

Inter-Society Color Council *News*

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*Roy Berns receives the
Macbeth Award*

MACBETH AWARD TO ROY S. BERN S

Citation by Fred W. Billmeyer, Jr.

President Luke, Friends in the ISCC:

It is both a pleasure and an honor to present to you the recipient of the 1990 ISCC Macbeth Award, Roy S. Berns.

As a reminder, the Macbeth Award was established in 1972 by Norman Macbeth, Jr., long-time Treasurer of the ISCC, in honor of his father, Norman Macbeth, Sr., a founding member of the ISCC and founder of the Macbeth Daylighting Corporation, now a part of Kollmorgen. It is presented every second year for outstanding recent contributions to the field of color. While this might imply that the recipients should be youthful, a scan of the list of those already receiving the award leads one to conclude the opposite. It is refreshing, therefore, to see a candidate who, while still a young man, fulfils the

requirement of having made (and continuing to make) major contributions to color.

Roy Berns attended the University of California at Davis, receiving his B. Sc. degree in 1976 with a minor in textile design, and his M. Sc. degree in 1978 in textile chemistry. He studied with Dr. Howard Needles on various methods of improving the dyeability of polyester fibers. Here he also gained experience in teaching that has benefited him in later circumstances. In 1978 Roy moved to Southern California where he obtained valuable industrial experience, serving as Laboratory Manager for Custom Finishing, Inc., a contract carpet dyeing and finishing firm. His responsibilities included visual and instrumental computer color matching, product development, and quality assurance for continuous dyed and printed carpets.

I first met Roy through correspondence when he wrote to



LUKE PASSES GAVEL

A major moment of the brief business meeting was the passing of the gavel by past president Joy T. Luke to current president Hugh Fairman.

The in-coming officers president-elect Paula Alessi and Secretary Dan Rich were recognized along with the incoming directors Sally Graves, Romesh Kumar, and Nancy Jo Howard.

The retiring secretary, Therese Commerford, was presented with a gift of Steuben glassware in recognition of her eight years in this demanding office. As is customary, the retiring directors received certificates of appreciation for their service.

*Hugh S. Fairman,
ISCC President 1990-1992*

inquire about the Ph. D. program in color science at The Rensselaer Color Measurement Laboratory. He joined our group in 1980. We were fortunate to obtain a Fellowship Grant from the Kollmorgen Foundation for him to study color constancy, with application to that property in the Munsell Book of Color. He received the Ph. D. degree in 1983.

I was greatly impressed by the wide variety of talents Roy brought to our group. As I did with all my students, I gave him some teaching responsibilities in our industrial short courses, and encouraged him to assist my younger B.Sc. and M. Sc. students with their research. I think he did not always appreciate the additional experience he gained in this way. Among the happier events that took place while Roy was in my group was his marriage to his Susan. You should also know that Roy has talents as a guitarist and songster; at his wedding reception he entertained us with a long spontaneous ballad accompanied on the guitar and covering his past life, the events of that happy day, and his plans for the future.

Let me digress to recall that by the time Roy was completing his Ph. D.

research, I knew I would retire from Rensselaer in 1984, and that my color science program, a one-man operation, would not be given the necessary support to continue. I had therefore begun to work with Franc Grum of Eastman Kodak, ISCC past president and an Adjunct Professor in my program, and with Richard S. Hunter, who had hoped to establish an endowed Professorship in color science, appearance, and technology at Rensselaer, to find a suitable location for the continuation and expansion of the work. Many of you know that such a program was soon established in the School of Photography at the Rochester Institute of Technology. Franc Grum took early retirement from Kodak to become the Hunter Professor and the director of the new program. The Munsell Color Foundation, having decided to disband, voted to endow the Munsell Color Science Laboratory as part of the new program. But Franc soon found that a second person would be needed to share the task of bringing the program to full fruition.

To return to Roy Berns, I had tried, where funding allowed, to expose my

students to a wide variety of scientific meetings in the color field. We were fortunate that Roy could accompany me to Sweden for an AIC conference on color order systems, where he presented preliminary results of his Ph. D. thesis research, and subsequently to the CIE congress in Amsterdam. There he met many in the international color community. I remember in particular that, in Sweden, the late Gunter Wyszecki, knowing of Grum's search for a second person to join the RIT program, listened to Roy's presentation of his research, leaned across me, and whispered to Franc: "There is your new professor for RIT; don't let him go anywhere else!"

And so it turned out. Roy joined the Munsell Color Science Laboratory as Assistant Professor in 1984. His primary responsibilities included academic curricula, industrial short courses and seminars, and research in color science, appearance, and technology.

In December, 1985, Franc Grum was tragically killed in an automobile accident. The full responsibility of directing the activities of the color program at RIT fell on Roy's shoulders. A lesser person could not, in my

opinion, have carried such a burden. I know that family life had to suffer more than Roy and Susan would have liked. But Roy survived, and the program survived and prospered. It was not until 1987, after a search that found, evaluated, and eliminated several other candidates, that Roy was appointed the Richard S. Hunter Professor of Color Science, Appearance and Technology, the position that recognized and rewarded his responsibilities. Promotion and tenure soon followed.

Roy has assumed a leadership role, not only in color-related activities on the RIT campus but in the broader national and international scenes as well. At RIT, the M.Sc. program envisioned by Franc Grum has been put into full action. It is anticipated that, in the very near future, the New York State Board of Regents will give final approval for a Ph. D. program in Imaging Science, of which the color program is now a part. This will be RIT's first Ph. D. program in any field, and it will be the first such program devoted in part directly to color science in the United States. (Even my students at Rensselaer got their Ph. D.'s in chemistry, not color science.) Roy's industrial short courses and seminars are the only ones in the country devoted to advanced topics in color science and have achieved a wide reputation. The research program of the Munsell Color Science Laboratory is turning out top-notch students and fine results in a wide range of topics that I shall turn to in a moment. In short, the ambitions of Grum and myself for the program have been bountifully fulfilled.

