



David R. Wyble
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EMPLOYMENT AND EXPERIENCE

President and Founder, Gray Sky imaging, Inc, Webster NY.

June 2021 to present.

Responsibilities include:

- Coordinate technical projects across Gray Sky Imaging product offerings including: reflective and transmissive imaging targets.
- Manage consulting activities including: custom imaging solutions; custom imaging target development.
- Interface with customers: definition of requirements; preparation of quotations; report generation; billing; and follow-up.
- Project management for all Gray Sky Imaging activities.

President, Avian Rochester, LLC, Webster NY.

June 2010 to present.

Responsibilities include:

- Coordinate technical projects across Avian Rochester product offerings including: color and fluorescent standards; color measurement techniques; camera and imaging characterization.
- Manage consulting activities including: custom color measurement; product measurements and comparisons; color dispute verification and resolution; general legal and patent efforts.
- Interface with customers: definition of requirement; preparation of quotations; report generation; billing; and follow-up.
- Project management for the development of new products for the color and imaging fields.
- Maintain measurement capabilities to facilitate the needs defined by product lines and customers.

A detailed list of past projects are described at www.avianrochester.com/solutions.php

Director of Color Science, Avian Technologies LLC, New London, New Hampshire

November 2006 to present.

Responsibilities include:

- Act as technical expert for color, colorimetry, and goniospectrophotometry, as well as the related material standards and instrumentation.
- Perform certified measurements; interact with customers to align requirements with measurement procedures; create formal measurement certifications; document procedures.
- Engage in customer outreach via: conference attendance and participation; blog postings; and exhibitions.
- Technical product manager for color reference standards, fluorescent whiteness standards, and color measurement instrumentation.

Senior Scientist, FluxData Inc, Rochester NY.

September 2012 to December 2017.

Responsibilities included:

- Product development and engineering support for color science and imaging product lines.
- Special projects related to color imaging and color measurement.

Color Scientist, Munsell Color Science Laboratory, Rochester Institute of Technology.
January 1997 to December 2012. (part time January 2013 - present)

Responsibilities included:

- Performing independent research. The research focus was generally related to device characterization and instrumentation for color measurement (publications listed below).
- Maintaining technical competence in the fields of color science and color imaging. This requires attending at least one conference per year, and various local classes and seminars relating to color and imaging.
- Teaching and providing educational support. This included teaching short industrial courses and undergraduate and graduate classes, as well as the development of these materials. Development and teaching of for-credit college coursework included: undergraduate Imaging Science course, *Programming for Imaging Science*; and its follow-on, *Programming for Imaging Science II*; as well as graduate Imaging Science *Programming for Imaging Scientists*; and the graduate Color Science course *Color Measurement Laboratory I*.

Member, Research and Technology Staff, Wilson Center for Research and Technology, Xerox Corporation
May, 1992 to December 1996.

Responsibilities included:

- Performing modeling and simulation of color electrophotographic systems. This included interacting with product development personnel and properly designing both virtual and hardware testing procedures. The goal was prediction of various image quality properties of color printers.
- Implementing the halftoning input subsystem to the overall system model. This involved collaborating with the image processing team and incorporating their halftoning algorithms into the system model.
- Porting large legacy simulation environment (30K lines of FORTRAN) and accompanying subsystem models. The modeling environment and subsystem models were interfaced and then implemented on a modern operating system (SunOS Unix).
- Mentoring of new hire modeling team members. This included training in use of the system models as well as assisting them in becoming productive subsystem or system modelers on their own.

EDUCATION

Ph.D., Chiba University, Chiba, Japan, 2007.

Dissertation title: *Color Measurement for Device Characterization*.

MS Color Science, Rochester Institute of Technology, 1998.

Master's project: *A Critical Review of Spectral Models Applied to Binary Color Printing*.

BS Computer Science, SUNY Brockport, 1992.

JOURNAL ARTICLES

Wyble, D.R., Berns, R.S, Quantifying Spectral Sensitivity Mismatch Using a Metameric Color Rule, *Journal of Imaging Science & Technology* **62**, 330-335 (2018).

Wyble, D.R.; Rich, D.C., Evaluation of Methods for Verifying the Performance of Color-Measuring Instruments. Part I: Repeatability, *Color Research and Application*, **32**, 116-175 (2007).

Wyble, D.R.; Rich, D.C., Evaluation of Methods for Verifying the Performance of Color-Measuring Instruments. Part II: Inter-Instrument Reproducibility, *Color Research and Application*, **32**, 176-194 (2007).

