Proceedings of AIC 2008

The Proceedings of the Interim Meeting AIC 2008 “Colour – Effects & Affects”, including 121 papers (45 from oral presentations and 76 from poster presentations), are now freely available in PDF format at the AIC website. See www.aic-color.org.

AIC 2009, Sydney

Early bird registration deadline has been extended until 24 July 2009. Due to the overwhelming number of refereed papers received for AIC 2009 and the processes involved, the AIC 2009 Early Bird Registration Deadline has been extended! Be sure to register for the 11th Congress of the International Colour Association (AIC) before 24 July 2009 to take advantage of the Early Bird Registration Fee! This deadline will not be further extended. Do not miss out on this great opportunity to attend this stimulating and exciting Congress and the opportunity to broaden your understanding of colour. With over 270 paper submissions covering the latest research from all disciplines of colour from 30 countries, the Congress is sure to be a truly global colour event!

Attention authors: Note that the author registration deadline is 17 July 2009. All presenters must register by this deadline to ensure their place in the programme. See www.aic2009.org for updated information.

Other color meetings

**Colour and the Moving Image: History, Theory, Aesthetics, Archive**
Bristol, UK, 10-12 July 2009.
Info: www.bristol.ac.uk/drama/colour_conference

**First Mexican Color Meeting**
Amexinc, the AIC regular member from Mexico, organizes a color meeting, 10-12 September 2009, Mexico City.
**Venue:** Antiguo Palacio de Medicina, Republica de Brasil #33, at Plaza Santo Domingo, in the historical center of Mexico DF.
**Topics:** color in relation to: lighting, pigments, medicine, vision, psychology, culture, advertising, education, ethnography, anthropology, architecture, interior design, designs, arts, technology.
Info: www.encuentromexicanodelcolor.com

**Gruppo del Colore, 5th National Meeting**
Palermo, Italy, 7-9 October 2009, Centro Regionale per la Progettazione e il Restauro, Palazzo Montalbo.
Info: www.gruppodelcolore.it

**Color Textile 2009**
National Academy of Fine Arts, Sofia, Bulgaria, 5-6 November 2009.
**Subjects:** instrumental and visual measurement of color, psychological aspects of color, investigation of dyes and pigments, instrumental dispensing of color, art textile and fashion design, assessment of quality of coloration, standards, ecology, marketing, management, information and communication technologies.
Info: colorgroup@abv.bg, textile@mail.bg, textile_bg@abv.bg
Web: http://blog.cvetovete.info
IS&T/SID’s 17th Color Imaging Conference
Albuquerque, New Mexico, 9–13 November 2009.
Ever since its creation 16 years ago, CIC has been a showcase of the latest advances in color imaging science and engineering and has served as the principal international forum for color scientists, technologists, and students. Technical papers cover, but are not limited to the following areas: color theory, color in devices, color in systems, color in illumination, and specific color applications.
See www.imaging.org/conferences/cic17 or contact cic17@imaging.org.
Diana Gonzalez, IS&T Conference Program Manager, 7003 Kilworth Lane, Springfield, VA 22515, USA. Tel. 703-642-9090 x106, fax 703-642-9094.

Anders Hård has passed away
Doctor honoris causa and color researcher Anders Hård passed away 6th March 2009 at the age of 86.
In the early sixties he started the research about how the human being perceives color. The aim was to develop a universal language to denote and describe colors. The unique approach—his phenomenological way of looking upon colors—made it possible for him to verify theories that Ewald Hering had published almost hundred years earlier. After several years of psychophysical research Hård in collaboration with Gunnar Tonnquist and Lars Sivik were able to present a color order and scaling system named the NCS - Natural Color System, and a color atlas.
After the Scandinavian Institute was founded in 1978 he was working full time with color research and color education. He continued to conduct interdisciplinary research on color and spread knowledge about this subject to practitioners from a wide variety of fields. He was associate research professor at the environmental design department of the architectural section at Chalmers University of Technology. Research about color did engage him far after he was retired.
In the sixties, Anders was one of the forerunners of the AIC, which had its first congress in Stockholm 1969. He had his first paper about NCS at the color congress in Luzern 1965 and since then he had lectured and given papers at most of the AIC congresses and meetings. He arranged the most appreciated and memorable AIC Forsius Symposium on Color Systems in Kungälv 1983.
For the scientific work, Hård together with Tonnquist and Sivik got the AIC Judd Award in 1997.
He was curious and followed color science to his death. He attended the AIC Interim Meeting 2008 in Stockholm, and his latest work is published in the new book Colour for architecture today by Byron Mikellides. We keep his lifework in mind.