As evidence to support this statement, and the appropriateness of the selection of Roy by the Macbeth Award Committee, I shall give a small part of the information in the 1989 annual report of the Hunter Professorship and the Munsell Color Science Laboratory. The staff of the Laboratory has increased from an original three to 16: six faculty, staff, and visiting scholars, and ten students, eight at the graduate level. In addition to endowed funding (the Laboratory, the Hunter Professorship, the Grum Memorial Scholarship), funding in 1989 included grants from Mrs. Elizabeth Hunter, 3M, Kodak,

PPG, Du Pont, Xerox, Tektronix, Hewlett Packard, and the DOE. No less than a dozen different research topics were being studied, ranging from studies of color measurement, standardization, and color reproduction through visual studies of color differences, observer metamerism, and theories of color vision. Seven color courses are taught regularly as part of the RIT curriculum, and six continuing-education courses, on campus or in house, were taught in 1989. Two dozen companies sent representatives to visit the Laboratory, and Roy in turn visited a half dozen outside laboratories. Equipment in the Laboratory now includes an astounding 14 spectrophotometers, seven colorimeters, three each of glossmeters, densitometers, and spectroradiometers, and items of visual and display equipment too numerous to detail. The total publications of the Laboratory number 29 papers and nine technical reports, while 13 oral presentations are listed for 1989 alone!

In addition, Roy is taking an active role in national and international color-related activities. He has served the

ISCC as a Director and co-chairman of Interest Group I, and was co-chairman of last year's Williamsburg Conference, felt by its attendees to be among the best of those distinguished conferences in many years. He is on the Board of Directors of the Council for Optical Radiation Measurements (CORM), is a member of the Editorial Board of Color Research and Application, and is the chairman of a CIE Technical Committee on the measurement of the color of self-luminous displays. Last but far from least, as of last summer his personal list of publications ran to no less than 27 items. (When I was six years past my Ph. D., I had just five publications, only one related to color!)

I cannot help but feel I have not done justice to Roy Berns' accomplishments, but I have made this citation too long already. What pleases me most is that we are today honoring an outstanding young colorist at the beginning, not toward the end, of his career. I feel sure the Norman Macbeths, Senior and Junior, would agree with my pleasure in presenting to the ISCC Roy S. Berns.
Fred W. Billmeyer, Jr.

1991 ISCC GODLOVE AWARD

The Godlove Award is the most prestigious award bestowed by the Inter-Society Color Council to honor long-term contributions in the field of color. The Godlove Award was established in 1955 in memory of Dr. I. H. Godlove and is presented biannually, in odd numbered years, with the next award scheduled for presentation at the 1991 Inter-Society Color Council Annual Meeting.

Nominations for the 1991 Godlove Award are now being solicited. Candidates will be judged for their 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 the 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 either be a current or former member of the ISCC. All candidates must have at least five years of experience in their particular field of color. Requests for nomination forms should be directed to:

Joann M. Taylor
Godlove Award Committee Chairman
Tektronix, Inc.
P. O. Box 500, M/S 50-320
Beaverton, Oregon 97077
Telephone (503) 627-4911 FAX (503) 627-5502
E-Mail (CSNET) joannt@tekirl.labs.tek.com

CITATION FOR THE 1990 NICKERSON SERVICE AWARD: JOYCE S. DAVENPORT

The ISCC gives three major awards. The Nickerson Service Award is unique in that it is specifically for service to the Inter-Society Color Council itself and for furthering its aims. Another feature that distinguishes it from the two other awards is that it is named after a woman, Dorothy Nickerson, who was very dedicated to this society, serving as its first woman president in the early fifties. The first woman to serve as president after Dorothy Nickerson, some thirty years later, was Joyce Davenport.

Joyce brought to this organization the same spirit of dedication, serving in many capacities even before she was president. She served on many project committees, including some such as Committee 10, Color Aptitude Test and Committee 30, Color in the Building Industry which completed their work many years ago, helped I am sure, by her active participation. She served as co-chairman of Committee 25P, Strength of Colorants - Pigments. Note I use the term chairman, not chairperson. Joyce has often told me that "chairperson" is

not in the English dictionary. It may be in the American dictionary, but not English. Perhaps Joyce's biggest contribution in those days was Liaison to the Member-bodies. She knew every one of the member body delegations, keeping them informed of ISCC activities through the year, phoning the chairmen often to be familiar with their group's activities, and keeping the ISCC Board of Directors informed.

My first close association with Joyce was when in 1981 we served as program co-chairmen of the 50th Anniversary Meeting. I was still a relative rookie in those days and was impressed with the wide span of contacts Joyce had established. We wanted the program to be a sampling of the wide range of color activities represented by ISCC. Through her Member-body Liaison activities she could always come up with a speaker on every activity we could think of. We shared many successes and frustrations during that meeting. Three of our speakers were missing the morning of the symposium.