Reprint of H.E.J. Neugebauer, The Theoretical Basis of Multicolor Letterpress Printing, Commentary by M.Pearson, Translation by Wyble, D.R., Kraushaar, A., *Color Research & Application* **30**, 322-331, (2005).

Wyble, D.R., Rosen, M.R., Color Management of Four-Primary DLP Projectors, *Journal of Imaging Science & Technology* **50**, pp. 17-24, (2005).

Wyble, D.R., Fairchild, M.D., Prediction of Munsell Appearance Scales Using Various Color Appearance Models, *Color Research & Application* **25**, 132-145 (2000).

Wyble, D.R., Berns, R.S, A Critical Review of Spectral Models Applied to Binary Color Printing, *Color Research & Application* **25**, 4-19 (2000).

PROCEEDINGS, TECHNICAL REPORTS, AND PRESENTATIONS

Wyble, D.R., Berns, R.S., Improved Transmittance Calibration Target, *2AND3D Photography*, Amsterdam (2024).

Berns, R.S, Wyble, D.R., A New Transmission Target for Cultural Heritage Imaging, *IS&T Archiving 2024*, Washington DC (2024).

Wyble, D.R., A New Process for Transmittance Imaging, *Cultural Heritage Imaging Professionals Conference*, Los Angeles (2024).

Berns, R.S., Wyble, D.R., Improving Color Accuracy When Imaging Cultural Heritage Using a Bi-Color LED Source, *IS&T Archiving 2023*, Oslo, Norway (2023).

Wyble, D.R. Spectral Imaging Method for Transmissive Media, *IS&T Archiving 2021*, presented online (2021).

Wyble, D.R. Evaluating Color Performance, *IS&T DigiTIPS Series* (2020).

Wyble, D.R., Heading down the Profiling Rabbit Hole, *CORM 2019 Annual Technical Conference and 12th Biennial Joint Meeting of the CNC/CIE and CIE-USNC*, Ottawa ON, Canada (2019).

Wyble, D.R., Berns, R.S. Quantifying Spectral Sensitivity Mismatch Using a Metameric Color, *IS&T Color & Imaging Conference, Vancouver BC, Canada* (2018).

Wyble, D.R., Spectral Implications for Camera Calibration Target, *IS&T Archiving 2018*, Washington DC (2018).

Wyble, D.R., Capabilities and Benefits of Controllable LED Illumination, *TAGA's Annual Technical Conference*, Baltimore MD (2018).

Wyble, D.R., Use of Multi-LED Illumination Systems, What can I do? What can't I do?, *SPECAD RETAC® 2017*, Milwaukee WI (2017).

Wyble, D.R., Dependence of Bidirectional Instrument Performance on Sample BRDF Properties, *ISCC/CORM Joint Conference*, Troy, NY (2017).

Wyble, D.R., Next Generation Camera Calibration Target for Archiving, *IS&T Archiving 2017*, Riga, Latvia (2017).

Wyble, D.R.; Seymour, J., Investigation of the Implementation Aspects of the M1 Condition, *67th Annual Meeting of the Technical Association for the Graphic Arts*, Albuquerque, NM, March, 2015.

Nadal, M.E.; Wyble, D.R.; Zarobila, C.J., Book chapter: "Color and Appearance," *Spectrophotometry: Accurate Measurement of Optical Properties of Materials*, Edited by Germer T.A.; Zwinkels, J.C.; Tsai, B.K. Elsevier (2015).

Hensley, B; Wyble, D.R., Spectral Imaging Using a Liquid Crystal Tunable Filter, *prepared for Andrew W. Mellon Foundation, Rochester Institute, College of Science, Center for Imaging Science, Munsell Color Science Laboratory, Rochester, New York, United States* (2013).

Berns, R.S.; Chen, T.; Wyble, D.R.; Chen, L., Practical Total Appearance Imaging of Paintings, *IS&T, Archiving Conference, Copenhagen, Denmark, June* (2012)

Fairchild, M.D.; Wyble, D.R., hdr-CIELAB and hdr-IPT: Simple Models for Describing the Color of High-Dynamic-Range and Wide-Color-Gamut Images, *IS&T/SID, IS&T/SID Color Imaging Conference, Albuquerque, New Mexico, United States* (2010)

Wyble, D.R.; Kehren, K.; Urban, P.; Dörsam, E., Repeatability analysis of multiangle spectrophotometers, *Joint Meeting of ISCC/ASTM E12/CIE Div. 1, Princeton University, June 14 – 18, 2010.*