Professor Rikard Küller
From: Prof. Dr. Maria João Durão
President of the Associação Portuguesa da Cor
On behalf of the Associação Portuguesa da Cor-APCOR I would like share with you the sentiments for the loss of Sweden’s eminent academic and colour investigator, Professor Rikard Küller.
During the lectures held within the Master Course of Colour in Architecture at the Faculty of Architecture, Lisbon Technical University, Professor Emeritus Byron Mikellides created a link—in the mind and the heart—with Professor Rikard Küller’s research, through the presentation of his conceptual affiliations as well as those that are only made possible when based on respect and friendship.
Professor Rikard Küller’s extensive and profound work covers essential aspects of colour and light in the environment, from the study of how colour and light impacts the perception of a room to the preservation of the well being of human beings in regard to the broad bio-cultural condition.
We know that advances in any field of knowledge build on what went before, and therefore we are all always “on the shoulders of giants”, and therefore, Professor Rikard Küller’s memory will be honoured by all of us who treasure his work as seeds for further study.
Dear AIC regular members!

We invite you to the 11th AIC Congress in Sydney, Australia. Here the AIC will have its General Assembly which is the most important opportunity to discuss AIC matters, and to elect the Vice-President, Secretary/Treasurer, and the 4 ordinary members of the Executive Committee for the next four years.

Below you can find the list of candidates we have received so far, and their personal details.

Additional candidacies can be received up to the end of July 2009. Please, if you are planning to propose some candidate, send the nomination together with a short CV (about 10-15 lines) plus some endorsement letter or message from other regular member as soon as possible, to: caivano@fadu.uba.ar, berit.bergstrom@ncscolour.com and jromero@ugr.es.

**PRESIDENT:**

In accordance with the AIC statutes, the retiring Vice-President will become president (no election needed):

- **Berit BERGSTROM** (Sweden) (female)
  Secretary of the Swedish Colour Centre Foundation.
  Managing director and teacher for the Scandinavian Colour School, Scandinavian Colour Institute, Sweden.
  Chairperson of the AIC Study Group on Color Education.
  Chair of the organizing committee of the AIC 2008 Interim Meeting held in Stockholm.

**VICE PRESIDENT (candidates):**

The new Vice-President has to be elected. Two candidacies have been received:

- **Roy BERNS** (USA) (male)
  Nominated by the Inter-Society Color Council.
  Dr. Roy S. Berns is the Richard S. Hunter Professor in Color Science, Appearance, and Technology and Director of the Munsell Color Science Laboratory within the Center for Imaging Science at Rochester Institute of Technology, USA.
  He received B.S. and M.S. degrees in Textiles from the University of California at Davis and a Ph.D. degree in Chemistry from Rensselaer Polytechnic Institute (RPI). At RPI, he studied under Dr. Fred Billmeyer, Jr. in the Rensselaer Color Measurement Laboratory.
  Berns has received scientific achievement awards from the Inter-Society Color Council (Macbeth Award), the Society of Imaging Science and Technology (Journal Award, and Raymond C. Bowman Award), and the Colour Group of Great Britain (Newton Medal). He is a member of the Executive Committee of the International Color Association and is active in the International Commission on Illumination (CIE).
  He is the author of the third edition of *Billmeyer and Saltzman’s Principles of Color Technology*, as well as an author of over 200 publications.
  Berns' main research focus is using color and imaging sciences for the visual arts, particularly paintings, including: 3-D imaging and computer-graphics rendering; spectral-based imaging, archiving, and reproduction; pigment mapping; visible-fluorescence imaging, colorant selection for inpainting, digital rejuvenation, and image rendering as a function of object and reproduction sizes. This research is collaborative with the Museum of Modern Art, New York; the National Gallery of Art, Washington DC; and the Van Gogh Museum, Amsterdam. The principal sponsor is the Andrew W. Mellon Foundation. At RIT, Berns developed both M.S. and Ph.D. degree programs in Color Science and established the Macbeth-Engel, Grum, Saltzman, and DuPont Fellowships, all in color science.

