

# Mark D. Fairchild

---

<b>Internet:</b>	mark.fairchild@rit.edu markfairchild.org whyiscolor.org
<b>Physical:</b>	Munsell Color Science Laboratory College of Science Rochester Institute of Technology One Lomb Memorial Drive Rochester, New York 14623 +1 585 475 2784
<b>Education:</b>	Ph.D., 1990                      M.A., 1989 Vision Science (Human Sensation and Perception), URochester  M.S., 1986                      B.S., 1986 <i>summa cum laude</i> Imaging Science, Rochester Institute of Technology
<b>Appointments:</b>	June 2017 - present      Rochester Institute of Technology Founding Head, Integrated Sciences Academy Professor & Director, PoCS / MCSL  Aug. 2010 - May 2017      Rochester Institute of Technology Associate Dean of Research & Graduate Education, College of Science Professor & Director, PoCS / MCSL <i>Color Science Program Director, 2008 - 2011</i> <i>Director, Munsell Color Science Lab, 2013 - 2017</i> <i>Director, Program of Color Science, 2013 - 2017</i>  July 1999 - Aug. 2010      Rochester Institute of Technology Professor, Imaging Science <i>Director, Munsell Color Science Lab, 1996 - 2008</i> <i>Xerox Professor of Color Science, 2003 - 2006</i>  July 1997 - Aug. 1998      Cornell University Visiting Associate Professor, Computer Graphics  July 1994 - June 1999      Rochester Institute of Technology Associate Professor, Imaging Science <i>Color Science M.S. Coordinator, 1991 - 1994</i> <i>Imaging Science Ph.D. Coordinator, 1994 - 1996</i> <i>Director, Munsell Color Science Lab, 1996 - 1999</i>  July 1990 - June 1994      Rochester Institute of Technology Assistant Professor, Imaging Science <i>Awarded Tenure: September 1993</i>  July 1987 - June 1990      Rochester Institute of Technology Instructor, Imaging Science

## **Mark D. Fairchild**

---

July 1986 - June 1987 Rochester Institute of Technology  
Instructor, Color Science

March 1986 - May 1986 Rochester Institute of Technology  
Adjunct Faculty, Department of Color Science

Sept. 1983 - May 1986 Rochester Institute of Technology  
Research Assistant, Munsell Color Science Lab  
Student Assistant, Chemistry Library  
Mathematics & Physics Tutor, Special Services

### **Certifications:**

Society of Wine Educators Certified Specialist of Wine (in process), 2018  
Wine and Spirits Education Trust (WSET) Level 2 Award in Wines and Spirits  
with Merit, 2017  
New York Wine and Grape Foundation, New York Wine Industry Certificate, 2017  
Cornell University Viticulture & Enology Experience, CUVÉE, 2010

### **Biographical Sketch:**

Mark Fairchild was born and raised in Trumansburg, New York where he graduated with honors from C.O. Dickerson High School. He entered Rochester Institute of Technology as a freshman in the Photographic Science program and graduated four years later with B.S. and M.S. degrees from that program, which had been renamed Imaging Science. He was a research assistant to Prof. Franc Grum in the newly formed Munsell Color Science Laboratory. Upon completion of his B.S. and M.S. degrees, he joined the Department of Color Science at R.I.T. and currently holds a tenured faculty position in the Program of Color Science (PoCS) and Munsell Color Science Laboratory (MCSL). He undertook a Ph.D. program at Rochester's Center for Visual Science, while continuing his work at R.I.T., earning that degree in 1990 after two and a half years of study. From 1996 to 2008, he was Director of the Munsell Color Science Laboratory, overseeing significant growth and the move to Color Science Hall, which has been renamed the "Munsell Color Science Laboratory". In 2010, he was appointed Associate Dean of Research and Graduate Education of RIT's College of Science. While continuing his work as Associate Dean, he resumed leadership roles in color science in 2013 by becoming the Director of MCSL and founding Director of PoCS. In 2017, Mark became founding Head of the Integrated Sciences Academy within RIT's College of Science while remaining Director of PoCS and MCSL, which became part to of the Integrated Sciences Academy. The Integrated Sciences Academy is a novel academic unit that houses multidisciplinary science programs and promotes multidisciplinary research and education. Dr. Fairchild has been actively involved in research in the areas of colorimetric measurement and standardization, color perception, color vision, color-appearance modeling, digital color reproduction, image quality, and computer graphics. He has authored more than 300 papers, presentations, and technical reports in those areas. He has also supervised the graduate research of over 50 M.S. or Ph.D. students. The third edition of his book, *Color Appearance Models*, was published in 2013, following on the publication of the successful second edition in 2004 and first edition in 1997. Mark is also co-editor of the 2016 *Handbook of Color Psychology*. He spent the 1997-98 academic year on sabbatical leave as a Visiting Associate Professor in Cornell University's Program of Computer Graphics. Additional activities, honors, and awards are listed below.

**Professional Affiliations:**

**ISCC (Inter-Society Color Council)**

*Co-Chair, IG #II, Appearance, Vision, & Modeling, 1991-1992*  
*Chair, IG #I, Basic & Applied Color Research, 1992-1995*  
*Board of Directors, 1995-1998*  
*Chair, 67th Annual Meeting, 1998 (with OSA)*  
*Program Committee, 2<sup>nd</sup> Panchromatic Conference, 2000*  
*Macbeth Award Committee, 2004-2010*  
*Liaison with OSA, 2015-Present*  
*ISCC / AIC 2018 Munsell Celebration, Papers Chair, Core Committee 2016-2018*

**OSA (The Optical Society)**

*Fellow, 2012*  
*Senior Member, 2010*  
*Voting Delegate to ISCC, 1990-2015*  
*Liaison with ISCC, 2015-Present*  
*Representative to CIE, 2003-Present*  
*Councilor, Rochester Section, 1996-1997*

**SWE (Society of Wine Educators)**

**AAAS (American Association for the Advancement of Science)**

**USNC - CIE (Commission International de L'Éclairage)**

*Chair, TC1-34, Testing Colour Appearance Models, 1991-1999*  
*Reporter, R1-24, Colour Appearance Models, 1999-2003*  
*Reporter, R8-05, Image Appearance, 2003-2008*  
*Reporter, R8-08, Image Appearance Model Framework, 2008-2010*  
*Member, TC1-27, Specification of Colour Appearance for Reflective Media and Self-Luminous Display Comparisons, 1990-2011*  
*Member, TC1-48, Revision of CIE Document 15.2 Colorimetry, 1997-2004*  
*Member, TC1-52, Chromatic Adaptation Transforms, 1998-2005*  
*Member, TC1-55, Uniform Colour Space for Industrial Colour Difference Evaluation, 2005-2016*  
*Member, TC1-56, Improved Colour Matching Functions, 1999-2009*  
*Member, TC1-60, Contrast Sensitivity Function for Detection and Discrimination, 2002-2011*  
*Member, TC1-75, A Comprehensive Model of Colour Appearance, 2009-2015*  
*Member, TC1-82, The Calculation of Colour Matching Functions as a Function of Age and Field Size, 2012-2015*  
*Member, TC8-01, Colour Appearance Modeling for Colour Management Applications, 1998-2005*  
*Member, TC8-02, Colour Difference Evaluation in Images, 2000-2011*  
*Member, TC8-03, Gamut Mapping, 1998-2006*  
*Member, TC8-08, Testing of Spatial Color Appearance Models, 2003-2008*  
*Member, TC8-10, Office Lighting for Imaging, 2006-2015*  
*Member, TC8-11, CIECAM02 Mathematics, 2007-2016*  
*Advisor, JTC10, CAM16, 2017-2017*

**SID (Society for Information Display)**

*Technical Co-Chair, IS&T/SID Color Imaging Conference, 1994*  
*Technical Committee, IS&T/SID Color Imaging Conference, 1994-2004*

**CORM (Council for Optical Radiation Measurements)**

**IS&T (Society for Imaging Science and Technology)**

*Technical Committee, SPIE/IS&T EI Image Quality & System Performance Conference, 2003-2015*  
*Color Imaging Editor, J.Im.Sci.Tech., 1999-2002*  
*Scientific Technical Committee, CGIV 2002, 2008*  
*General Chair, PICS Conference, 2003*  
*Image Science Track Chair, International Congress of Imaging Science, 2006*

**ACM-SIGGRAPH (Association for Computing Machinery-Special Interest Group on Graphics)**

*Program Committee, Symposium on Applied Perception in Graphics and Visualization, 2006-2010*

**IEEE**

*Transactions on Image Processing, Associate Editor, Special Issue on Color, 1997*  
*Workshop on Color and Photometric Methods in Computer Vision, Program Committee, 2003*

**Multispectral Color Science**

*Technical Committee, 2001*

**International Workshop on Video Processing and Quality Metrics**

*Technical Program Committee, 2006-2014*

American Society of Cinematographers

*Member, Technology Committee Advanced Imaging Group, 2004-Present*

TASCII (Tsinghua University Art & Science Research Centre, Color & Imaging Institute)

*Member, TASCII Advisory Board, 2010-Present*

HCCB (Houston Center for Biomaterials and Biomimetics of The University of Texas Dental Branch at Houston)

*Adjunct Senior Scientist, 2011-Present*

AIC (International Color Association)

*AIC2015 / MCS2015 International Scientific Committee, 2014-2015*

*AIC2017 International Scientific Committee, 2016-2017*

*AIC / ISCC 2018 Munsell Symposium, Papers Chair, 2016-2018*

TandemLaunch, Inc.

*Fellow, 2015-Present*

### **Honors, & Awards:**

2018 Nickerson Service Award (Inter-Society Color Council)

2017 Society of Motion Picture and Television Engineers (SMPTE) Journal Certificate of Merit Award

2012 Scientific Divulcation Award of the University of Granada (Awarded 2013)

2012 Fellow, The Optical Society (OSA)

2010 Senior Member, The Optical Society (OSA)

2008 Raymond C. Bowman Award (IS&T)

2007 Davies Medal (Royal Photographic Society)

2003 Fellow, Society for Imaging Science & Technology (IS&T)

2002 Macbeth Award (Inter-Society Color Council)

1995 C. James Bartleson Award (The Colour Group of Great Britain)

Best Paper Award, *VPQM 2010 - International Workshop on Video Processing and Quality Metrics* (Fairchild)

Best Paper Award, *2007 ITE/SID International Display Workshops* (M. Sakurai et al.)

MERL Best Student Paper Award, *2013 IS&T Color & Imaging Conference* (Y. Asano et al.)

