

San Francisco, California

Information: Scott Orthey

Phone: (215) 299-5507

ASTM COMMITTEE E-12 ON APPEARANCE

June 24-26

San Francisco, California

Information: Bode Buckley

Phone: (215) 299-5599

AATCC CONFERENCE AND EXHIBITION

Oct. 8-11

American Association of Textile Chemists and Colorists

Opryland Hotel

Nashville, Tennessee

Information: AATCC

Phone: (919) 549-8141

CMG FALL CONFERENCE

Nov. 3-5

Color Marketing Group Conference

Sheraton Seattle Hotel & Towers

Seattle, Washington

Information: Katie Register

Phone: (703) 329-8500

Fax: (703) 329-0155

ASTM COMMITTEE D-20 ON PLASTICS

Nov. 18-21

New Orleans, Louisiana

Information: Mrs. Katherine Morgan

Phone: (215) 299-5529

1997**ASTM COMMITTEE D-1 ON PAINT**

Jan. 26-29

Fort Lauderdale, Florida

Information: Scott Orthey

Phone: (215) 299-5507

ASTM COMMITTEE E-12 ON APPEARANCE

Jan. 26-29

Fort Lauderdale, Florida

Information: Bode Buckley

Phone: (215) 299-5599

Fax: (215) 299-2630

TAGA ANNUAL CONFERENCE

May 4-7

Technical Association of the Graphic Arts Annual Technical Conference

Montreal or Quebec City, Canada

Information: Karen Lawrence

Phone: (716) 475-7470

COLOUR '97

May 26-30

8th AIC Quadrennial Meeting

Colour '97 Executive Committee Meeting

May 25

Kyoto International Conference Hall (KICH)

Kyoto, Japan

ISCC ANNUAL MEETING

Sep. 14-17

Inter-Society Color Council Annual Meeting with Color
and Appearance Division of Society of Plastics Engineers
Newport, Rhode Island

Information: Gary Beebe

Phone: (215) 785-8497

AATCC CONFERENCE AND EXHIBITION

Sep. 28 - Oct. 1

American Association of Textile Chemists and Colorists
Marriot Marquis
Atlanta, Georgia

Information: AATCC

Phone: (919) 549-81411998

AATCC CONFERENCE AND EXHIBITION

Oct. 12-15

American Association of Textile Chemists and Colorists
Convention Center

Charlotte, North Carolina

Information: AATCC

Phone: (919) 549-8141

1998**TAGA ANNUAL CONFERENCE**

May 3-6

Technical Association of the Graphic Arts Annual Techni-
cal Conference

Chicago, Illinois

Information: Karen Lawrence

Phone: (716) 475-7470

ASTM COMMITTEE E-12 ON APPEARANCE

Jun. 16-18

Saint Louis, Missouri

Information: Bode Buckley

Phone: (215) 299-5599

Fax: (215) 299-2630

AATCC CONFERENCE AND EXHIBITION

Oct. 4-7

American Association of Textile Chemists and Colorists
Convention Center

Philadelphia, Pennsylvania

Information: AATCC

Phone: (919) 549-8141

**1999****TAGA ANNUAL CONFERENCE**

May 2-5

Technical Association of the Graphic Arts Annual Techni-
cal Conference

Philadelphia, Pennsylvania

Information: Karen Lawrence

Phone: (716) 475-7470



J O B S W A N T E D !

This Section is intended to help ISCC members that are in need of, and are looking for employment. Here is an opportunity to use the resources at hand.

There is no charge for this service. However the restrictions are as follows:

1. This service is for ISCC members' use only.
2. No more than 50 words may be used to describe yourself.
(Not including name address and/or telephone number).
3. If you are using a P.O. Box, you must supply a complete address.
4. No Agency representing member(s) is allowed.
5. Neither the ISCC News nor the editors are responsible for any errors.
6. You must advise us in writing when you have obtained employment.

We hope this new section will be of value to you, the ISCC member. If you have any suggestions/criticisms, please send them to the editor. Let's make this work!

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B.S. in Imaging Science (Rochester Institute of Technology) seeks full time position in product development. Strong fundamental background in imaging science. Working knowledge of C, C++, digital image processing, and color measurement instrumentation.

Experience: Research assistant at Munsell Color Science Laboratory conducting psychophysical study on observer metamerism.

Willing to relocate.

Please contact:

Jason E. Gibson

6806 Gillis Rd.

Victor, NY 14564

Telephone: 716/924-2346

E-mail: jeg7324@ultb.rit.edu

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:

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

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



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