- **Javier ROMERO** (Spain) (male)
  Nominated by the Spanish Color Committee.
  Endorsed by Argentina.
  Education: Msc in Physics, University of Granada, Spain, 1979. PhD, University of Granada, Spain, 1984.
  Professor Department of Optics, Faculty of Sciences, University of Granada, since 1993.
Activities in relation to the AIC, the CIE, and the Spanish Color Committee:
2006-2009: Secretary-Treasurer of the AIC.
1998-2001: Member of the Executive Committee of the AIC.
1991-1994: Member of the Technical Committee of TC6-17 (CIE).
General Chairman of the Organizing Committee of the X International Color Congress AIC 05, Granada, 2005.
Teaching activities:
1979-continues: In Master and Bachelor degrees (courses in Spanish): Optics, Physiological Optics, Photonics.
Chairman of graduate and post-graduate courses on Optics, Vision and Colorimetry.
Administration activities: 2008-2011: Head of the Scientific Instrumentation Center, University of Granada.

SECRETARY/TREASURER (candidate):
The new Secretary/Treasurer has to be elected. One candidacy has been received:

• Nick HARKNESS (Australia) (male)
Nominated by the Color Society of Australia.
Born 1947.
Teaching Natural Colour System®, Enmore Design Centre, Sydney Institute of Technology, current.
Foundation member of the Colour Society of Australia, National Secretary of CSA 2001.
Chair of the Colour Society of Australia Bid Committee AIC 2009 Congress.
Ordinary member of the AIC executive committee, elected in 2005, until December 2009.

ORDINARY MEMBERS (appointed member):
From the UK, organizer of AIC 2013, the Colour Group has sent a letter dated 17 April 2009 proposing to appoint:

• Lindsay MacDONALD (UK) (male)
The AIC-Executive Committee approved the appointment. No election needed.
Lindsay MacDonald is Professor of Digital Media at the London College of Communication. His research interests are focused on colour imaging science, especially how the 3D surfaces of materials affect their colour appearance. His degrees from Sydney University were in Physics and Electrical Engineering. Before entering academia in 1995 he had worked for 18 years for Crosfield Electronics Limited, the UK’s leading manufacturer of digital systems for the graphic arts industry. He developed the software for the world’s first electronic page composition system, and algorithms for digital image processing and graphic user interfaces for image retouching. He holds 15 patents in these fields.
Lindsay is a Fellow of the British Computer Society (BCS), the Institution of Electrical Engineers (IEE), the Royal Photographic Society (RPS), the Royal Society for the Arts (RSA) and the Society of Imaging Science and Technology (IS&T). He has co-edited eight books on the application of colour imaging to engineering and cultural heritage. He was Chairman of The Colour Group (Great Britain) from 2007 to 2009, and is Chairman of the Organising Committee for the Twelfth AIC Congress, to be held in the UK in 2013.