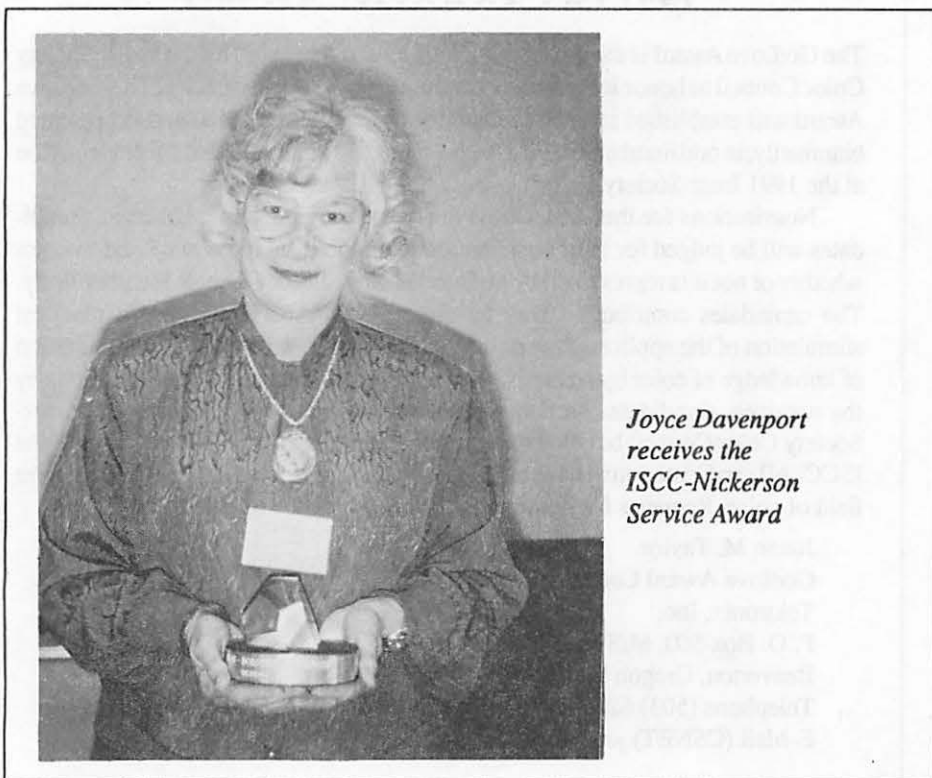
One came down with the flu. One whom Joyce had phoned the previous week with precise details of arrangements, went to Chicago instead of New York. A third got detained out of town on business. Joyce and I had to way-lay members in the hallways to fill in the empty spots in the program. I thought at that time that she deserved the Service Award. But then she got elected president and the award had to wait.

Her term as president brought a superb spirit of team-work to the administration of ISCC. I was honored to serve as president-elect in her administration. Months before she took office, we planned strategy, set goals, and picked people to help achieve those goals. I have heard from many members how they felt a renewed sense of belonging to ISCC starting in those days. A prime target was revitalization of the Project Committees. Today we see the results of many things initiated during her administration.

Joyce has furthered the aims of the Council beyond direct ISCC activities. Her many lectures on color to groups ranging from academia, to industry, to governmental agencies, to purely social, have helped fulfill ISCC goals. She has served in many offices including vice-president of the the Color Marketing Group, a member-body of ISCC.

And today, after having served as president of ISCC, have her contributions to ISCC stopped? No. Last year she co-chaired our Annual Meeting in Chicago. Even yesterday, she was helping out at the registration desk. She was selling ISCC pins, and with her characteristic zeal, wearing a pin in your lapel didn't stop her from trying to sell you another one! Joyce was so successful as president, we decided we couldn't wait another thirty years for a woman president. Since then, we have alternated every presidential term between men and women.

Dorothy Nickerson was very pleased that Joyce Davenport was the first woman to be elected president after her. I am sure that today Dorothy is proud that Joyce who exemplifies many of her own ideals and spirit of dedication has been chosen to receive the Nickerson Service Award. *Allan B. J. Rodrigues*



*Joyce Davenport
receives the
ISCC-Nickerson
Service Award*

COLOUR AND APPEARANCE IN FOLKLORE PRELIMINARY ANNOUNCEMENT AND CALL FOR PAPERS

A joint one-day meeting of the Folklore Society and the Colour Group (GB) will be held in London in the spring of 1991.

There are many non-technical aspects of colour which are important to our everyday life as human beings. Many family, community, and national traditions contain elements in which the use of the proper colour is mandatory and the incorrect use of colour and appearance can render the custom or belief valueless. These aspects change

with country, region, tribe and religion and the scope for contrast and comparison studies offers considerable challenge.

Colour is vital to a wide area of life: from wedding ceremonies to beliefs concerning plants and animals, from Bantu love letters to Mediterranean charms and amulets, from the dress of the Britannia coconut dancers to priestly robes, from Red Riding Hood to the white doves of Wales, from colour vocabulary to colour in folk religion.

Speakers will cover many of these

fascinating, even spectacular, topics. The meeting will also include a status report of the Folklore Society/Colour Group (GB) "Colour and Appearance in Folklore, Belief, and Legend" survey.

Please send offers of papers and requests for further information (when available) to: John Hutchings, 6 Queen's Road, Colmworth, Bedford, England, MK44 2LA.

John Hutchings

EDUCATION COUNCIL PLANS PUSH FOR CAREER RECRUITING, EDUCATION, INDUSTRY IMAGE PROGRAMS

The Education Council of the Graphic Arts Industry, Inc. has taken a major step toward becoming the nationally recognized industry clearinghouse for career information and efforts to enhance the image of graphic arts.

A statement of mission outlining the Council's purpose was unanimously approved at a meeting of the Board of Directors on January 26, 1990 in Chicago. The statement is:

"The mission of the Education Council of the Graphic Arts Industry, Inc. is to coordinate the programs of the members in the areas of recruitment, training/education and industry image and to take a leadership role in addressing unmet needs in these areas.