Wyble, D.R.; Berns, R.S., Validating the Accuracy of the MCSL Imaging Goniospectrometer, *prepared for The Andrew W. Mellon Foundation, Rochester Institute of Technology, College of Science, Center for Imaging Science, Munsell Color Science Laboratory, Rochester, New York, United States* (January 2010)

Wyble, D.R., Fluorescent Excitation from White LEDs, *Council for Optical Radiation Measurements, Council of Optical Radiation Measurements Annual Meeting, Troy, New York, USA* (2008)

Fairchild, M.D.; Wyble, D.R.; Johnson, G.M., Matching image color from different cameras, *IS&T/SPIE Symposium on Electronic Imaging: Science and Technology, San Jose, California* (2008)

Wyble, D.R., Book chapter: "Color Measurement," *The Focal Encyclopedia of Photography, Fourth Edition Ed., Elsevier, Amsterdam, Limburg, Netherlands* (2007)

Wyble, D.R.; Brill, Michael H.; Rich, Danny C.; Fortini, Peter, Considerations and Shortfalls of Instrument Evaluation Using ASTM E2214, *ISCC, Inter-Society Color Council Annual Meeting, Kansas City, Missouri, United States* (April 2007)

Fairchild, M.D.; Wyble, D.R., Mean Observer Metamerism and the Selection of Display Primaries, *IS&T's 15th Color Imaging Conference, Albuquerque, New Mexico, pp. 151-156* (2007).

Wyble, D.R., Comparison of Methods for Verifying the Accuracy of Color Measuring Instruments, *ISCC, Inter-Society Color Council Annual Meeting, Ottawa, Ontario, Canada* (2006)

Wyble, David R.; Rich, Danny C., Comparison of Repeatability Metrics for Color Measurement Instruments, *ISCC, ISCC Special Topics Conference on Precision and Accuracy in the Determination of Color Images, Scottsdale, Arizona, USA* (November 2005)

Rich, Danny C.; Wyble, David R., Comparison of Reproducibility Metrics for Color Measurement Instruments, *ISCC, ISCC Special Topics Conference on Precision and Accuracy in the Determination of Color Images, Scottsdale, Arizona, USA* (November 2005)

Heckaman, R.L.; Fairchild, M.D.; Wyble, D.R., The Effect of DLP Projector White Channel on Perceptual Gamut, *Thirteenth Color Imaging Conference, Scottsdale, Arizona, pp. 205-210* (2005).

Wyble, D.R., Long-Term Data Projector Color Performance Test, white paper written for Texas Instruments, (2004).

Wyble, D.R., Rosen, M.R., Color Management of DLP Projectors, *IS&T's 12th Color Imaging Conference, Scottsdale, 228-232* (2004).

Wyble, D.R., H. Zhang, Colorimetric Characterization Model for DLP Projectors, *IS&T's 11th Color Imaging Conference, Scottsdale, 346-350* (2003).

Wyble, D.R., J.L. Laird, Precision and Accuracy of Commercial Spectrophotometers, *ISCC's Symposium on Color & Appearance Instrumentation, Chicago, (2003).*

F.H. Imai, D.R. Wyble, R.S. Berns, D.-Y. Tzeng, A Feasibility Study of Spectral Color Reproduction, *Journal of Imaging Science & Technology Tech* **47**, 549-559 (2003).

D Wyble, D.R., Analysis of Spectrophotometer Specular Performance Using Goniophotometric Information, *Fourth Oxford Conference on Spectrometry*, Davidson College, Davidson, NC, *Proc. SPIE* **4826** 98-103 (2002).

Imai, F., Rosen, M.R., Wyble, D.R., Berns, R.S., Tzeng, D., Spectral reproduction from scene to hardcopy I: Input and Output, *Proc SPIE* **4306**, 346-357 (2001).

Rosen, M.R., Fairchild, M.D., Johnson, G.M., Wyble, D.R., Color Management within a Spectral Image Visualization Tool, *IS&T's 8th Color Imaging Conference*, Scottsdale, AZ, November 2000.

Wyble, D.R., Fairchild, M.D., Quantitative Evaluation of Color Appearance Models Using the Munsell Renotation Data, Inter-Society Color Council 67th Annual Meeting, October 2-5, 1998, Baltimore, MD.

Fairchild, M.D.; Wyble, D.R., Colorimetric Characterization of the Apple Studio Display (Flat Panel LCD), Munsell Color Science Laboratory Technical Report, July 1998.