ORDINARY MEMBERS (candidates):
The remaining 3 ordinary members are to be elected in the Assembly. Four candidacies have been received so far:

• Shoji TOMINAGA (Japan) (male)
Nominated by the Color Science Association of Japan.
Professor at the Graduate School of Advanced Integration Science, Chiba University, Japan.
Organizing Committee of AIC Congress (AIC Colour Kyoto), 1997.
Conference Co-Chair of SPIE/IS&T Color Imaging Conference, 2007-present.
Workshop Co-Chair of the Computational Color Imaging Workshop (CCIW09), 2009.
Associate Editor of the Journal of Electronic Imaging, 2005-present.
Editorial Board of Color Research and Application, 2009-present.
Research activities on color constancy, illuminant estimation, spectral imaging, digital archiving, color image rendering, color image processing, and color image appearance.
• **Maria João DURÃO** (Portugal)  (female)
Nominated by the Portuguese Color Association.
Endorsed by Spain, and with support from associate member IACC.

Postdoctoral research programme on "Art, science and technology in the conception and representation of the architectural work of Santiago Calatrava," developed at the host institution University of Salford, Manchester, supervised by Marcus Ormerod and Rivka Oxman (Faculty of Architecture, Technion Institute of Technology, Haifa), funded by the FCT- Fundação para a Ciência e Tecnologia.

Doctoral Degree in Architecture with the dissertation "Colour and space: an analysis of the relationships between colour meaning expression and the perception of space," Research Centre for the Built and Human Environment, The University of Salford, Manchester. Fine Arts Diploma, Faculty of Fine Art, Lisbon.


Co-founder and President of the APCOR-Portuguese Colour Association affiliated with the Association Internationale de la Couleur (AIC), since 2005. Vice-President for Portugal of the IACC-International Association of Colour Consultants/Designers, and honorary member of the IACC — North America. Author of scientific publications and participant at international seminars, congresses, workshops and art exhibitions in Portugal, United Kingdom, Italy, Germany, Spain, Sweden, Germany, Italy, China, Japan, United States, South Korea, Mexico and Australia.

• **Vojko POGAČAR** (Slovenia)  (male)
Nominated by the Slovenian Colorists Association.
Endorsed by Sweden.

1969-73. finished Academy of Fine Art in Ljubljana.
Since 2000. University of Maribor, Faculty of mechanical engineering, Assistant Professor for Industrial design.
Since 1994. Member of Coloristic Society of Slovenia (DKS).
Since 2004. Member of Managing Committee of DKS.

**Other color meetings:**
1994. Slovenia, Bled, International congress AIC.
2003. Germany, Mannheim, International congress FARBINFO.

**Participation as a Fine Artist and Designer on the international exhibitions with jury:**
1989. Linz, Austria, Stadtmuseum Nordico, Ost-West.
1989 and 92. Linz, Austria, Prix Ars Electronica.
2004. Krynica, Poland, Eurografik.

• **Verena M. SCHINDLER** (Switzerland)  (female)
Nominated by Pro/Colore-Switzerland.
Endorsed by France, Italy, Portugal, and Argentina.

MSc. Art and Architectural History.
Affiliated with Atelier Cler Etudes Chromatiques in Paris.
Founding Member and General Secretary of ad chroma.
Member and AIC Delegate of pro/colore since 2006.


Elected Chair of the Study Group on Environmental Colour Design in 2006.

General Chair of the AIC Midterm Meeting 2011, Zurich.


*AIC e-news, June 2009*
Judd Award 2009: Arne Valberg

From: Berit Bergström
AIC Vice President & Chair of the AIC Judd Award Committee

As chairman of the Judd Award Committee I would like to inform that the winner of the AIC Deane B. Judd Award 2009 is Dr. Arne Valberg.

I can report that we have received four single nominations and one jointly nomination. All nominees have made outstanding contributions to our understanding of colour. I really hope that they all will continue working in the international colour community for many years to come.

The members of the 2009 Judd Award Committee have been: Paula Alessi, Robert Hunt, John Hutchings, Mitsuo Ikeda, Daniel Lozano, Alan Robertson, Lars Sivik, Gunnar Tonnquist and Pieter Walraven. These nine previous winners of the award and past president gave very careful consideration to the nominations.