Best Poster Presentation, *2007 IS&T/SID Color Imaging Conference* (Fairchild)

Best Poster Presentation, *2004 IS&T/SID Color Imaging Conference* (R.Patil, Fairchild and Johnson)

10-Year Author Award, *2002 IS&T/SID 10<sup>th</sup> Anniversary Color Imaging Conference*

Best Poster Presentation, *1997 IS&T/SID Color Imaging Conference* (G.Braun and Fairchild)

Best Poster Presentation, *1995 IS&T/SID Color Imaging Conference* (K.Braun and Fairchild)

Images in the RPS Collection of the National Science+Media Museum (Bradford, UK)

Image in the ISCC/AIC Munsell 2018 Symposium Art Show (Boston)

Xerox Distinguished Lectureship

NYSTAR-CEIS Technology Transfer Award

IBM Faculty Award

Du Pont Young Professor Grant

Numerous Industrial & Government Research Grants & Contracts

SPSE (IS&T) Raymond Davis Scholarship

NALC William C. Doherty Scholarship

National Merit Letter of Commendation

New York State Regents Scholarship

Highest Avg. in Mathematics, Greatest Proficiency in Science (C.O. Dickerson High School)

### **Graduate Students Supervised, Topics: (\*=Ph.D.)**

Amy North, Investigation of Observer Variability in Color Matching Functions

Mike Stokes, Colorimetric Tolerances of Digital Images

Brian Rose, Color Logic: Interactively Defining Color in the Context of Computer Graphics

Nathan Moroney, Color Space Selection for JPEG Image Compression

Elizabeth Pirrotta, Testing Chromatic-Adaptation Models Using Object Colors

Audrey Lester, Color Reproduction of CRT-Displayed Images as Projected Transparencies

Mike Mongeon, Image Transformation into Device-Independent Color ...

Rick Alfvin, Computational Analysis of Observer Metamerism in Cross Media Color Matching

Susan Farnand, Effect of Image Content on Color Difference Perception  
\*Karen Braun, Color-Appearance Modeling for Cross-Media Image Reproduction  
Cathy Daniels, Effect of Surround on Perceived Lightness Contrast of Pictorial Images  
Dalei Huang, Monte Carlo Simulation of 2AFC Experiments  
Jack Rahill, Sensitivity Analysis of Nayatani's Color Appearance Model  
Chris Hauf, Iris Explorer Modules for Color Appearance and Reproduction  
Alex Vaysman, Color Image Quantization and Spatial Resolution  
Mihai Cuciurean-Zapan, Color Preference Reproduction of Ink-Jet Prints  
Garrett Johnson, High-Resolution Spectral Computer Image Synthesis  
\*Fritz Ebner, Preferred Color Reproduction, Gamut Mapping, and Constant Hue Perception  
Mark Shaw, Evaluation of Color Matching Functions and Observer Metamerism  
Barb Grady, Illuminant Sensitivity of Printing Materials  
Richard Suorsa, Color Identification under Simulated Chromatic Illumination  
Kathy Loj, Impact of ICC Monitor Profile Settings on Printed Images  
Jonathan Phillips, Evaluation of S-CIELAB using Halftone Color Patches  
\*Gus Braun, Color Gamut Mapping Algorithms  
Susan Lubecki, Performance Testing of ICC Profiles,  
Sharron Henley, Color Appearance for Cross-Media Comparisons in Mixed Adaptation  
Sergio Gonzalez, Fluorescence Spectrophotometry of Printing Materials  
Michael Sanchez, Lightness of Chromatic Video Colors  
Sun Ju Park, Black-Point Adaptation  
Meredith Graham, Color Image Quantization  
Jason Gibson, Color Discrimination in Images on Various Displays  
Barb Grady, Ink Jet Ink Optimization  
Scot Fernandez, Color Preference Reproduction  
Anthony Calabria, Image Contrast Perception and Modeling  
Jason Babcock, Eye-Movements in Color Imaging Psychophysics  
David Robinson, Psychophysical Red on EP Prints  
\*Garrett Johnson, Image Quality Metrics  
Scot Fernandez, Measuring Preferences with an Image Difference Metric  
\*Qun Sun, Spectral, Portraiture and Image Quality  
Xiaoyun Jiang, Illuminant Estimation Algorithms  
Xiaoyan Song, Chromatic Noise Perception and Modeling  
Rohit Patil, Image Rendering for Print Simulation  
Jim Leland, Image Processing Bi-Spectral Fluorescence Matrices  
Jim Hewett, Computing the Appearance of Mars Rover Images  
Tim Hattenberger, Augmented Reality and Image Difference Perception  
Joseph Stellbrink, Visual Masking of Display Defects  
\*Jiangtao Kuang, High-Dynamic-Range Image Tone Mapping  
Ken Fleisher, Perceptual Image Categories  
\*Hongqin Zhang, Visualization of Spectral Image Information  
Abhijit Sarkar, Assessment of Moving Image Quality  
Stacey Casella, Expansion of Content to Fill WCG Displays  
\*Rod Heckaman, Perceptual Color Gamuts and Brilliance  
John Grim, Review of Gamut Mapping  
Ping-Hsu Chen, Lightness Perception Above Diffuse White  
\*Susan Farnand, Image Content in Image Quality Assessment  
\*Adrià Forés Herranz, Measuring and Modeling Gloss Appearance  
\*Yuta Asano, Observer Metamerism and Observer Categories  
\*David Long, Spectral Imaging in Motion Picture Science  
Christopher Thorstenson, Measuring Physiological Changes in Skin Color  
Morteza Maali Amiri, Spectral Reconstruction from RGB Images and Cone Responses  
\*Fu Jiang, HDR Appearance & Reversibility of Chromatic Adaptation

**Books:**

A. Elliott, M.D. Fairchild, and A. Franklin, Eds. *Handbook of Color Psychology*, Cambridge University Press, Cambridge, UK (2015).

M.D. Fairchild, *Color Appearance Models, Third Edition*, Wiley-IS&T Series in Imaging Science and Technology, Chichester, UK (2013).

M.D. Fairchild and M. Melgosa, *La Tienda de las Curiosidades Sobre el Color (The Color Curiosity Shop, Spanish Translation)*, Editorial Universidad de Granada (2012).

M.D. Fairchild, *The Color Curiosity Shop, Abridged Edition*, MDF, Honeoye Falls, (2011).

M.D. Fairchild, *The Color Curiosity Shop*, MDF, Honeoye Falls, (2011).

M.D. Fairchild, *The HDR Photographic Survey*, MDF, Honeoye Falls, (2008).

M.D. Fairchild, *Color Appearance Models, Second Edition*, Korean Translation, Sigma Press, Seoul (2007).

M.D. Fairchild, *Color Appearance Models, Second Edition*, Wiley-IS&T Series in Imaging Science and Technology, Chichester, UK (2005).

M.D. Fairchild, *Color Appearance Models*, Addison-Wesley, Reading, MA (1998).

**Internet Resources:**

*The HDR Photographic Survey*, <[mcs1.rit.edu/fairchild/HDR.html](http://mcs1.rit.edu/fairchild/HDR.html)>.

*Color Curiosity Shop*, <[whyiscolor.org](http://whyiscolor.org)>.

*Ask A Color Scientist*, <[mcs1.rit.edu](http://mcs1.rit.edu)>.

**Publications & Presentations** (*Invited Presentations Follow Below*):

- In Process: TU: Bidirectional Adaptation: CR&A  
In Process: CT: Skin Reflectance: JIST
- F. Jiang, K. Masaoka and M.D. Fairchild, Simulation and verification for color volume of HDR WCG display, *ITE/SID 25th International Display Workshops*, Nagoya, **submitted** (2018).
- S. Morillas, M. Murdoch, and M.D. Fairchild, Gaussian noise perceptual masking in color images, *IEEE Transactions on Image Processing*, **submitted** (2018).
- F. Jiang, M.D. Fairchild, and K. Masaoka, Estimation of HDR WCG display color gamut volume, *IS&T 26th Color & Imaging Conference*, Vancouver, **in press** (2018).
- M.D. Fairchild, One wine many colors, *IS&T 26th Color & Imaging Conference*, Vancouver, **invited presentation, in press** (2018).
- A. Robinson and M.D. Fairchild, Recreating the Munsell crayon color spectrum, *Color Research and Application* **43**, **in press** (2018).
- M.D. Fairchild, Unique hues & principal hues, *Color Research and Application* **43**, **in press** (2018).
- M.M. Amiri and M.D. Fairchild, A strategy towards spectral and colorimetric color reproduction using ordinary digital cameras, *Color Research and Application* **43**, 10.1002/col.22231 675-684 (2018).
- S. Cai and M.D. Fairchild, Bidirectional individual corresponding colors data, *Color Research and Application* **43**, 10.1002/col.22228, 643-654 (2018).
- S. Morillas and M.D. Fairchild, Using supra threshold color-difference ellipsoids to estimate any perceptual color-difference, *Journal of Visual Communication and Image Representation* **55**, 10.1016/j.jvcir.2018.05.022 142-148 (2018).
- M.D. Fairchild, Munsell's legacy: Foundation and Laboratory, ISCC-AIC Munsell Centennial Color Symposium, Boston (2018).
- S. Morillas and M.D. Fairchild, A supra threshold color-difference ellipsoids hybrid model for color differences, ISCC-AIC Munsell Centennial Color Symposium, Boston (2018).
- A. Robinson and M.D. Fairchild, Recreating the Munsell color crayon color spectrum, ISCC-AIC Munsell Centennial Color Symposium, Boston (2018).
- K. Masaoka, F. Jiang, M.D. Fairchild and R.L. Heckaman, 2D representation of display color gamut, *SID International Symposium Digest of Technical Papers* **49**, 1048-1051(2018).
- M.D. Fairchild, The colors of wine, *International Journal of Wine Research* **10**, 13-31(2018).
- M.J. Murdoch and M.D. Fairchild, Modeling the effects of inter-observer variation on color rendition, *Lighting Research and Technology* **49**, 10.1177/1477153517744387, 1-18(2017).
- M.D. Fairchild, Individual differences in color matching & adaptation and illumination, *OSA Fall Vision Meeting*, Washington, D.C., *Journal of Vision* **17**, 10.1167/17/15/2a (2017).

M.D. Fairchild, Color perception: Contexts and individuals, *American Glass Guild Proceedings*, Rochester, (2017).

M.M. Amiri and M.D. Fairchild, Use of spectral sensitivity variability in reflectance recovery from colorimetric information, *Journal of the Optical Society of America A* **34**, 1224-1235 (2017).

B. Zhou, K. Grotton, A. Kruse, A. Skinner, S. DoVale, S. Farnand and M.D. Fairchild, Observer calibrator for color vision research, *IS&T Electronic Imaging 2017 Conference*, IQSP XIV, San Francisco, 59-63 (2017).

M.D. Fairchild, Spotlight Summary of “Method to determine degrees of consistency in experimental datasets of perceptual color differences” by Morillas et al., *OSA Spotlight on Optics*, Nov. (2016).

M.D. Fairchild, Individual differences in color matching and adaptation: Theory and practice, *IS&T 24th Color & Imaging Conference*, San Diego, 115-120 (2016).

M.J. Murdoch and M.D. Fairchild, Effects of inter-observer variation on color rendering metrics, *IS&T 24th Color & Imaging Conference*, San Diego, 187-191 (2016).

S. Cai and M.D. Fairchild, Individual corresponding colors data and chromatic adaptation transform, *IS&T 24th Color & Imaging Conference*, San Diego, 248-253 (2016).

M.D. Fairchild, From photon to brain: The perception of a color, *IS&T 24th Color & Imaging Conference*, San Diego, 291-293 (2016).

Y. Asano, M.D. Fairchild, L. Blondé and P. Morvan, Color matching experiment for highlighting inter-observer variability, *Color Research and Application* **41**, 530-539 (2016).

M.D. Fairchild, *Gustav Theodor Fechner*, in the *Encyclopedia of Color Science & Technology*, Springer, ISBN: 978-3-642-27851-8 (Online) (2016).

M.D. Fairchild, *Johan Adolf von Kries*, in the *Encyclopedia of Color Science & Technology*, Springer, ISBN: 978-3-642-27851-8 (Online) (2016).