In fulfilling its mission, the Council shall have the following goals:

- A. To coordinate and facilitate development, distribution and dissemination of information about activities and materials which promote a broader understanding of the nature of careers in a modern graphic arts industry;
- B. to coordinate, promote and facilitate a national effort to develop a positive and professional image of the graphic arts within the industry and in the general public;
- C. to promote activities which relate to education, training, and recruitment for the graphic arts industry;
- D. to serve as a resource center for information on graphic arts education, training and recruitment;
- E. to coordinate, encourage, and recognize the improvement of quality programs and projects in graphic arts education, training, and recruitment;

- F. to identify unmet needs in education, training, and recruitment and encourage members to develop programs to meet these needs."

The Board announced appointment of an ad hoc committee, chaired by Council president Henry Schiele, to explore ways to implement the mission statement.

Among the members of the ad hoc committee will be representatives of the Graphic Arts Technical Foundation, National Association of Printers and Lithographers, National Printing Equipment & Supply Association and Printing Industries of America. The Board also formed a national image committee chaired by Cameron Hitchcock of DuPont Company.

The Education Council is an independent industry organization comprised of associations, businesses and educators. Founded in 1950 to coordinate graphic arts education and training programs, its activities include:

- administering the National Scholarship Trust Fund
- exhibiting at major education conferences
- producing and distributing career and graphic arts education information booklets to guidance counselors at more than 16,000 U.S. high schools annually.

The Council welcomes the membership and active participation of graphic arts organizations, businesses, educators and interested individuals. For more information, contact:

Henry Schiele, President
Schiele Graphics, Inc.
5831 Northwest Highway
Chicago, IL 60631
(312) 774-5858

Jack Simich, Managing Director
Education Council of the
Graphic Arts Ind., Inc.
4615 Forbes Avenue
Pittsburgh, PA 15213
(412) 621-6941

COLOR PRINCIPLES FOR GRAPHIC SYSTEMS SHORT COURSE OFFERED BY IMCOTEK, INC.

Imcotek, Inc. will present a three day short course entitled *Color Principles for Graphic Systems*. The course will be given June 4 to 6, 1990 at the Stouffere Bedford Glen Hotel, Bedford (Boston), Massachusetts. The course fee is \$895.00 per person.

The objective of the course is to provide a basic understanding of color - specification, reproduction, appearance and imaging systems — as applied to color graphics generation. The course will emphasize practical approaches to achieving true color graphics and is designed for programmers, scientists, engineers and technical managers who are concerned with any aspect of color graphics. It will be particularly valuable for people involved in desktop publishing, color document scanning, color graphics, color proofing, color printing technologies, color product design and color imaging materials.

The course will be directed by Peter G. Engeldrum, President of Imcotek, Inc. Along with Mr. Engeldrum, Dr. Roy Berns, Director of the Munsell Color Science Laboratory, at the Rochester Institute of Technology, and Ms. Carol Keller, Manager Electronic Imaging Systems, Polaroid Corporation, will be featured as lecturers.

For more information please contact Peter G. Engeldrum, Imcotek, Inc., P.O. Box 66, Bloomfield, CT 06002 or call (202) 242-6396. *Imcotek Press Release*

INTERLABORATORY TESTING PROGRAM EVALUATES COLOR MEASUREMENT DATA

Collaborative Testing Services Inc announces the beginning of another year of interlaboratory testing as a definitive program for evaluating instrumental color measurements. For information regarding the cost of this service and the specific interlaboratory programs available, contact Collaborative Testing Services Inc (CTS), P.O. Box 1049, Herndon, Virginia 22070. Individual laboratory results are strictly confidential but the report received will allow you to determine how well your measurements are agreeing with other laboratories and with respect to established standards. A free copy of a typical report is available on request to Collaborative Testing.

*Tammy Meyers,
CTS Marketing Services*

"SPECTACULAR" COLOR TERMINOLOGY

In its Newsletter, around the end of last year, a former ISCC Member-Body (which I shall mercifully not identify) published a short article on color measurement that contained the following paragraph, copied verbatim, in which I have capitalized certain words for emphasis. In these days of concern over the biosphere and a tendency to call just about anything spectacular, I was bemused about all I thought I knew about color, but obviously didn't.

"Two crucial aspects of instrumental design and configuration were also studied. A comparison of BIODIRECTIONAL (45/0 and 0/45) and integrating sphere (diffuse/normal) designs for light collection resulted in equal correlation with visual assessments, so that either design should be allowed. The question of whether the SPECTACULAR (reflected) component of sphere measurements should be included or excluded was answered in favor of inclusion. Results from tests in which the SPECTACULAR component was included proved to be ERROR SPACE IS ABOUT 40 PERCENT GREATER UNDER THE L*a*b* SYSTEM. MAINLY BE-much more reproducible."

Setting aside the inclusion of two totally unrelated lines, didn't there used to be the practice of authors proofreading their work? *Fred W. Billmeyer, Jr*

REMINDER FROM THE EDITOR !

The deadline for inclusion in the ISCC Newsletter is the 15th of the even numbered months preceding the publication date: i.e., February (for the March-April issue), April (for May-June), June (for July- August), August (for September-October), October (for November-December) and December (for January-February). Items received after that deadline will be delayed for two more months. Occasionally, it is possible to extend the acceptance date but don't count on it. We are trying desperately to provide more timely publication and mailing of the News. Having your information included in the issue of your choice is a function of *your timely submission*.

CELEBRATE LOUISE Z. STAHL

In honor of Women's History Month Moore College of Art and Design celebrated Louise Z. Stahl. In her 43 years as a professor at Moore, Louise Zimmerman Stahl has touched the lives of thousands of students and colleagues. She has set standards of excellence as both a teacher and an artist.