Arne Valberg; born on December 31st, 1938

Education and positions
- Studies at the Univ. of Oslo and Univ. of Basle, CH 1961-1967
- Graduated as Cand real in Physics, Univ. of Oslo 1967
- Research associate, Univ. of Basle, CH 1968-1971
- Dr. philos, Univ of Oslo 1976
- Ranked 2 for a Professorship in Biophysics, Univ. of Trondheim 1976
- Research Scientist, Norwegian Research Council for Science and the Humanities, Univ. of Oslo, University of California, San Diego
- Max Planck Inst., Göttingen and Univ. of Freiburg, BRD 1972-1990
- Associate Professor, Univ. of Oslo 1990
- Professor of Biophysics and Vision Science, Univ. of Oslo 1993
- Professor of Biophysics and Vision Science, NTNU 1991 to present

Major grants and research projects
- Norwegian Research Council for Science and the Humanities
- European Science Foundation
- Max Planck Gesellschaft
- Deutsche Forschungsgemeinschaft
- Schweizerische Nationalfonds zur Förderung der wissenschaftliche Forschung
- Roche Science Foundation
- IBM Norway
- NSB Norway
- NATO Grants for Collaborative Research
- Thonnin Owesen's Foundation
- Blindeforubundet (Norw. Association for the Blind)
- Thorstein Erbos Fund
- European Union

From 1968 to 1994
Joint research projects in vision (psychophysics and electrophysiology) with groups from:
- Univ. of Basle, Switzerland (1974).
- Univ. of California, San Diego, USA (1973).
- Univ. of Chicago, USA.

From 1994 to present
Joint research on Low vision with Tambartun Centre for Low Vision Rehabilitation (with P. Fosse) and Univ. of Oslo (J.H. Wold and T. Seim), Norway.

From 1998 to 2001
Interdisciplinary Program at NTNU, "Information coding and functional organisation of populations of nerve cells" Together with professors E. Moser and H. Mustaparta.

From 2000 to 2004
Strategic University Program from Norwegian Research Council, "Neural mechanisms of sensory functions and memory" (same collaborators as above). Includes one dr. student (I. Rudvin) and one master student (G. E. Nygård).

2002-2006
Joint project with Brain Research Unit, University of Freiburg on "Lateral interactions in vision". Includes one German dr. student.

2002-2006
EU Concerted Action together with research groups from universities of Tübingen, Manchester and Utrecht. Project title: "Photoreceptor dynamics in age-related macular degeneration".

Memberships, international and national societies and committees
- Elected Fellow of Optical Society of America; USA.
- Member of the Board and Executive Committee of the International Society for Low Vision Research and Rehabilitation.
• Norwegian Representative in Division 1: Vision and Colour of Commission Internationale de l’Eclairage (CIE).
• Member of CIE TC1-36 (Physiologically system for color measurements based on cone) and CIE TC1-59 (Standard 10 degree observer).
• Association for Research in Vision and Ophthalmology, USA.
• International Society for Clinical Electrophysiology of Vision.
• European Society of Neuroscience.
• Member of the Board for Master studies in Neuroscience at NTNU, Trondheim.
• Lysforsk (Light Research) NTNU/SINTEF, Trondheim.

Reviewer for the following journals and foundations
• Journal of the Optical Society of America
• Experimental Brain Research
• Vision Research
• Visual Neuroscience
• Perception
• Perception and Psychophysics
• Die Farbe
• Color Research and Application
• Visual Impairment Research
• Norwegian Research Council
• The Welcome Trust (England)
• National Science Foundation (USA)
• The Miescher Foundation (Switzerland)

Organiser of meetings and conferences
Arranged 5 international interdisciplinary conferences and meetings on vision.
Scientific Director of a NATO Advanced Research Workshop on ”Advances in understanding Visual Processes” at Røros (Norway), August 1990, 70 participants from 11 countries.