M.D. Fairchild, *Gabriel Lippmann*, in the *Encyclopedia of Color Science & Technology*, Springer, ISBN: 978-3-642-27851-8 (Online) (2016).

M.D. Fairchild, *Joseph William Lovibond*, in the *Encyclopedia of Color Science & Technology*, Springer, ISBN: 978-3-642-27851-8 (Online) (2016).

M.D. Fairchild, *Stanley Smith Stevens*, in the *Encyclopedia of Color Science & Technology*, Springer, ISBN: 978-3-642-27851-8 (Online) (2016).

D.L. Long and M.D. Fairchild, Observer metamerism models and multiprimary display systems, *SMPTE Motion Imaging Journal* **125**, 18-29 (2016).

M.D. Fairchild, Individual differences in color matching and adaptation: Importance in lighting, *Light + Color: IES Research Symposium III*, Gaithersburg, (2016).

Y. Asano, M.D. Fairchild, and L. Blondé, Individual colorimetric observer model, *PLOS ONE* **11**, e0145671 (2016).



M.D. Fairchild and R.L. Heckaman, Measuring observer metamerism: The Nimeroff approach, *Color Research and Application* **41**, 115-124 (2016).

M.D. Fairchild, Color models and systems, in A. Elliott, M.D. Fairchild and A. Franklin, Eds. *Handbook of Color Psychology*, Cambridge University Press, Cambridge, UK (2015).

M.D. Fairchild, *Metameric Blacks: A Color Curious Column*, ISCC News #445 - 472 (2010-2015).

D.L. Long and M.D. Fairchild, Observer metamerism models and multiprimary display systems, *SMPTE Annual Technical Conference*, Hollywood, (2015).

M.D. Fairchild and Y. Asano, Custom color matching functions: Extending the CIE 2006 model, *The 10th Biennial Joint CNC/CIE and CIE/USA Technical Conference*, Toronto, Abstract 1 (2015).

M. Melgosa, L. Gomez-Robledo, M.I. Sure and M.D. Fairchild, What can we learn from a dress with ambiguous colors?, *Color Research and Application* **40**, 525-529 (2015).

Y. Asano, M.D. Fairchild, and L. Blondé, Spectral pseudoisochromatic images: Vision test for color-normal observers, AIC2015 / MCS 2015, Tokyo (2015).

M.D. Fairchild, Seeing, adapting to, and reproducing the appearance of nature, *Virtual Journal for Biomedical Optics* **10**, Issue 3, republication (2015).

D.L. Long and M.D. Fairchild, Reducing observer metamerism in wide-gamut multiprimary displays, *SPIE/IS&T Electronic Imaging Conference*, San Francisco, Volume **9394**, 93940T (2015).

A. Forés Herranz, M.D. Fairchild and I. Tastl, An abridged goniometer for material appearance measurements, *SPIE/IS&T Electronic Imaging Conference*, San Francisco, Volume **9398**, 93980G (2015).

M.D. Fairchild, Seeing, adapting to, and reproducing the appearance of nature, *Applied Optics* **54**, B107-B116 (2015).

D.L. Long and M.D. Fairchild, Modeling observer variability and metamerism failure in electronic color displays, *Journal of Imaging Science & Technology* **58**, 30402-1-30402-14 (2014).

C.P. Sisson, S.P. Farnand, M.D. Fairchild and B. Fischer, Analysis of color consistency in retinal fundus photography: Application of color management and development of an eye model standard, *Analytical Cellular Pathology* **2014**, Article ID 398462 (2014).

D.L. Long and M.D. Fairchild, Modeling observer variability and metamerism failure in electronic color displays, *IS&T 22nd Color & Imaging Conference*, Boston, 14-20 (2014).

Y. Asano, M.D. Fairchild, L. Bondé and P. Morvan, Observer variability in image color matching on an LCD monitor and a laser projector, *IS&T 22nd Color & Imaging Conference*, Boston, 1-6 (2014).

A. Forés Herranz, M.D. Fairchild and I. Tastl, Improving the perceptual uniformity of a gloss space, *IS&T 22nd Color & Imaging Conference*, Boston, 7-13 (2014).

Y. Asano, M.D. Fairchild, and L. Blondé, Development of a vision model for individual colorimetric observers, *OSA Fall Vision Meeting*, Philadelphia, (2014).

M.D. Fairchild, A.M. Tourapis and D. Singer, New high dynamic range content based on still imagery, ISO/IEC JTC1/SC29/WG11 MPEG2014/mXXXX (2014).

A. Forés Herranz, M.D. Fairchild and I. Tastl, Perceptual gloss space BRDF projection, uniformity validation, and lightness distance metric, *ACM Symposium on Applied Perception*, Vancouver 136 (2014).

M.D. Fairchild, The value of colorfulness, brilliance, and similarity, *LD+A*, Illuminating Engineering Society, 44:8 16-18(2014).

R. Cao, M. Castle, W. Sawatwarakul, M.D. Fairchild, R. Kuehni, R. Shamey, Scaling perceived saturation, *Journal of the Optical Society of America A* **31**, 1773-1781 (2014).

S. Farnand and M.D. Fairchild, Designing pictorial stimuli for perceptual experiments, *Virtual Journal for Biomedical Optics* **9**, Issue 7, republication (2014).

Y. Asano, M.D. Fairchild L. Blondé and P. Morvan, Multiple color matches to estimate human color vision sensitivities, *International Conference on Image and Signal Processing 2014*, Cherbourg, France, 18-25 (2014).

S. Farnand and M.D. Fairchild, Designing pictorial stimuli for perceptual experiments, *Applied Optics* **53**, C72-C78 (2014).

J. Preiss, M.D. Fairchild, J. Ferwerda, and P. Urban, Gamut mapping in a high-dynamic-range color space, *SPIE/IS&T Electronic Imaging Conference*, San Francisco, doi:10.1117/12.2039747 (2014).

M.D. Fairchild and R.L. Heckaman, Metameric observers: A Monte Carlo approach, *IS&T 21st Color & Imaging Conference*, Albuquerque, 185-190 (2013).

Y. Asano and M.D. Fairchild, Observer variability experiment using a four-primary display, *IS&T 21st Color & Imaging Conference*, Albuquerque, 171-176 (2013).

M.D. Fairchild, Seeing, adapting to, and reproducing the appearance of nature, *OSA International Conference on Light and Color in Nature*, Fairbanks (2013).

ISO 1254-5:2013, *Graphic technology — Prepress digital data exchange — Part 5: Scene referred standard colour image data (RIMM/SCID)*, International Organization for Standardization (2013). [Several images were contributed to this set of standard image data.]

M. Melgosa and M.D. Fairchild, *Inspiring future experimental scientists through questions related to colour*, 12th International Conference on Education and Training in Optics & Photonics, Porto, Portugal, 25 (2013).

Y. Asano, M.D. Fairchild and L. Blondé, Observer variability experiment using a four-primary display, *AIC Colour 2013*, Newcastle, 136-137 (2013).

S. Farnand and M.D. Fairchild, Evaluating complexity in photographic images using perceptual, eye-tracking, and segmentation methods, *AIC Colour 2013*, Newcastle, 133 (2013).

M.D. Fairchild, Color scales, *X National Congress of Color*, Valencia, Spain, 1 (2013).

K. Masaoka, R.S. Berns, M.D. Fairchild and F.M. Abed, The number of discernible object colors is a conundrum, *Journal of the Optical Society of America A* **30**, 264-277 (2013).

K. Masaoka, R.S. Berns, M.D. Fairchild and F.M. Abed, The number of discernible object colors is a conundrum, *Virtual Journal for Biomedical Optics* **8**, Issue 3, republication (2013).

M.D. Fairchild, Progress and poverty: An inquiry into color appearance modeling and increase of want with increase of wealth, *IS&T/SID 20th Color and Imaging Conference*, Los Angeles, 155- 157 (2012).

M.D. Fairchild and R.L. Heckaman, Deriving appearance scales, *IS&T/SID 20th Color and Imaging Conference*, Los Angeles, 281-286 (2012).

K. Masaoka, R.S. Berns, M.D. Fairchild and F.M. Abed, The number of discernible object colors is unknown, *IS&T/SID 20th Color and Imaging Conference*, Los Angeles, 287-292 (2012).

T. Kinsman, M.D. Fairchild and J.B. Pelz, Color is not a metric space: Implications for pattern recognition, machine learning, and computer vision, *IEEE-IS&T Western NY Image Processing Workshop*, Rochester (2012).

S. Farnand and M.D. Fairchild, The effect of experimental instructions on the number of areas identified as important in photographic images, *IS&T 6th CGIV Proceedings*, Amsterdam, 290-294 (2012).

M.D. Fairchild, Is there really such a thing as color space? Foundations of unidimensional appearance spaces, *ISCC/IS&T/SID Special Topics Meeting: Revisiting Color Spaces*, San Jose 2(2011).

H. Li, M.D. Fairchild and A. Webster, Appearance-based primary design for displays, *IS&T/SID 19th Color and Imaging Conference*, San Jose, 139-145 (2011).

D.L. Long and M.D. Fairchild, Optimizing spectral color reproduction in multiprimary digital projection, *IS&T/SID 19th Color and Imaging Conference*, San Jose, 290-297 (2011).

M.D. Fairchild, *Hue Angles: Dancing with spectra ... and some famous historical figures from the world of color photography*, ISCC News #452 (2011).

R.L. Heckaman and M.D. Fairchild, Brighter, more colorful colors and darker, deeper colors based on a theme of brilliance, *Color Research and Application* **36**, 255-265 (2011).

D.L. Long and M.D. Fairchild, Reducing observer metamerism by spectral color reproduction in digital projection, NAB Annual Meeting, Las Vegas (2011)

M.D. Fairchild and P.-H. Chen, Brightness, lightness, and specifying color in high-dynamic-range scenes and images, *SPIE/IS&T Electronic Imaging Conference*, Vol. **7867** San Francisco, 78670O-1 -78670O-14 (2011).

M.D. Fairchild, Stimulating future color imaging scientists and engineers, *IS&T/SID 18th Color Imaging Conference*, San Antonio, 38-41 (2010).

M.D. Fairchild, Still photography throwdown: Silver halide vs. silicon, *IS&T/SID 18th Color Imaging Conference*, San Antonio, 154-159 (2010).

M.D. Fairchild and D.R. Wyble, hdr-CIELAB and hdr-IPT: Simple models for describing the color of high-dynamic-range and wide-color-gamut images, *IS&T/SID 18th Color Imaging Conference*, San Antonio, 322-326 (2010).

P.-H. Chen, M.D. Fairchild and R.S. Berns, Scaling lightness perception and differences above and below diffuse white, *IS&T/SID 18th Color Imaging Conference*, San Antonio, 42-48 (2010).

C.P. Sisson, J. Witwer, M.D. Fairchild, and J.B. Pelz, Color variability analysis in fundus photography, 41st Annual Meeting and Educational Program, Ophthalmic Photographers' Society, Chicago (2010).

J. Kuang, R.L. Heckaman, and M.D. Fairchild, Evaluation of HDR tone mapping algorithms using a high-dynamic-range display to emulate real scenes, *Journal of the Society of Information Display* **18**, 461-468 (2010).

I. Katayama and M.D. Fairchild, Quantitative evaluation of perceived whiteness based on a color vision model, *Color Research and Application* **35**, 410-418 (2010).