Louise Stahl's original color theory research was based on her translation of color theories from German into English. Her advanced color course, *Color in Pigment and Light*, explores the progression from color theory to the sophisticated computerized science of color. *Theory into Practice*, a lecture and slide presentation which traced the history of Louise Z. Stahl's development as a teacher and artist was presented on Sunday, March 18, 1990. It coincided with an exhibition of her work and a reception in her honor. The ISCC would like to join with Moore to honor one of its members, Louise Z. Stahl. *Ellen Carter*

PRAKESH 1991 INTERNATIONAL EXHIBITION ON LIGHTING TECHNOLOGY

The Indian Society of Lighting Engineers, which is the Indian National Committee of the CIE, will hold an international conference and exhibition October 7-13, 1991, at the international fair grounds in New Delhi, India. It is being called "Prakesh" 1991, the word Prakesh meaning, in Indian, both lighting and enlightenment. The aims of the conference are to create awareness of the close supporting role that lighting plays in the development of a society.

This will be the first international lighting program organized in India, and is receiving wide enthusiasm and support. This can be considered a call for speakers, papers, and exhibitors, as well as an invitation to all to attend. For further information, contact the Conference Organisers, the Indian Society of Lighting Engineers, c/o Philips India, 7th Floor, Hindustan Times, Kasturba Gandhi Marg, New Dehli 110 001, India.

On the social side, New Dehli is the capital of India and an ideal starting point for a business cum holiday in that country. Air India has been designated the official carrier, and Sita World Travels (India) Private Ltd. the official travel agents. *Fred W. Billmeyer, Jr.*

NEWS FROM MEMBER BODIES

AMERICAN ASSOCIATION OF TEXTILE CHEMISTS AND COLORISTS (AATCC)



The CMC Subcommittee was organized in 1988 for the purpose of disseminating new technology to American industry. Our first major activity was to take the new British Standard BS6923:1988 "Calculation of Small Colour Differences" and create an "Americanized" version for an AATCC Test Method.

That goal was achieved in July, 1989 with the approval of Test Method 173-1989 "CMC: Calculation of Small Color Differences for Acceptability".

Our next goal was to present the new American CMC Test Method to ISO for consideration as an International Standard. The Fifteenth Meeting of ISO/TC38/SC1 was held on August 21-24, 1989 in Williamsburg, Virginia. Three members of our CMC Subcommittee were part of the American Delegation. As expected, the British Delegation, headed by Dr. Brian Rigg of Bradford University, had the same idea of presenting their Standard for ISO consideration. The two delegations were then instructed to collaborate for the purpose of creating one unified ISO proposal. After many hours of meeting, the two delegations reached agreement and ISO Document TC/38/SC1 N762 was created. Titled "Combined UK/USA Proposal: A Method for Calculation of Small Colour Differences", the new document is now an ISO Test Under Consideration.

Our final goal is to create a "CMC Users Guide". This document will not bear an official AATCC Test Method Status, but rather will be a committee informational publication. Its purpose will be to inform the reader as to the background of CMC, ways of implementing, when and how to adjust "l:c" and "CF" with answers provided by noted authorities.

Richard Harold, Chairman, CMC Subcommittee

CIE NEWS

Division 1 – Vision and Colour



Five new technical committees were proposed: 1) Individual Variation in

Heterchromatic Brightness Matching, 2) Industrial Colour Difference Evaluation, 3) Parameters Affecting Colour Difference Evaluation, 4) Colour Difference Evaluation in Self-Luminous Displays, and 5) Colour Difference Evaluation in Non-Daylight Adaptation.

News from the existing technical committees is as follows:

Professor Glenn Fry was provisionally accepted to chair TC 1-04 Physiologically based system of colour specifications. TC 1-08 Colour difference evaluation was disbanded. TC 1-10 Colorimetry of self-luminous displays concluded its work by producing an annotated bibliography that will be published as a CIE Technical Report. TC 1-13 Colour appearance analysis continues to study two colour appearance models - the Hunt Model and the Nayatani Model. The committee hopes to produce a final report in 1991. TC 1-22 Engineering applications of brightness scales was disbanded, however a reporter was nominated to follow further progress. TC 1-23 Visual acuity was established and started work towards a literature survey. And TC 1-25 Fundamentals of discomfort glare has just about completed its annotated bibliography. Now it is producing a state-of-the-art report to be ready for the quadrennial meeting in 1991.

Division 2 – Physical Measurement of Light and Radiation

TC 2-02 Measurement of luminous flux has published CIE Technical Report Number 84. TC 2-17 Recommendation for integrated irradiance and spectral distribution of simulated solar radiation has published the first of a two part document as CIE Technical Report Number 85. *Ellen Carter*

THE 22ND SESSION OF THE CIE, JULY 2-22, 1991, MELBOURNE, AUSTRALIA

The 22nd Session of the CIE will be held in Melbourne, Australia, from July 2nd to 11th, 1991 at the University of Melbourne. The session will be divided into two parts, the conference (July 2-5) and the technical meetings (July 8-11). The conference has provision for three Invited Papers, 18 Presented Papers, 45 Presented Posters as well as an additional number of Displayed Posters and six Workshops. The Presented Papers and Posters will be given in three parallel Sessions. Ample room will be available for the display of all accepted Poster Papers, including those presented in the mornings throughout the three days of the Conference.

Prospective contributors are invited to submit papers dealing with new results in the fields of light and lighting. The subjects of the papers should be relevant to the work and the terms of reference of the seven CIE Divisions and their Technical Commit-

tees. Contributions which have been published before, will not be accepted. Papers dealing with questions of direct concern to the work of the Divisions will get priority. Prospective contributors should contact the National Committee of their country for application forms. A 400-600 word summary must be submitted by April 1, 1990. Based on the summary the Council will make a decision on the acceptance of the paper and whether it will be given orally in a Paper or Presented Poster Session or as a Displayed Poster.