PROFESSIONAL MEMBERSHIPS AND ACTIVITIES

Current memberships (2024)

Society for Imaging Science and Technology (IS&T);
Inter-Society Color Council (ISCC);
Council of Optical Radiation Measurements (CORM);
ASTM.

Member, Executive Committee, Inter-Society Color Council:

President-elect: 2019-2020;

President: 2022-2022;

Past President: 2023-2024.

General Co-Chair, ISCC *Color Impact 2025, Color As Communication*, Rochester NY, June 2025.

General Chair, ISCC *Color Impact 2023, Color and Human Experience*, Rochester NY, June 2023.

Series Chair, IS&T *DigiTIPS 2020*.

Member, Board of Directors, Inter-Society Color Council 2008-2011, 2015-2017.

Member, Steering Committee, IS&T *Archiving Conference* (2021).

Co-Chair, Short Courses, IS&T *Archiving Conference* (2019).

Registrar, Munsell Centennial Color Symposium, Joint ISCC/AIC Conference, Boston MA (2018).

Short Course instructor, IS&T *Electronic Imaging*, (2018).

Short Course instructor, IS&T *Archiving Conference*, various years, 2017-present.

General Chair, Inter-Society Color Council Annual Meeting, November 2016.

Conference Committee, Inter-Society Color Council Annual Meeting, October 2012.

Technical Co-chair, ISCC/CORM Joint Meeting *Lighting in Art, Commercial, and Retail Spaces*, March 2010

General Chair, Inter-Society Color Council Annual Meeting, June 2009.

Reviewer, IS&T *Color and Imaging Conference*, various years.

Reviewer, IS&T *Archiving*, various years.

Reviewer, *Color research and Applications*, various years.

Short Course instructor, IS&T *Color and Imaging Conference*, various years 2007-present.

Session Chair, CORM 2004: *Advances in Color and Appearance Metrology*, May 2004.

Publicity Chair, International Colour Association 2001 Quadrennial Congress: *AIC 2001 Rochester*.

Chair, Web Committee, Inter-Society Color Council, 1998-2020.

AWARDS AND PATENTS GRANTED

B.E. Thayer, D.R. Wyble, U.S Patent #4,819,031, *Rotating Vane for toner transport for blade cleaning on horizontal surfaces*, (1989)

M.A. Gwaltney, D.R. Wyble, U.S Patent #5,867,198, *Method for estimation of toner usage in digital xerographic copiers and printers*, (1999)

Nickerson Service Award (2007) awarded by the Inter-Society Color Council

D.R. Wyble, U.S. Patent #10,872,582, *Method and apparatus for increased color accuracy of display by compensating for observer's color vision properties* (2020).

IS&T Service Award (2021) awarded by the Society for Imaging Science and Technology

D.R. Wyble, P. Igoe, U.S. Patent # 11,410,400, *Method and system for maintaining color calibration using common objects* (2022).

D.R. Wyble, U.S. Patent #11,593,971, *Apparatus And Methods For Dynamic White Point Compensation To Improve Perceived Color Of Synthetic Content* (2023).

D.R. Wyble, L. Kerofsky, R. Neff, U.S. Patent # 11,727,321 *Method For Rendering Of Augmented Reality Content In Combination With External Display* (2023).

D.R. Wyble, U.S. Patent # 11,908,234 *Method And Apparatus To Estimate Scene Illuminant Based On Skin Reflectance Database* (2024).

D.R. Wyble, L. Kerofsky, R. Neff, U.S. Patent # 11,995,578 *Method For Rendering Of Augmented Reality Content In Combination With External Display* (2024).

D.R. Wyble, P. Igoe, U.S. Patent # 12,086,947, *Method and system for maintaining color calibration using common objects* (2024).

D.R. Wyble, U.S. Patent # 12,444,229 *Method And Apparatus To Estimate Scene Illuminant Based On Skin Reflectance Database* (2025).

CONSULTING AND OTHER PROFESSIONAL ACTIVITIES

Many of my previous projects are described on my company website "Solutions" page:

www.avianrochester.com/solutions.php

These are fields in which I have been engaged in consulting and/or expert services:

- Projector color analysis (patent defense)
- Custom color measurement analysis and services (patent defense and analysis)
- Display analysis and characterization (patent analysis)
- Color measurements in the field (trademark protection)
- Color measurement instrument analysis
- Custom color formulation
- ...and much more