G.M. Johnson, X. Song, E.D. Montag, and M.D. Fairchild, Derivation of a color space for image color difference measurement, *Color Research and Application* **35**, 387-400 (2010).

M.D. Fairchild, Color appearance models and complex visual stimuli, *Journal of Dentistry*, **38**, s2, e25-e33 (2010).

M.D. Fairchild, Accurately recording images of nature and reproducing our perceptions, *Representing Reality: Imagery in the Cognitive, Social and Natural Sciences*, Buffalo, (2010).

M.D. Fairchild, The perceptibility of video artifacts: A perspective from color science, *5th International Workshop on Video Processing and Quality Metrics (VPQM)*, Scottsdale, Paper 65 (2010).

R.L. Heckaman and M.D. Fairchild, Jones and Condit redux in high-dynamic-range and color, *IS&T/SID 17th Color Imaging Conference*, Albuquerque, 8-14 (2009).

R.L. Heckaman and M.D. Fairchild, G0 and the gamut of real objects, *Proceedings of AIC Color '09*, Sydney, (2009).

M.D. Fairchild, To see, to adapt, and to reproduce, in Raúl Gómez Valverde, *To Look and To Look*, Esete Punto S.L., Santander, Spain, 58-71 (2009).

M.D. Fairchild, Twenty-five years of research at the Munsell Color Science Laboratory, *ISCC Annual Meeting - MCSL 25th Anniversary Symposium*, Rochester, (2009).

M. Sakurai, T. Nakatsue, Y. Shimpuku, R.L. Heckaman and M.D. Fairchild, Evaluation of gamut expansion algorithms for wide gamut display, *SID International Symposium*, San Antonio, 1006-1009 (2009).

T.J. Hattenberger, M.D. Fairchild, G.M. Johnson, and C. Salvaggio, A psychophysical investigation of global illumination algorithms used in augmented reality, *ACM Transactions on Applied Perception* **6**, 2:1-2:22 (2009).

N. Benjamin, M.D. Fairchild and J. Caviedes, review of color and contrast processing requirements in consumer video, *4th International Workshop on Video Processing and Quality Metrics (VPQM)*, Scottsdale, F1b-1(2009).

M. Sakurai, R.L. Heckaman, S. E. Casella, M.D. Fairchild, T. Nakatsue, and Y. Shimpuku, Effects of display properties on perceived color-gamut volume and preference, *Journal of the Society of Information Display* **16**, 1203-1211 (2008).

S.E. Casella, R.L. Heckaman, M.D. Fairchild, and M. Sakurai, Mapping standard image content to wide-gamut displays, *IS&T/SID 16th Color Imaging Conference*, Portland, 106-111 (2008).

R.L. Heckaman and M.D. Fairchild, Brighter, more colorful colors and darker, deeper colors based on a theme of brilliance, *IS&T/SID 16th Color Imaging Conference*, Portland, 112-116 (2008).

M.R. Rosen, C. Liu, M. Updegraff, M.D. Fairchild, J. Laird and I. Henderickx, Impact of chromatic surround on display perception, *IS&T/SID 16th Color Imaging Conference*, Portland, 147-151 (2008).

A. Sarkar, M.D. Fairchild, and J. Caviedes, A comparative study of color and contrast enhancement for still images and consumer video applications, *IS&T/SID 16th Color Imaging Conference*, Portland, 170-175 (2008).

I. Katayama and M.D. Fairchild, Classification of observers based on the evaluation tendency of perceived whiteness: Comparison of the experiment results in U.S. and those in Japan, 39th Annual Meeting of the Color Science Association of Japan, Fukuoka, *Journal of the Color Science Association of Japan* **32** Supplement, 66-67(2008).

M.D. Fairchild, High, wide, & deep: Displayed image color appearance and perception, SID International Symposium, Los Angeles, 780-782 (2008).

M. Sakurai, R.L. Heckaman, S.E. Casella, M.D. Fairchild, T. Nakatsue, and Y. Shimpuku, Effect of color-gamut volume in display on image preference, SID International Symposium, Los Angeles, 795-798 (2008).

A. Sarkar, M.D. Fairchild, and C. Salvaggio, Integrated daylight harvesting and occupancy detection using digital imaging, *SPIE/IS&T Electronic Imaging*, San Jose, SPIE Vol. **6816**, 68160F (2008).

H. Zhang, H. Peng, M.D. Fairchild, and E.D. Montag, Hyperspectral image visualization based on a human visual model, *SPIE/IS&T Electronic Imaging*, San Jose, SPIE Vol. **6806**, 68060N (2008).

M.D. Fairchild, Beyond the locus of spectrally pure colors, *SPIE/IS&T Electronic Imaging*, San Jose, Proc. SPIE Vol. **6807**, 680702 (2008).

M.D. Fairchild, D.R. Wyble, and G.M. Johnson, Matching image color from different cameras, *SPIE/IS&T Electronic Imaging*, San Jose, Proc. SPIE Vol. **6808**, 68080E (2008).

M. Sakurai, R.L. Heckaman, M.D. Fairchild, T. Nakatsue, and Y. Shimpuku, Relationship between color appearance and color gamut of the display, *ITE/SID 14th International Display Workshops*, Sapporo, Vol. 3, 2305-2308 (2007).

M.D. Fairchild, The HDR photographic survey, *IS&T/SID 15th Color Imaging Conference*, Albuquerque, 233-238 (2007).

M.D. Fairchild and D.R. Wyble, Mean observer metamerism and the selection of display primaries, *IS&T/SID 15th Color Imaging Conference*, Albuquerque, 151-156 (2007).

C. Liu and M.D. Fairchild, Re-measuring and modeling perceived image contrast under different levels of surround illumination, *IS&T/SID 15th Color Imaging Conference*, Albuquerque, 66-70 (2007).

J. Kuang, R.L. Heckaman and M.D. Fairchild, Evaluation of HDR tone mapping algorithms using a high-dynamic-range display to emulate real scenes, *IS&T/SID 15th Color Imaging Conference*, Albuquerque, 299-303 (2007).

J. Kuang and M.D. Fairchild, iCAM06, HDR, and image appearance, *IS&T/SID 15th Color Imaging Conference*, Albuquerque, 249-254 (2007).

R.L. Heckaman, M. Sakurai, M.D. Fairchild, T. Nakatsue, and Y. Shimpuku, The effect of display gamut volume on image preference, *IS&T/SID 15th Color Imaging Conference*, Albuquerque, 201-206 (2007).

M.D. Fairchild, The HDR photographic survey, *IEEE Signal Processing Society Western New York Image Processing Workshop Proceedings*, Rochester, 39-42 (2007).

J. Kuang, G.M. Johnson, and M.D. Fairchild, iCAM06: A refined image appearance model for HDR image rendering, *Journal of Visual Communication and Image Representation* **18**, 406-414 (2007).

R.L. Heckaman and M.D. Fairchild, Beyond the locus of pure spectral colors and the promise of high-dynamic-range display technology, *Information Display* **23**:7, 22-27 (2007).

M.D. Fairchild and G.M. Johnson, Measurement and modeling of adaptation to noise in images, *Journal of the Society of Information Display* **15**, 639-647 (2007).

M.D. Fairchild, Ed., Color, *World Book Encyclopedia*, (2007).

J. Kuang, H. Yamaguchi, C. Liu, G.M. Johnson, and M.D. Fairchild, Evaluating HDR rendering algorithms, *ACM Transactions on Applied Perception* **4**, Article 9 (2007).

G.M. Johnson and M.D. Fairchild, Image Appearance Modeling, Ch. 12 in *Colorimetry: Understanding the CIE System*, Wiley, Chichester (2007).

M.D. Fairchild, Spectral adaptation, *Color Research and Application* **32**, 100-112 (2007).

M.D. Fairchild, A color scientist looks at video, *3rd International Workshop on Video Processing and Quality Metrics (VPQM)*, Scottsdale, Invited Paper 1 (2007).

R.L. Heckaman and M.D. Fairchild, Effect of DLP projector white channel on perceptual gamut, *Journal of the Society of Information Display* **14**, 755-761 (2006).

M.D. Fairchild, Color appearance in image displays, *ISCC/CIE Expert Symposium - 75 Years of the CIE Standard Colorimetric Observer*, *CIE Pub. x-303:2006*, Ottawa, 91-95 (2006).

M.D. Fairchild, Spectral adaptation: A reason to use the wavenumber scale, *IS&T/SID 14th Color Imaging Conference*, Scottsdale, 314-319 (2006).

C. Liu and M.D. Fairchild, The surround color and color matching functions, *IS&T/SID 14th Color Imaging Conference*, Scottsdale, 203-208 (2006).

J. Kuang, G.M. Johnson, and M.D. Fairchild, iCAM for high-dynamic-range image rendering, *ACM Proceedings of the 3rd Symposium on Applied Perception in Graphics and Visualization*, Boston, **153**, 151 (2006).

R.L. Heckaman and M.D. Fairchild, Expanding display color gamut beyond the spectrum locus, *Color Research and Application* **31**, 475-482 (2006).

J. Kuang, C. Liu, G.M. Johnson, and M.D. Fairchild, Evaluation of HDR image rendering algorithms using real-world scenes, *International Congress of Imaging Science '06*, Rochester, 265-268 (2006).

C. Liu, J. Kuang, G.M. Johnson, and M.D. Fairchild, Lightness perception on noisy backgrounds considering background frequency and stimulus size, *International Congress of Imaging Science '06*, Rochester, 464-467 (2006).

E.D. Montag and M.D. Fairchild, Fundamentals of human vision and vision modeling, Ch. 2 in *Digital Video Image Quality and Perceptual Coding*, CRC Press, Boca Raton, 45-86 (2006).

M.D. Fairchild and R.L. Heckaman, Using HDR display technology and color appearance modeling to create display color gamuts that exceed the spectrum locus, *ISCC Special Topics Conference on Precision and Accuracy in the Determination of Color in Images*, Scottsdale (2005).

M.D. Fairchild and G.M. Johnson, On the salience of novel stimuli: Adaptation and image noise, *IS&T/SID 13<sup>th</sup> Color Imaging Conference*, Scottsdale, 333-338 (2005).

R.L. Heckaman, M.D. Fairchild and D.R. Wyble, The effect of DLP projector white channel on perceptual gamut, *IS&T/SID 13<sup>th</sup> Color Imaging Conference*, Scottsdale, 205-210 (2005).

J. Kuang, G.M. Johnson and M.D. Fairchild, Image preference scaling for HDR rendering, *IS&T/SID 13<sup>th</sup> Color Imaging Conference*, Scottsdale, 8-13 (2005).

C. Liu, G.M. Johnson, G. Braun and M.D. Fairchild, Perception and modeling of halftone image quality using a high-resolution LCD, *IS&T/SID 13<sup>th</sup> Color Imaging Conference*, Scottsdale, 165-170 (2005).

T.J. Hattenberger, G.M. Johnson, and M.D. Fairchild, Evaluation of algorithms for augmented reality using psychophysics and iCAM, *ACM Proceedings of the 2<sup>nd</sup> Symposium on Applied Perception in Graphics and Visualization, Spain*, **95**, 174 (2005).

E.L. Landa and M.D. Fairchild, Charting color from the eye of the beholder, *American Scientist* **93**, 436-443 (2005).