For the United States, Questions or applications should be sent to:

Dr. Jack J. Hsia
National Institute of
Standards and Technology
B306/220
Gaithersburg, MD 20899
Telephone (301) 975-2342
FAX (301) 975-4091

GEMOLOGICAL INSTITUTE OF AMERICA (GIA)

The GIA has made two new appointments in the area of research and development. At GIA's Santa Monica, California, headquarters, Robert C. Kammerling has been named Director of Technical Development. He will be involved with expanded research and development activities, coordinating efforts between education and research and various technical projects. Dr. Ilene Reinitz has joined the GIA Research Department in New York Gem Trade Laboratory. She will be working in the areas of colored diamonds, gem property database development, and sensor measurement devices.

The Gems and Gemology Winter issue focuses on emerald and gold treasures of the Spanish galleon Nuestra Senora de Atocha. "The jewelry is an example of superb Old World craftsmanship, with lost-wax casting, chain

drawing, stone setting and engraving that equal anything seen today" said editor Alice Keller. The issue is available directly from GIA, call (800) 421-7250, ext. 201.

The GIA continues to offer courses on Pearls, Fracture-Filled Diamonds, and Colored Stone Grading. For information on the Gemology Enrichment Program and Gemology Update Seminars, call GIA at (800) 421-7250 ext. 292 or from outside the U. S. call (213) 829-2991, ext. 292.

FEDERATION OF SOCIETIES FOR COATINGS TECHNOLOGY (FSCT)

The new headquarters of the FSCT was launched with groundbreaking ceremonies on December 7, 1989, in Blue Bell, Pennsylvania. Construction of the new headquarters 15 miles northwest of Philadelphia is scheduled for completion in spring of 1990.

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

A Guide To Standards written/published by Albert L. Batik and Distributed by ASTM is now available in limited supply. This useful guide is a clearly-written introduction to voluntary consensus standards, for the individual as well as the organization that puts standards on its agenda.

The "Standards Developers" chapter provides addresses and brief descriptions for a wide range of national and international standards development organization. Other chapters include:

- The History of Standards
- Development of Standards
- Importance and Application of Standards
- Problems in Using Standards
- Correcting Standards Problems
- Involvement in Standards
- Critical Source Information

Published in 1990; 129 pages; soft cover. List price: \$12.00. Member's price \$10.00 ISBN 0-9622523-0-1 PCN: 13-500089-64 *ASTM News Release*

AMERICAN CERAMIC SOCIETY: ELECTRONICS DIVISION

(ACERS/EL. DIV)

**in conjunction with the
SECOND INTERNATIONAL
CERAMIC SCIENCE AND
TECHNOLOGY CONGRESS:
ORLANDO, FL. November 12-
15, 1990**

CALL FOR PAPERS

Session Topics: Dielectric Compositions; Piezoelectrics, Pyroelectrics, Ferroelectrics; Actuators & Electrostrictive Materials; Electronic Packaging Materials; Multilayer Structures; Related Topics. Contact Prof. Amar S. Bhalla, Materials Research Laboratory, The Pennsylvania State University, University Park, PA 16802; (814) 865-9232 FAX (814) 865-2326.

GRAPHIC ARTS TECHNICAL FOUNDATION (GATF)

SOCIETY OF FELLOWS (SOF) of GATF requests Nominations for REED/BERBER AWARDS



The SOF of GATF is polling the

industry for nominations for the distinguished Robert F. Reed Technology Medal and Naomi Berber Memorial Award.

The deadline for responses is July 31, 1990 to James A. White at GATF. The awards will be presented at a banquet in their honor during the GATF Fall Membership Meetings on November 4-7, 1990 at the Phoenician in Scottsdale, Ariz.

Society chairman Henry F. Schiele made the announcement, indicating that candidates will be evaluated according to criteria established for each award. In his call for nominations, Schiele said that the achievement of the awards' namesakes, Robert F. Reed and Naomi Berber, who were both active Society members, are the benchmarks of notable accomplishment.

In commemoration of these industry high achievers, the Society annually presents the Reed/Berber Awards, which allow the industry to recognize and reward excellence, said Schiele.

The Reed Medal acknowledges an individual who has made a major contribution to the technical and scientific development of the graphic communications industries. The medal perpetuates the memory of Robert F. Reed (1890-1971), acknowledged "Dean of Lithography" and first research director of the Lithographic Technical Foundation, predecessor of GATF.

Criteria that must be met for the Reed Medal are:

- A nominee must be a technically or scientifically oriented person who has worked as an engineer or scientist in the graphic communications industries for a period of ten or more years.
- A nominee must have an outstanding record of technical and scientific accomplishments that has measurably aided the scientific development of

graphic communications.

- It is preferred that such activities be extended over a period of time and not confined to one project or development.
- There is no limitation of age, sex, race, geographic location, or required membership in GATF by the nominee's company.

The Berber Award is given in memory of Naomi Berber (1905-1973), long-time administrative director of GATF. Regarded as the "First Lady of the Foundation", Berber was also the first woman to be elected to the Society of Fellows.

Criteria that must be met for the Berber award are:

- A nominee must have worked in the graphic communications industries for a period of ten or more years.
- A nominee will have an outstanding record of accomplishments that demonstrate, in a measurable way, unusual contribution toward the development of the graphic communications industries; such contributions could be in the form of extraordinary leadership, direction, and/or support of programs or projects that have furthered the interests of the graphic communications industries.
- A nominee's activities will have extended over a period of time and the contribution need not have been confined to a single project, development, or program.
- There is no limitation of age, sex, race, geographic location, or required membership in GATF by the nominee's company.