Editor/Author
• From Pigment to Perception. Advances in Understanding Visual Processes. Plenum, 1991 (NATO ASI Series)
• Die Farbe (editorial board)
• Editor of Proceedings from 3 Scientific Conferences held in Norway
• Lys Syn Farge, 280 pages (Tapir, 1998)
• Light Vision Color, 460 pages (Wiley, & Sons, 2005)

Publications
• About 100 full scientific papers
• About 100 abstracts/short communications/scientific reports/conference contributions
• 3 books
• Several popular science articles

Lecturer and arrangement of university courses
• From 1973 to today lecturing at the University of Oslo and Norwegian University of Science and Technology on General Physics; Biophysics of Vision; Photometry, Colour Metrics.
• 1989-1993: Lecturer in general physics & Vision Science at Univ. of Oslo.
• 1993-2008: Lecturing Light, Colour, and Vision at NTNU. 7.5 credits.
• 1995-2001: Lecturing on Vision and Perception at the Institute of Psychology, NTNU.
• 1995-2008: Lecturer in EU-courses on Light and Illumination, on Colour perception Perception, etc. Arranged by Dept. of Architecture, NTNU.
• 1991-2001: Arrangement of yearly advanced univ. courses on vision problems for vision therapists, ophthalmologists, and optometrists at Tambartun Resource Center. Jointly with NTNU and Tambartun. The course ”Illumination for the visually handicapped” gives 3 credit points at NTNU.
• 1998–2007: Initiator, coordinator and lecturer of an interdisciplinary curriculum in Neuroscience at NTNU (bachelor and master levels).
• 2001-2004: Teaching Laboratory Course in Physics, NTNU.
• 2004-2007: Invited Lecturer in the course KONS2030 (Art Conservation) at the University of Oslo.
• 2006-2008: Interdisciplinary course Experts in Teams.

Other professional activity
• Member of appointment committees for university professorships.
• Tutor of about 20 students in Physics and Biophysics for the Norwegian degree of Cand. Real and Cand. Scient (master degree), and 4 students for the degree of dr. scient or equivalent.
• Invited speaker to several international conferences.
• Research collaboration with Tambartun Centre for Low Vision Rehabilitation (Melhus) and Brain Research Unit, Univ. of Freiburg (D).
• European Union project Photage on Age-related macular degeneration, together with groups from University of Manchester, Utrecht, and Tübingen (2001-2006).
• Supervisor: About 20 master students in biophysics and 4 dr. students.
Color education

Fokus Farbe 09: Farbe in der Architektur
Workshops, Fachreferate, Führungen
1 September - 16 October 2009, Schule für Gestaltung, Basel, Switzerland
Info: www.sfgbasel.ch

The Natural Colour System (NCS): Philosophy and Applications
8 October 2009, Ad Chroma, Paris, France
Info: www.ad-chroma.com

CREATE Training Course 5: Colour Heritage and Conservation
19-24 October 2009, Palazzo Feltrinelli, Gargnano, Garda lake, Università Degli Studi di Milano, Italy,
Info: www.create.uwe.ac.uk

Info from the AIC-ECD Study Group
Verena M. Schindler, chair of the Environmental Color Design Study Group, has sent the following information:

New color books:
New AIC members

Individual member:

Dr. Zena O’Connor, Design Research Associates, and Environment-behaviour Studies Research Group, University of Sydney, 6/144 Higg Street, North Sydney NSW 2060, Australia, zena.designresearch@gmail.com

Her professional expertise and education relates to theories of color, as well as color within the context of environment-behavior studies, urban design and architecture. She holds a a Masters Degree in Design, and a PhD (thesis title: “Façade colour and aesthetic response: Examining patterns of response within the context of urban design and planning policy in Sydney). She is also a member of the Environmental Design Research Association (USA).

Associate member:

IACC-NA

International Association of Color Consultants/Designers, North America

Ms. Marcia Walter (president), 2600 South Race Street, Denver, CO 80210, USA
Tel: +303 722-6808. Fax: +303 744-0766
E-mails: president@iaccna.org, secretary@iaccna.org
Web: www.iaccna.org

AIC website

The proceedings of AIC 2008, 2007, 2006, 2004, and 2003 are freely available on the web. See www.aic-color.org. Please, include links to the AIC in your own websites and feel free to collaborate with relevant information and data to be added.