R.L. Heckaman and M.D. Fairchild, Talking About Color ... Brilliance, *Color Research and Application* **30**, 250-251 (2005).

S. Fernandez, M.D. Fairchild and K. Braun, Analysis of observer and cultural variability while generating preferred color reproductions of pictorial images, *Journal of Imaging Science & Technology* **49**, 96-104 (2005).

G.M. Johnson and M.D. Fairchild, The effect of opponent noise on image quality, *SPIE/IS&T Electronic Imaging Conference*, San Jose, SPIE Vol. 5668, 82-89 (2005).

X. Jiang and M.D. Fairchild, Illuminant estimation for multi-channel images, *SPIE/IS&T Electronic Imaging Conference*, San Jose, **5667**, 118-127 (2005).

J.M. Sanchez and M.D. Fairchild, The perceptual amplification of color for a common computer monitor: Helmholtz-Kohlrausch at work on the desktop computer, *Color Research and Application*, in press (2005).

H. Yamaguchi and M.D. Fairchild, A study of simultaneous lightness perception for stimuli with multiple illumination levels, *IS&T/SID 12<sup>th</sup> Color Imaging Conference*, Scottsdale, 22-28 (2004).

T. Hasegawa and M.D. Fairchild, Estimation of object reflectance spectra from digital camera images, *IS&T/SID 12<sup>th</sup> Color Imaging Conference*, Scottsdale, 111-116 (2004).

R. Patil, M.D. Fairchild and G.M. Johnson, 3D simulation of prints for improved soft proofing, *IS&T/SID 12<sup>th</sup> Color Imaging Conference*, Scottsdale, 193-199 (2004).

M.D. Fairchild and G.M. Johnson, METACOW: A public-domain, high-resolution, fully-digital, noise-free, metameric, extended-dynamic-range, spectral test target for imaging system analysis and simulation, *IS&T/SID 12<sup>th</sup> Color Imaging Conference*, Scottsdale, 239-245 (2004).

C. Liu and M.D. Fairchild, Measuring the relationship between perceived image contrast and surround illumination, *IS&T/SID 12<sup>th</sup> Color Imaging Conference*, Scottsdale, 282-288 (2004).

J. Kuang, H. Yamaguchi, G.M. Johnson and M.D. Fairchild, Testing HDR image rendering Algorithms, *IS&T/SID 12<sup>th</sup> Color Imaging Conference*, Scottsdale, 315-320 (2004).

X. Song, G.M. Johnson and M.D. Fairchild, Minimizing the perception of chromatic noise in digital images, *IS&T/SID 12<sup>th</sup> Color Imaging Conference*, Scottsdale, 340-346 (2004).

M.D. Fairchild, Color appearance modeling: Splicing color science and practical applications, *OSA Fall Vision Meeting, Rochester, Journal of Vision* **4**:11, 26 (2004).

M.D. Fairchild, G.M. Johnson, J. Kuang, and H. Yamaguchi, Image Appearance Modeling and High-Dynamic-Range Image Rendering, *SIGGRAPH 1<sup>st</sup> Symposium on Applied Perception in Graphics and Visualization*, Los Angeles, 171 (2004).

Q. Sun and M.D. Fairchild, Image quality analysis for visible spectral imaging systems, *Journal of Imaging Science and Technology* **48**, 211-221 (2004).

G.M. Johnson, R.A. Patil, E.D. Montag and M.D. Fairchild, Image quality scaling for electrophotographic prints, *SPIE/IS&T Electronic Imaging Conference*, San Jose, **5294**, 165-175 (2004).

M.D. Fairchild and G.M. Johnson, The iCAM framework for image appearance, differences, and quality, *Journal of Electronic Imaging* **13**, 126-138 (2004).

A.J. Calabria and M.D. Fairchild, Perceived image contrast and observer preference I: The effects of lightness, chroma, and sharpness manipulations on contrast perception, *Journal of Imaging Science & Technology* **47**, 479-493 (2003).

A.J. Calabria and M.D. Fairchild, Perceived image contrast and observer preference II: Empirical modeling of perceived image contrast and observer preference data, *Journal of Imaging Science & Technology* **47**, 494-508 (2003).

G.M. Johnson and M.D. Fairchild, Rendering HDR images, *IS&T/SID 11<sup>th</sup> Color Imaging Conference*, Scottsdale, 36-41 (2003).

Q. Sun and M.D. Fairchild, Application of PQS for image quality analysis in visible spectral imaging, *IS&T/SID 11<sup>th</sup> Color Imaging Conference*, Scottsdale, 132-136 (2003).

G.M. Johnson and M.D. Fairchild, A top down description of S-CIELAB and CIEDE2000, *Color Research and Application*, **28** 425-435 (2003).



M.D. Fairchild, iCAM: An image color appearance model, *25<sup>th</sup> Session of the CIE*, San Diego, D1-34 - D1-37 (2003).

M.D. Fairchild, Colour appearance in imaging, *25<sup>th</sup> Session of the CIE*, San Diego, W-9 (2003).

S. Fernandez, G.M. Johnson and M.D. Fairchild, Statistical summaries of iCAM image-difference maps, *IS&T PICS Conference*, Rochester, 108-113 (2003).

Q. Sun and M.D. Fairchild, Image quality for visible spectrum imaging, *IS&T PICS Conference*, Rochester, 210-214 (2003).

J.S. Babcock, J.B. Pelz and M.D. Fairchild, Eye tracking observers during rank order, paired comparison, and graphical rating tasks, *IS&T PICS Conference*, Rochester, 10-15 (2003).

J.S. Babcock, J.B. Pelz and M.D. Fairchild, Eye tracking observers during color image evaluation tasks, *SPIE/IS&T Electronic Imaging Conference*, SPIE Vol. **5007**, Santa Clara, 218-230 (2003).

G.M. Johnson and M.D. Fairchild, Measuring images: Differences, quality, and appearance, *SPIE/IS&T Electronic Imaging Conference*, SPIE Vol. **5007**, Santa Clara, 51-60 (2003).

M.D. Fairchild and G.M. Johnson, Image appearance modeling, *SPIE/IS&T Electronic Imaging Conference*, SPIE Vol. **5007**, Santa Clara, 149-160 (2003).

X. Jiang and M.D. Fairchild, A new constraint on spectral reflectance and its application in illuminant detection, *SPIE/IS&T Electronic Imaging Conference*, SPIE Vol. **5008**, Santa Clara, 186-196 (2003).

G.M. Johnson and M.D. Fairchild, Visual psychophysics and color appearance, in *Digital Color Imaging Handbook*, CRC Press, Boca Raton, 115-171 (2003).

D.R. Wyble and M.D. Fairchild, Color: Physiology, psychology, and perception, *SPS Reflections*, (2003).

Q. Sun and M.D. Fairchild, Statistical characterization of face spectral reflectances and its application to human portraiture spectral estimation, *Journal of Imaging Science and Technology* **46**, 498-506 (2002).

M.R. Rosen, F.H. Imai, M.D. Fairchild, and N. Ohta, Data-efficient methods applied to unconstrained spectral image capture, *Journal of the Society of Photographic Science and Technology of Japan* **65**, 353-362 (2002).

A. Calabria and M.D. Fairchild, Compare and contrast: Perceived contrast of color images, *IS&T/SID 10<sup>th</sup> Color Imaging Conference*, Scottsdale, 17-22 (2002).

M.D. Fairchild and G.M. Johnson, Meet iCAM: A next-generation color appearance model, *IS&T/SID 10<sup>th</sup> Color Imaging Conference*, Scottsdale, 33-38 (2002).

S. Fernandez and M.D. Fairchild, Observer preferences and cultural differences in color reproduction of scenic images, *IS&T/SID 10<sup>th</sup> Color Imaging Conference*, Scottsdale, 66-72 (2002).

X. Jiang and M.D. Fairchild, The influence of sensor spectral sensitivities on illumination estimation algorithms, *IS&T/SID 10<sup>th</sup> Color Imaging Conference*, Scottsdale, 121-126 (2002).

C.J Li, M.R. Luo, R.W.G. Hunt, N. Moroney, M.D. Fairchild, and T. Newman, The performance of CIECAM02, *IS&T/SID 10<sup>th</sup> Color Imaging Conference*, Scottsdale, 28-32 (2002).

N. Moroney, M.D. Fairchild, R.W.G. Hunt, C.J Li, M.R. Luo, and T. Newman, The CIECAM02 color appearance model, *IS&T/SID 10<sup>th</sup> Color Imaging Conference*, Scottsdale, 23-27 (2002).

M. Shaw and M.D. Fairchild, Evaluating the CIE 1931 color matching functions, *Color Research and Application* **27**, 316-329 (2002).

M.D. Fairchild, Modeling color appearance, spatial vision, and image quality, *Color Image Science: Exploiting Digital Media*, Wiley, New York, 357-370 (2002).

M.D. Fairchild, Image quality measurement and modeling for digital photography, *International Congress on Imaging Science '02*, Tokyo, 318-319 (2002).

M.D. Fairchild, Progress in color appearance models, *International Congress on Imaging Science '02*, Tokyo, 417-418 (2002).

M.R. Rosen, M.D. Fairchild and N. Ohta, Data efficient methods applied to spectral image capture, *International Congress on Imaging Science '02*, Tokyo, 389-390 (2002).

G.M. Johnson and M.D. Fairchild, From image color difference models to image quality metrics, *International Congress on Imaging Science '02*, Tokyo, 326-327 (2002).

G.M. Johnson and M.D. Fairchild, On contrast sensitivity in an image difference model, *IS&T PICS 2002*, Portland, 18-23 (2002).

M.R. Rosen, M.D. Fairchild and N. Ohta, An introduction to data-efficient spectral imaging, *IS&T Color in Graphics, Imaging, and Visualization '02*, Poitiers, 497-502 (2002).

M.D. Fairchild, Human Visual System — Color Visual Processing, *The Encyclopedia of Imaging Science and Technology*, Wiley, New York (2002).

K. Nakabayashi and M.D. Fairchild, Appearance match between hardcopy and softcopy using lightness rescaling with black-point adaptation, *SPIE/IS&T Electronic Imaging Conference*, San Jose, Vol. 4663, 217-228 (2002).

M.D. Fairchild, Status of CIE color appearance models, *AIC Color 01*, SPIE Vol. 4421, Rochester, 550-553 (2002).

M. Shaw and M.D. Fairchild, Evaluating the CIE 1931 color matching functions, *AIC Color 01*, SPIE Vol. 4421, Rochester, 263-266 (2002).

M. Sanchez and M.D. Fairchild, Lightness appearance matching model, and data, for the re-mapping of chromatic video images to their corresponding NTSC gray image lightness appearance, *AIC Color 01*, SPIE Vol. 4421, Rochester, 607-610 (2002).

Q. Sun and M.D. Fairchild, A new procedure for capturing spectral images of human portraiture, *AIC Color 01*, SPIE Vol. 4421, Rochester, 496-499 (2002).

A. Calabria and M.D. Fairchild, Herding CATs: A comparison of linear chromatic-adaptation transforms for CIECAM97s, *IS&T/SID 9<sup>th</sup> Color Imaging Conference*, Scottsdale, 174-178 (2001).

S. Fernandez and M.D. Fairchild, Preferred color reproduction of images with unknown colorimetry, *IS&T/SID 9<sup>th</sup> Color Imaging Conference*, Scottsdale, 274-279 (2001).