Nominations for either award may be offered by any representative of a member company of GATF or a member of the GATF Society of Fellows. Detailed biographical information must accompany all nominations.

All nominations must be received by the GATF Society of Fellows no later

than July, 1990. Address all letters of nomination to: Robert F. Reed Technology Medal Committee or Naomi Berber Memorial Award Committee, GATF Society of Fellows, Graphic Arts Technical Foundation, 4615 Forbes Avenue, Pittsburgh, Pa 15213.

More information is available by contacting James A. White, membership marketing manager at GATF at the above-listed address, or phone: (412) 621-6941; FAX: (412) 621-3049.

Audiovisual Training Materials Catalog Updated

GATF has released a free four-color catalog of twenty-four audiovisual training packages for printing processes, procedures, and environmental concerns.

Most GATF AV packages listed in this catalog focus on particular aspects of lithography, but there are exceptions such as a package helping employees understand the purpose and scope of the Occupational Safety and Health Administration (OSHA) Hazard Communication Standard. GATF also provides an AV series on producing a printed piece.

Each AV package consists of 35-mm color slides, a cassette tape, and a narrative booklet illustrated with black-and-white halftones of each slide. Most audiovisuals are also available in Spanish.

A copy of GATF's *Audiovisual Catalog* is available by contacting Terrence M. Mahoney, assistant director of Promotions, at GATF, 4615 Forbes Ave., Pittsburgh, Pa 15213; Telephone (412) 621-6941; or FAX: (412) 621-3049. *GATF News Release*

COLOR RESEARCH AND APPLICATION:

In This Issue: June 1990

The problems of an urban settlement for low income immigrant populations are many, particularly when there is discouragement and distrust. When such a community is found in decaying housing, divided from the surrounding inhabitants, and distrustful of each other, can the appropriate use of color be an influence in turning around the spirit and thus the actions of the community? Theano Fanny Tosca takes on this challenge in the suburb of Thessaloniki, Greece. In "Coexisting or mingling; the visual aspect of the problem in the urban context", she describes experiments in which she studies and evaluates the community's use of public spaces and their color preferences for building exteriors. Then in coloration proposals resulting from her experiments, she attempts to unify the residents as a group and with the surrounding population through an environment structured on the basis of blending of individual color tastes.

One can imagine the multitude of variations which would result if an artist tried to reproduce a painting by knowing the quantity of each of three pigments which he needs to mix to produce the colors in the work, but not exact pigments other than by hue name — red, yellow, or blue. A similar situation can occur in computer generated imagery.

With the proliferation of computer generated color images, there is an increasing desire to put these images in the form of hard copy. Usually hard copy should appear as similar as possible to the image on the computer display screen. To attain this result, there must be an unambiguous description of the color on the screen. While CIE tristimulus values provide this description, in practice, color images are stored in files according to their RGB triplets. More information is required to specify tristimulus values. Often the user does not know the phosphor set of the display used to generate the image files, nor the white point of the display. How big a difference does this make? In "Analysis of White Point and Phosphor Set Differ-

CAREER DISCOVERY WORKSHOPS

The New York School of Interior Design is holding two workshops dealing with design as a professional career. Located in New York City, the school is an independent non-profit college established in 1916 and chartered by the New York State Board of Regents. The school grants a Bachelor of Fine arts degree, a Three-Year Design Diploma, an Associate in Applied Science degree and a Certificate in Decoration and Design.

Workshop I: Introduction to Interior Design is being held July 23rd to August 9th. The workshop seeks to stimulate your creativity, develop your imagination, heighten your cultural awareness, and firmly focus your professional career direction.

Workshop II: Exploring a Design Career is based on the premise that while the practice of design is a desirable undertaking, repositioning yourself for success in the field requires carefully laid plans, professional guidance and support and a realistic assessment of the probability for personal success. Through lectures, small group seminars, studio projects, field trips and individual consultations, each workshop participant is given the tools for assessing his/her personal design career direction. This workshop also runs July 24 through August 9th.

To receive details about either program or the School and its Gallery exhibition schedule, write to the school at 155 E. 56th Street, New York, New York 10022 or call (212)753-5365. *Ellen Carter*

ences of CRT Displays", Engeldrum and Ingraham report on their investigation of the color error, or color difference, for a variety of phosphor sets and white point settings.

Earlier this year Kawabata and Aiba (Vol. 15, Issue 1) examined the critical durations for temporal integration at threshold for bichromatically-mixed test lights for observers with normal color vision. In this issue Kawabata extends his studies to observers with defective color vision. In "Temporal Integration Properties for Bichromatically-Mixed Lights in Color-Anomalous Vision" he uses the differences in temporal integration properties in deuteranope color defective observers to support the suggestion that dichromats should always detect red/green mixed lights via a non-opponent system.

George Santayana said, "Those who cannot remember the past are condemned to repeat it." In this case the history is that in 1976 the CIE recommended two color difference formulae to promote uniformity of practice pending the development of a better formula. Alan Robertson reviews the discussions

that lead to that recommendation in his article "Historic Development of CIE Recommended Color Difference Equations". The reasons that lead the CIE to its decision help explain the increased success of this color difference over the 1964 Recommendation. In addition Robertson describes some of the misconceptions which have arisen concerning the distinction between the two formulae and the circumstances under which they should be used. In the development and selection of future color difference equations, let us fully understand the ones which have been adopted in the past.

In another brief look backward, Leo M. Hurvich describes events surrounding a picture that was taken at the 1958 Symposium on "The Fundamental Mechanisms of the Chromatic Discrimination in Animals and Man" in Paris, France. Almost all the participants are included in the photograph. Can you help us identify the man indicated as #27 in the photograph?
Ellen Carter, Editor, Color Research & Application

CALENDAR

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

1990

SPSE 43RD ANNUAL CONFERENCE, May 20-25

Rochester Institute of Technology Center for Imaging Science, with housing at the Holiday Inn-Rochester South, Rochester, New York. Information: Pat Forness, (703) 642-9090.

RIT COLORIMETRY COURSE, Jun. 12-14

An intensive course for scientists & engineers at Rochester Institute of Technology, Rochester, New York. Information: Colleen McCabe, (716) 475-7189.

ASTM COMMITTEE D-1 ON PAINT, Jun. 17-20

Hyatt Regency Hotel, Union Square San Francisco, California. Information: David Bradley, (215) 299-5504.

ASTM E-12 ON APPEARANCE, Jun 18-20

San Francisco, California. Information: Sharon Kauffman, (215) 299-5599.

INTERNATIONAL INTERCOMPARISON OF REGULAR TRANSMITTANCE SCALES

by K. L. Eckerle, E. Sutter, G. H. C. Freeman, G. Andor, and L. Fillinger. *Metrologia* 27: 33-38 (1990)

An intercomparison of the regular spectral transmittance scales of NIST, Gaithersburg, MD. (USA); PTB, Braunschweig (FRG); NPL, Teddington, Middlesex (UK); and OMH, Budapest (H) was accomplished using three sets of neutral glass filters with transmittances ranging from approximately 0.92 to 0.001. The differences among the results from the reference spectrophotometers of the laboratories was generally smaller than the total uncertainty of the interchange. The relative total uncertainty ranges from 0.05% to 0.75% for transmittances from 0.92 to 0.001. The sample-induced error was large - contributing 40% or more of the total except in a few cases. *Ellen Carter*

OSA TOPICAL MEETING, Jul. 11-13, 1990

The Optical Society of America Topical Meeting on Light and Color in the Open Air, Georgetown University Conference Center, Washington, District of Columbia. Information: OSA, (202) 223-8130.

IES ANNUAL CONFERENCE, Jul. 29-Aug. 2

Omni Inner Harbor Hotel, Baltimore, Maryland. Information: Diane Darrow, (212) 705-7269.

AIC INTERIM MEETING, COLOR MEASUREMENT, Sep. 3-5

Color Instrumentation, Federal Institute for Materials Science and Testing (BAM), Berlin, Federal Republic of Germany. Information: Prof. Dr. Heinz Terstiege, BAM, Unter den Eichen 87, D-1000 Berlin 45, FRG.

COLOR MARKETING GROUP FALL MEETING, Sep. 23-25

Hyatt Regency San Antonio, San Antonio, Texas. Information: Nancy Burns, (703) 528-7666.

SPSE 6TH INTERNATIONAL CONGRESS, Oct. 21-26

Advances in Non-Impact Printing Technologies with Exhibit, Orlando, Florida. Information: Pam Forness, (703) 642-9090.

USNC/CIE ANNUAL MEETING, Oct. 28-30

U.S. National Committee of CIE, Keller Conference Center, The Pennsylvania State University, University Park, Pennsylvania. Information: Dr. Craig Bernecker, (814)863-2041.

FSCT, Oct.29-31

Federation of Societies for Coatings Technology, 68th Annual Meeting and 55th Paint Industries's Show, Convention Center, Washington, D.C. Information: (215) 545-1506.

OSA ANNUAL MEETING '90, Nov. 4-9

Boston, Massachusetts. Information: Optical Society of America, 1816 Jefferson Place, N.W., Washington, D.C. 20036. (202) 223-0920.

1991

AIC INTERIM SYMPOSIUM, COLOUR & LIGHT, Jun. 26-28

Sidney Australia. Information: The Colour Society of Australia, P.O. Box 63, Concord West, N.S.W. 2138, Australia.

CIE 22ND SESSION, Jul. 2-11

International Commission On Illumination, Melbourne, Australia. Information: Dr. J. D. Schanda, Central Bureau, A-1030 Vienna, Kegelgasse 27 Austria, or Dr. Jack Hsia, (301) 975-2342.

MEMBERSHIP IN THE ISCC

IS OPEN TO EVERYONE INTERESTED IN COLOR!!

For further information and membership application, please fill out the items below and mail to the address shown.

Your name _____

Address _____

City _____ State _____ Zip _____

MAIL TO: Ms. Therese R. Commerford, Secretary ISCC
USARMY Natick RD&E Center
ATTN: STRNC-ITC
Natick, MA 01760-5019

The ISCC is composed of both individual members and member bodies who have an interest in color. If you are a member of a national organization that might be interested in this affiliation, please indicate its name below and we will get in touch with you about it.

Organization _____

Your Phone No. (daytime) (____) _____

NEWSLETTER EDITOR:

Mrs. Bonnie K. Swenholt

Send material for publication (photos should be black and white if possible) to the editor at:

5717 Gulick Rd.
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If possible, 5 1/4 inch diskette with ASCII text file for MSDOS, or send via MODEM:

Tel. (716) 229-5925

Or send material to Mr. Michael Hammel at:

98 Grand View Drive
Fairport, NY 14450

Tel. (716) 223-1823

For hard copy transmission, FAX to

(716) 425-2411.

Or send to Dr. Ellen Carter:

2509 N. Utah St.

Arlington, VA 22207

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ISCC MEMBER-BODIES

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American Chemical Society (ACS)	Graphic Arts Technical Foundation (GATF)
American College of Prosthodontists (ACP)	Illuminating Engineering Society (IES)
American Psychological Association (APA)	National Artists Equity Association (NAEA)
American Society for Testing and Materials (ASTM)	National Association of Printing Ink Manufacturers (NAPIM)
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