S.J. Park and M.D. Fairchild, Color reproduction using black-point adaptation, *IS&T/SID 9<sup>th</sup> Color Imaging Conference*, Scottsdale, 245-250 (2001).

Q. Sun and M.D. Fairchild, Statistical characteristics of spectral reflectances in human portraiture, *IS&T/SID 9<sup>th</sup> Color Imaging Conference*, Scottsdale, 73-79 (2001).

G.M. Johnson and M.D. Fairchild, Darwinism of color image difference metrics, *IS&T/SID 9<sup>th</sup> Color Imaging Conference*, Scottsdale, 108-112 (2001).

G.M. Johnson and M.D. Fairchild, Development and evaluation of a color image difference metric, *OSA/UCI Vision and Color Meeting*, Irvine, (2001).

E. Miyahara and M.D. Fairchild, Fundamental aspect of image quality metrics: Contrast sensitivity on background of varied relative phase, *OSA/UCI Vision and Color Meeting*, Irvine, (2001).

N. Matsushiro, N. Ohta, M.Q. Shaw, and M.D. Fairchild, Optimizing color-matching functions for individual observers using a variation method, *Journal of Imaging Science and Technology* **45**, 472-483 (2001).

M.D. Fairchild, A revision of CIECAM97s for practical applications, *Color Research and Application* **26**, 418-427 (2001).

Q. Sun and M.D. Fairchild, Spectral imaging for human portraiture, *SPIE OptoNE and Imaging 2001*, Rochester, 69-70 (2001).

G.M. Johnson and M.D. Fairchild, Sharpness Rules, *IS&T/SID 8<sup>th</sup> Color Imaging Conference*, Scottsdale, 24-30 (2000).

S. Gonzalez and M.D. Fairchild, Evaluation of Bispectral Spectrophotometry for Accurate Colorimetry of Printing Materials, *IS&T/SID 8<sup>th</sup> Color Imaging Conference*, Scottsdale, 39-43 (2000).

M. Rosen, M.D. Fairchild, G.M. Johnson, and D.R. Wyble, Color Management within a Spectral Image Visualization Tool, *IS&T/SID 8<sup>th</sup> Color Imaging Conference*, Scottsdale, 75-80 (2000).

S. Henley and M.D. Fairchild, Quantifying Mixed Adaptation in Cross-Media Color Reproduction, *IS&T/SID 8<sup>th</sup> Color Imaging Conference*, Scottsdale, 305-310 (2000).

J.E. Gibson, M.D. Fairchild, and Steven L. Wright, Colorimetric Tolerances of Various Digital Image Displays, *IS&T/SID 8<sup>th</sup> Color Imaging Conference*, Scottsdale, 295-300 (2000).

N. Matsushiro, N. Ohta, M.Q. Shaw, and M.D. Fairchild, Optimizing color-matching functions for individual observers using a variation method, *IS&T/SID 8<sup>th</sup> Color Imaging Conference*, Scottsdale, 357-360 (2000).

K.M. Braun and M.D. Fairchild, Psychophysical generation of matching images for cross-media color reproduction, *Journal of the Society of Information Display* **8**, 33-44 (2000).

G.J. Braun and M.D. Fairchild, General-purpose gamut-mapping algorithms: Evaluation of contrast-preserving rescaling functions for color gamut mapping, *Journal of Imaging Science and Technology* **44**, 343-350 (2000).

S. Gonzalez and M.D. Fairchild, Evaluation of bispectral spectrophotometry for accurate colorimetry of printing materials, CORM Annual Meeting, Session IV: Measurements and Uncertainties in Color Measurements, Rochester (2000).

M.D. Fairchild, Modeling color appearance, spatial vision, and image quality, *Color Image Science 2000*, Derby, 1-10 (2000).

C.M. Daniels, E.J. Giorgianni, and M.D. Fairchild, Method and apparatus for achieving color-appearance matching for an image viewed in surrounds of different relative luminances, *United States Patent 6,046,723*, Apr. 4, 2000.

M.D. Fairchild, On the perception of brightness and contrast of variegated backgrounds, *ISCC 2nd Panchromatic Conference*, Savannah, 26 (2000).

D.R. Wyble and M.D. Fairchild, Prediction of Munsell appearance scales using various color appearance models, *Color Research and Application* **25**, 132-144 (2000).

G.J. Braun and M.D. Fairchild, General-purpose gamut-mapping algorithms: Evaluation of contrast-preserving rescaling functions for color gamut mapping, *IS&T/SID 7th Color Imaging Conference*, Scottsdale, 167-192 (1999).

M.D. Fairchild, A victory for equivalent background — On average, *IS&T/SID 7th Color Imaging Conference*, Scottsdale, 87-92 (1999).

G.J. Braun and M.D. Fairchild, Gamut mapping for pictorial images, *TAGA Proceedings*, 645-660 (1999).

G.J. Braun and M.D. Fairchild, Image lightness rescaling using sigmoidal contrast enhancement functions, *Journal of Electronic Imaging* **8**, 380-393 (1999).

G.M. Johnson and M.D. Fairchild, Full-spectral color calculations in realistic image synthesis, *IEEE Computer Graphics & Applications* **19:4**, 47-53 (1999).

M.D. Fairchild, and G.M. Johnson, Color appearance reproduction: Visual data and predictive modeling, *Color Research and Application* **24**, 121-131 (1999).

G.J. Braun and M.D. Fairchild, Image lightness rescaling using sigmoidal contrast enhancement functions, *Color Imaging: Device Independent Color, Color Hardcopy, and Graphic Arts IV, Proc. SPIE* **3648**, 96-107 (1999).

G.J. Braun, F. Ebner, and M.D. Fairchild, Color gamut mapping in a hue-linearized CIELAB color space, *IS&T/SID 6th Color Imaging Conference*, Scottsdale, 163-168 (1998).

G.M. Johnson and M.D. Fairchild, Computer synthesis of spectroradiometric images for color imaging systems analysis, *IS&T/SID 6th Color Imaging Conference*, Scottsdale, 150-153 (1998).

E.D. Montag and M.D. Fairchild, Color gamut mapping: Evaluation of chroma clipping techniques for three destination gamuts, *IS&T/SID 6th Color Imaging Conference*, Scottsdale, 57-61 (1998).

F. Ebner, and M.D. Fairchild, Development and testing of a color space (IPT) with improved hue uniformity, *IS&T/SID 6th Color Imaging Conference*, Scottsdale, 8-13 (1998).

S.N. Pattanaik, M.D. Fairchild, J.A. Ferwerda, and D.P. Greenberg, Multiscale model of adaptation, spatial vision, and color appearance, *IS&T/SID 6th Color Imaging Conference*, Scottsdale, 2-7 (1998).

D.R. Wyble and M.D. Fairchild, Quantitative testing of color appearance models using the Munsell renotation data, *ISCC Annual Meeting*, Interest Group I, Baltimore, (1998).

G.M. Johnson and M.D. Fairchild, Computer synthesis of spectroradiometric images for color imaging systems analysis, *ISCC Annual Meeting*, Contributed Posters, Baltimore, (1998).

S.N. Pattanaik, J.A. Ferwerda, M.D. Fairchild, and D.P. Greenberg, A multiscale model of adaptation and spatial vision for image display, *Proceedings of SIGGRAPH 98*, 287-298 (1998).

F. Ebner and M.D. Fairchild, Finding constant hue surfaces in color space, *Color Imaging: Device Independent Color, Color Hardcopy, and Graphic Arts III, Proc. SPIE 3300*, 107-117 (1998).

A. Vaysman and M.D. Fairchild, Degree of quantization and spatial addressability trade-offs in perceived quality of color images, *Color Imaging: Device Independent Color, Color Hardcopy, and Graphic Arts III, Proc. SPIE 3300*, 250-261 (1998).

CIE, The CIE 1997 Interim Colour Appearance Model (Simple Version), *CIECAM97s*, *CIE Pub. 131* (1998).

M.D. Fairchild, The ZLAB color appearance model for practical image reproduction applications, *Proceedings of the CIE Expert Symposium '97 on Colour Standards for Image Technology*, *CIE Pub. x014*, 89-94 (1998).

M.D. Fairchild, Progress report of CIE TC1-34 with an introduction of the CIECAM97s colour appearance model, *Proceedings of the CIE Expert Symposium '97 on Colour Standards for Image Technology*, *CIE Pub. x014*, 77-80 (1998).

K. Takemura and M.D. Fairchild, Some considerations about corresponding hues across cross-media color reproductions, *Proceedings of the CIE Expert Symposium '97 on Colour Standards for Image Technology*, *CIE Pub. x014*, 104-115 (1998).

C.M. Daniels, E.J. Giorgianni, and M.D. Fairchild, The effect of surround on perceived contrast of pictorial images, *IS&T/SID 5th Color Imaging Conference*, Scottsdale, 12-16 (1997).

G.J. Braun and M.D. Fairchild, Techniques for gamut surface definition and visualization, *IS&T/SID 5th Color Imaging Conference*, Scottsdale, 147-152 (1997).

F. Ebner and M.D. Fairchild, Gamut mapping from below: Finding minimum perceptual distances for colors outside the gamut volume, *Color Research and Application* **22**, 402-413 (1997).

M.D. Fairchild and K.M. Braun, Investigation of color appearance using the psychophysical method of adjustment and complex pictorial stimuli, *AIC Color 97*, Kyoto, 179-186 (1997).

K. Takemura, M.D. Fairchild, and R.S. Berns, The preferred reproduction of skin color and chromatic adaptation, *AIC Color 97*, Kyoto, 574-577 (1997).

E.D. Montag and M.D. Fairchild, Evaluation of gamut mapping techniques using simple rendered images and artificial gamut boundaries, *IEEE Transactions on Image Processing* **6**, 977-989 (1997).

R.L. Alfvén and M.D. Fairchild, Observer variability in metameric color matches using color reproduction media, *Color Research and Application* **22**, 174-188 (1997).

K.M. Braun and M.D. Fairchild, Testing five color appearance models for changes in viewing conditions, *Color Research and Application* **22**, 165-174 (1997).

T. Tanaka, R.S. Berns, and M.D. Fairchild, Predicting the image quality of color overhead transparencies using a color-appearance model, *Journal of Electronic Imaging* **6**, 154-165 (1997).

M.D. Fairchild, Predicting color appearance of simple and complex stimuli, in *John Dalton's Colour Vision Legacy*, Taylor & Francis, London (1997).

M.D. Fairchild, Standard guide for designing and conducting visual experiments, *ASTM E1808-96* (1996).

K.M. Braun and M.D. Fairchild, Psychophysical generation of matching images in cross-media color reproduction, *IS&T/SID 4th Color Imaging Conference*, Scottsdale, 214-220 (1996).

M.D. Fairchild and L. Reniff, A pictorial review of color appearance models, *IS&T/SID 4th Color Imaging Conference*, Scottsdale, 97-100 (1996).

M.D. Fairchild, Modeling observer metamerism through Monte Carlo simulation, *OSA Annual Meeting*, 126 (1996).

M.D. Fairchild, Refinement of the RLAB color space, *Color Research and Application* **21**, 338-346 (1996).

M.D. Fairchild, Using color-appearance models in device-independent color imaging, *Proceedings of 5th International Conference on High Technology: Imaging Science and Technology - Evolution and Promise*, Chiba, Japan 128-135 (1996).

M.D. Fairchild, CIETC1-34: Testing colour appearance models, *CIE Symposium on Colour Standards for Image Technology*, CIE Pub. x010, 46 (1996).

E.D. Montag and M.D. Fairchild, Simulated color gamut mapping using simple rendered images, *Proc. SPIE* **2658**, San Jose, 316-325 (1996).

M.D. Fairchild, A.A. Lester, and R.S. Berns, Accurate color reproduction of CRT-displayed images as projected 35mm slides, *Journal of Electronic Imaging* **5**, 87-96 (1996).

K.M. Braun, M.D. Fairchild, and P.J. Alessi, Viewing environments for cross-media image comparisons, *Color Research and Application* **21**, 6-17 (1996).

M.D. Fairchild, Considering the surround in device-independent color imaging, *Color Research and Application* **20**, 352-363 (1995).

M.D. Fairchild and R.L. Alfvén, Precision of color matches and accuracy of color matching functions in cross-media color reproduction, *IS&T/SID 3rd Color Imaging Conference*, Scottsdale, 18-21 (1995).

K.M. Braun and M.D. Fairchild, Evaluation of five color-appearance transforms across changes in viewing conditions and media, *IS&T/SID 3rd Color Imaging Conference*, Scottsdale, 93-96 (1995).

E. Pirrotta and M.D. Fairchild, Directly testing chromatic-adaptation models using object colors, *Proceedings of the 23rd Session of the CIE (New Delhi) Vol. 1*, 77-78 (1995).

N. Moroney and M.D. Fairchild, Color space selection for JPEG image compression, *Journal of Electronic Imaging* **4**, 373-381 (1995).

M.D. Fairchild, Testing colour-appearance models: Guidelines for coordinated research, *Color Research and Application* **20**, 262-267 (1995).

M.D. Fairchild, Testing colour-appearance models: Guidelines for coordinated research, *CIE Publication 118/5*, 39-46 (1995).

M.D. Fairchild and L. Reniff, Time-course of chromatic adaptation for color-appearance judgements, *Journal of the Optical Society of America A* **12**, 824-833 (1995).

R.L. Alfvén and M.D. Fairchild, Observer metamerism: Precision of color matches and accuracy of color matching functions, *ISCC Pan-Chromatic Conference*, (1995).

M.D. Fairchild, Visual evaluation and evolution of the RLAB color space, *IS&T/SID 2nd Color Imaging Conference*, Scottsdale, 9-13 (1994).

M.D. Fairchild, R.S. Berns, A.A. Lester, and H.K. Shin, Accurate color reproduction of CRT-displayed images as projected 35mm slides, *IS&T/SID 2nd Color Imaging Conference*, Scottsdale, 69-73 (1994).

A.A. Lester and M.D. Fairchild, Thermochromism of Ektachrome 100 Plus Professional transparencies upon projection, *Journal of Imaging Science and Technology* **38**, 332-338 (1994).

M.D. Fairchild and K. Braun, Testing color appearance models in cross-media image reproduction, *Journal of Photographic Science* **42**, 87-88 (1994).

M.D. Fairchild, Some hidden requirements for device-independent color imaging, *SID International Symposium*, San Jose 865-868 (1994).

M.D. Fairchild, E. Pirrotta, and T.G. Kim, Successive-ganzfeld haploscopic viewing technique for color-appearance research, *Color Research and Application* **19**, 214-221 (1994).

K. Braun and M.D. Fairchild, Viewing environments for cross-media image comparisons, *IS&T's 47th Annual Conference/ICPS*, Rochester 391-396 (1994).

A.A. Lester and M.D. Fairchild, Thermochromism of Ektachrome 100 Plus Professional transparencies upon projection, *IS&T's 47th Annual Conference/ICPS*, Rochester 779-782 (1994).

M.D. Fairchild and K. Braun, Testing color appearance models in cross-media image reproduction, *AIC Interim Meeting: Images in Colour*, Cambridge (1994).

P. Lennie and M.D. Fairchild, Ganglion cell pathways for rod vision, *Vision Research* **34**, 477-482 (1994).

N. Moroney and M.D. Fairchild, Color space selection for JPEG image compression, *IS&T/SID Color Imaging Conference*, Scottsdale, 157-159 (1993).

T.G. Kim, R.S. Berns, and M.D. Fairchild, A comparison of color appearance models using pictorial hardcopy images, *IS&T/SID Color Imaging Conference*, Scottsdale, 72-77 (1993).

M.D. Fairchild and L. Reniff, Time-course of chromatic adaptation, *OSA Annual Meeting Technical Digest Vol. 16*, 253 (1993).

M.D. Fairchild and R.S. Berns, Color appearance specification for cross-media color reproduction, *AIC Color 93*, Budapest C11-01—C11-05 (1993).

M.D. Fairchild, RLAB: A color appearance space for color reproduction, *Device Independent Color Imaging and Imaging Systems Integration, Proc. SPIE 1909*, 19-30 (1993).

M.D. Fairchild, Chromatic adaptation in hard-copy / soft-copy comparisons, *Color Hard Copy and Graphic Arts II, Proc. SPIE 1912*, 47-61 (1993).

M.D. Fairchild and R.S. Berns, Image color appearance specification through extension of CIELAB, *Color Research and Application 18*, 178-190 (1993).

A.D. North and M.D. Fairchild, Measuring color matching functions part I, *Color Research and Application 18*, 155-162 (1993).

A.D. North and M.D. Fairchild, Measuring color matching functions part II: New data for assessing observer metamerism, *Color Research and Application 18*, 163-170 (1993).

M.D. Fairchild, Color Forum: The CIE 1931 Standard Colorimetric Observer: Mandatory retirement at age 65?, *Color Research and Application 18*, 129-134 (1993).

M.D. Stokes, M.D. Fairchild, and R.S. Berns, Precision requirements for digital color reproduction, *ACM Transactions on Graphics 11*, 406-422 (1992).

M.D. Fairchild, Quality color imaging devices poised to enter mass market, *SPIE/IS&T Electronic Imaging Working Group Newsletter 2*, Number 4, 2 (1992).

M.D. Fairchild, Meeting Report: ISCC/TAGA 1992 Williamsburg Conference on Comparison of Color Images Presented in Different Media, *Color Research and Application 17*, 300-302 (1992).

M.D. Fairchild, Chromatic adaptation to image displays, *TAGA 2*, 803-824 (1992).

M.D. Stokes, M.D. Fairchild, and R.S. Berns, Colorimetrically quantified tolerances for pictorial images, *TAGA 2*, 757-778 (1992).

M.D. Fairchild and P. Lennie, Chromatic adaptation to natural and artificial illuminants, *Vision Research 32*, 2077-2085 (1992).

E. Pirrotta and M.D. Fairchild, Testing chromatic adaptation models, ISCC Annual Meeting, Princeton (1992).

B.D. Nystrom and M.D. Fairchild, Perceived image quality of 16:9 and 4:3 aspect ratio video displays, *Journal of Electronic Imaging 1*, 99-103 (1992).

M.D. Fairchild, Chromatic adaptation and color constancy, *Advances in Color Vision Technical Digest, OSA Technical Digest Series Vol. 4*, 112-114 (1992).

M.D. Fairchild and E. Pirrotta, Predicting the lightness of chromatic object colors using CIELAB, *Color Research and Application 16*, 385-393 (1991).



M.D. Fairchild and L. Reniff, Propagation of random errors in spectrophotometric colorimetry, *Color Research and Application* **16**, 360-368 (1991).

M.D. Fairchild, Electronic color image reproduction, *OSA Annual Meeting Technical Digest Vol. 17*, 73 (1991).

M.D. Fairchild, A model of incomplete chromatic adaptation, *Proceedings of the 22nd Session of the CIE (Melbourne)*, 33-34 (1991).

M.D. Fairchild, Formulation and testing of an incomplete-chromatic-adaptation model, *Color Research and Application* **16**, 243-250 (1991).

M.D. Fairchild and E. Pirrotta, Predicting the lightness of chromatic object colors using CIELAB, *ISCC Annual Meeting*, New York (1991).

M.D. Fairchild and P. Lennie, Spatial and temporal properties of chromatic adaptation mechanisms, *OSA Annual Meeting Technical Digest Vol. 15*, 149 (1990).

M.D. Fairchild, D.J.O. Daoust, J. Peterson, and R.S. Berns, Absolute reflectance factor calibration for goniospectrophotometry, *Color Research and Application* **15**, 311-320 (1990).

M.D. Fairchild, Color appearance in softcopy image displays, *Proceedings of SPSE's 43rd Annual Conference*, Rochester, 87-89 (1990).

M.D. Fairchild, A query on error propagation in optical radiation measurements, *CORM Annual Meeting*, Rochester (1990).

M.D. Fairchild, A model of incomplete chromatic adaptation, *ISCC Annual Meeting*, Cleveland (1990).

M.D. Fairchild, *Chromatic Adaptation and Color Appearance*, Ph.D. Dissertation, University of Rochester (1990).

M.D. Fairchild, A novel method for determination of color matching functions, *Color Research and Application* **14**, 122-130 (1989).

M.D. Fairchild, J. Peterson, and R.S. Berns, A principal components analysis of diffuse reflectance standards, *CORM Annual Meeting*, Gaithersburg (1989).

M.D. Fairchild and P. Lennie, Ganglion cell pathways for rod acuity, *OSA Annual Meeting Technical Digest Vol. 11*, 80 (1988).

M.D. Fairchild and D.J.O. Daoust, Goniospectrophotometric analysis of pressed PTFE powder for use as a primary transfer standard, *Applied Optics* **27**, 3392-3396 (1988).

R.S. Berns, M.D. Fairchild, and M.M. Beering, The quantification of illuminant metamerism for four coloration systems via metameric mismatch gamuts, *Color Research and Application* **13**, 346-357 (1988).

M.D. Fairchild, Development of a goniospectrophotometric transfer standard, *OSA Annual Meeting Technical Digest Vol. 22*, 132 (1987).

F. Grum, M.D. Fairchild, and R.S. Berns, Goniospectrophotometric characteristics of common transfer standards with respect to CIE Normal/45 geometry, *Proceedings of the 21st Session of the CIE (Venice)*, Vol. **1**, 134-137 (1987).

F. Grum, M.D. Fairchild, and R.S. Berns, Goniospectrophotometric characteristics of common transfer standards with respect to CIE Normal/45 geometry, *Proceedings of the ISCC Williamsburg Conference on Appearance*, 43-46 (1987).

M.D. Fairchild and R. S. Berns, Implementation of recommended ocular exposure thresholds for the evaluation of xenon flashes, *Journal of Imaging Technology* **13**, 8-14 (1987).

M.D. Fairchild, *Evaluation of Flash and Fluorescent Sources with respect to Recommended Ocular Exposure Thresholds*, M.S. Thesis, Rochester Institute of Technology (1986).

M.D. Fairchild and F. Grum, Thermochromism of ceramic reference tiles, *Applied Optics* **24**, 3432-3433 (1985).

**Invited Presentations:**

M.D. Fairchild, One wine many colors, *IS&T 26th Color & Imaging Conference*, Vancouver, **invited presentation, in press** (2018).

M.D. Fairchild, Color appearance, color order, & other color systems, *ISCC Webinar*, August (2018).

M.D. Fairchild, Color appearance, color order, & other color systems, *ISCC-AIC Munsell Centennial Color Symposium*, Boston (2018).

M.D. Fairchild, Munsell's legacy: Foundation and laboratory, *ISCC-AIC Munsell Centennial Color Symposium*, Boston (2018).

M.D. Fairchild, Color education panel, *ISCC-AIC Munsell Centennial Color Symposium*, Boston (2018).

M.D. Fairchild (Presented By), R.S. Berns, Development of the Munsell color order system, *ISCC-AIC Munsell Centennial Color Symposium*, Boston (2018).

M.D. Fairchild, Individual differences in color matching & adaptation and illumination, *OSA Fall Vision Meeting*, Washington, D.C., *Journal of Vision* **17**, doi:10.1167/17/15/2a (2017).

M.D. Fairchild, Color perception: Contexts and individuals, *American Glass Guild Annual Meeting*, Rochester, May (2017).

M.D. Fairchild, From photon to brain: The perception of a color, *ISCC International Day of Color Webinar*, March 21 (2017).

M.D. Fairchild, Color science: Perceiving color and individual differences, *IS&T Local Chapter*, Rochester (2016).

M.D. Fairchild, From photon to brain: The perception of a color, *IS&T 24th Color & Imaging Conference*, San Diego, 291-293 (2016).

M.D. Fairchild, Individual differences in color matching and adaptation: Importance in lighting, Light + Color: *IES Research Research Symposium III*, Gaithersburg, (2016).

M.D. Fairchild *et al.*, Hard-core panel: Non-convexity of the spectrum locus: A crime against color order? How guilty is human vision?, *IS&T 21st Color & Imaging Conference*, Albuquerque (2013).

M. Melgosa and M.D. Fairchild, *Inspiring future experimental scientists through questions related to colour*, *12th International Conference on Education and Training in Optics & Photonics*, Porto, Portugal, 25 (2013).

M.D. Fairchild, Color scales, *X National Congress of Color*, Valencia, Spain, 1 (2013).

M.D. Fairchild, Observer metamerism, *University of Granada*, Granada, Spain (2013).

M.D. Fairchild, Stimulating future scientists with color, *Parque de las Ciencias*, Granada, Spain (2013).

M.D. Fairchild, Progress and poverty: An inquiry into color appearance modeling and increase of want with increase of wealth, *IS&T/SID 20th Color and Imaging Conference*, Los Angeles, 155- 157 (2012).

M.D. Fairchild, *Color appearance in displays, etc., RPI-NYSERDA Capturing the Lighting Edge: New Color Metrics Seminar*, Troy, (2012).

M.D. Fairchild, *Color appearance models and complex visual stimuli*, SCAD-10, Newport Beach, (2010).

M.D. Fairchild, *The perceptibility of video artifacts: A perspective from color science*, *5th International Workshop on Video Processing and Quality Metrics (VPQM)*, Scottsdale, Paper 65 (2010).

M.D. Fairchild, Color enhancement panel discussion, *IS&T/SID 17th Color Imaging Conference*, Albuquerque, (2009).

M.D. Fairchild, Twenty-five years of research at the Munsell Color Science Laboratory, *ISCC Annual Meeting - MCSL 25th Anniversary Symposium*, Rochester, (2009).

M.D. Fairchild, High, wide, & deep: Displayed image color appearance and perception, *SID International Symposium*, Los Angeles, 780-782 (2008).

M.D. Fairchild, Beyond the locus of spectrally pure colors, *SPIE/IS&T Electronic Imaging*, San Jose, Proc. SPIE Vol. **6807**, 6800702 (2008).

M.D. Fairchild, A color scientist looks at video, *3rd International Workshop on Video Processing and Quality Metrics (VPQM)*, Scottsdale, Invited Paper 1 (2007).

M.D. Fairchild, Color appearance in image displays, *ISCC/CIE Expert Symposium - 75 Years of the CIE Standard Colorimetric Observer*, Ottawa, (2006).

M.D. Fairchild, Why is Color?: The Color Curiosity Shop, *ISCC Annual Meeting*, Ottawa, (2006).

M.D. Fairchild, Image appearance modeling, *OSA Rochester Section*, Rochester, (2005).

M.D. Fairchild, Color appearance modeling: Splicing color science and practical applications, *OSA Fall Vision Meeting*, Rochester, *Journal of Vision* **4**:11, 26 (2004).

M.D. Fairchild, Past and Future Evolution of Color Appearance Science and Technology, *Xerox Distinguished Lecture*, Webster, (2004).

M.D. Fairchild, Colour appearance in imaging, *25th Session of the CIE*, San Diego, W-9 (2003).

M.D. Fairchild, Universe-green beige: Sky-blue pink revisited?, *Syracuse Astronomical Society*, Syracuse, (2003).

M.D. Fairchild and G.M. Johnson, Image appearance modeling, *SPIE/IS&T Electronic Imaging Conference*, SPIE Vol. **5007**, Santa Clara, 149-160 (2003).

M.D. Fairchild, Universe-green beige: Sky-blue pink revisited?, *Astronomy Section, Rochester Academy of Science*, Rochester, (2002).

M.D. Fairchild, Image quality measurement and modeling for digital photography, *International Congress on Imaging Science '02*, Tokyo, 318-319 (2002).

M.D. Fairchild, Progress in color appearance models, *International Congress on Imaging Science '02*, Tokyo, 417-418 (2002).

M.D. Fairchild, Color appearance models, *IEEE Computer Vision & Pattern Recognition '01*, Kauai (2001).

M.D. Fairchild, The physics and perception of color, *American Institute of Physics Industrial Physics Forum*, Rochester (2001).

M.D. Fairchild, Status of CIE color appearance models, , *AIC Color 01*, SPIE Vol. 4421, Rochester, 550-553 (2002).

M.D. Fairchild, Just what is a color space?, *Seybold 2001*, Boston (2001).

M.D. Fairchild, Color appearance: Not your typical color space, *Seybold 2001*, Boston, (2001).

M.D. Fairchild, Modeling color appearance, spatial vision, and image quality, *Color Image Science 2000*, Derby, 1-10 (2000).

M.D. Fairchild, On the perception of brightness and contrast of variegated backgrounds, *ISCC 2nd Panchromatic Conference*, Savannah, 26 (2000).

M.D. Fairchild, The CIECAM97s color appearance model, *ISCC Annual Meeting*, Interest Group I, Baltimore (1998).

M.D. Fairchild, Using color-appearance models in hybrid imaging systems, *IEEE Rochester Section Joint Chapters Meeting*, Rochester (1997).

M.D. Fairchild, Using color-appearance models in device-independent color imaging, *Proceedings of 5th International Conference on High Technology: Imaging Science and Technology - Evolution and Promise*, Chiba, Japan 128-135 (1996).

M.D. Fairchild, Using color-appearance models in device-independent color imaging, *Horizons in Color Science - A Tribute to David L. MacAdam*, Rochester (1996).

M.D. Fairchild, Considering the surround in device-independent color imaging, 1995 C. James Bartleson Lecture, *ISCC Pan-Chromatic Conference*, Williamsburg (1995).

M.D. Fairchild, Some hidden requirements for device-independent color imaging, *SID International Symposium*, San Jose 865-868 (1994).

K. Braun, and M.D. Fairchild, Viewing environments for cross-media image comparisons, *IS&T's 47th Annual Conference/ICPS*, Rochester 391-396 (1994).

M.D. Fairchild, RIT 2° color matching data: Quantifying observer metamerism, *ISCC Annual Meeting*, PC#49, Newport (1993).

M.D. Fairchild, Chromatic adaptation in hard-copy / soft-copy comparisons, *Color Hard Copy and Graphic Arts II, Proc. SPIE 1912* 47-61 (1993).

M.D. Fairchild, Chromatic adaptation to image displays, *ISCC Williamsburg Conference on Comparison of Color Images Presented in Different Media*, Williamsburg (1992).

M.D. Fairchild, *et al.*, Panel Discussion: Device independent color—Achievable? Desirable?, *ISCC Williamsburg Conference on Comparison of Color Images Presented in Different Media*, Williamsburg (1992).

M.D. Fairchild, Color appearance in softcopy image displays, *Proceedings of SPSE's 43rd Annual Conference*, Rochester, 87-89 (1990).

M.D. Fairchild, A novel method for the determination of color matching functions using a visual colorimeter with laser primaries, *ISCC Annual Meeting*, Baltimore (1988).

**Technical Reports:**

R.L. Heckaman and M.D. Fairchild, The Perception of Color as Espoused by Ralph M Evans of The Eastman Kodak Company and Its Extension to What Is Known Now and What Remains to Be Seen, *MCSL Technical Report*, (2004).

M.D. Fairchild, G.M. Johnson, J. Kuang, and H. Yamaguchi, Image Appearance Modeling and High-Dynamic-Range Image Rendering, *MCSL Technical Report*, (2004).

M.D. Fairchild, M.R. Rosen and G.M. Johnson, Spectral and metameric color imaging, *MCSL Technical Report*, (2001).

J.E. Gibson and M.D. Fairchild, Colorimetric characterization of three computer displays (LCD and CRT), *MCSL Technical Report*, (2000).

M.D. Fairchild and D.R. Wyble, Colorimetric characterization of the Apple Studio Display (Flat panel LCD), *MCSL Technical Report*, (1998).

M.D. Fairchild, A simple printer calibration technique for “good-enough” color reproduction of CRT images, *MCSL Technical Report*, (1994).

M.D. Fairchild, MCSL plug-in filter modules for Adobe Photoshop, *MCSL Technical Report*, (1992).

M.D. Fairchild and R.S. Berns, Study of inexpensive printer calibration techniques, *Final Report, Eastman Kodak Project #295-6622-A6005*, (1992).

J.R. Schott, M.D. Fairchild, X. Feng, R. Raqueno, B. Brower, and T. Gallagher, Techniques for measurement of the optical properties of materials, *Report #RIT/DIRS 89/90-51-134*, (1990).

M.D. Fairchild, A model of incomplete chromatic adaptation for calculating corresponding colors, *Report #RIT/DIRS 89/90-64-132*, (1990).

M.D. Fairchild and D.J.O. Daoust, Goniospectrophotometric data for pressed barium sulfate primary transfer standard, *MCSL Technical Report*, (1987).

M.D. Fairchild and D.J.O. Daoust, Goniospectrophotometric data for pressed PTFE primary transfer standard, *MCSL Technical Report*, (1987).

W. Farrell and M.D. Fairchild, Investigation of the accuracy of array radiometry for measuring pulsed radiation sources, *MCSL Technical Report*, (1987).

M.D. Fairchild, Munsell Color Science Laboratory comments on NCSL Information Manual for the Design of a Standards Laboratory, *MCSL Technical Report*, (1987).

M.D. Fairchild, Munsell Color Science Laboratory comments on the NBS Response to the Fourth CORM Report on Pressing Problems and Projected Needs in Optical Radiation Measurements, *MCSL Technical Report*, (1987).

M.D. Fairchild, The present status and future directions of the development of the Munsell Color Science Laboratory as an intermediate calibration laboratory for spectrophotometry, *MCSL Technical Report*, (1987).

M.D. Fairchild, and R.S. Berns, Long-term calibration of a diode-array radiometer, *MCSL Technical Report*, (1986).

**Community Activities:**

George Eastman House International Museum of Photography and Film, Gallery Docent, 1991-1994

Member: Several Museums, Environmental, Meditative, and Humanistic Organizations.