

Prologue: one artist's journey from traditional colour theory to the Colour Literacy Project

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This is an account of my evolution as an artist, colour theorist, and educator, an experience which may serve to inform a new 21st century paradigm for colour education. Here's how it happened.

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Hero's Journey I: Leafcutter Ant, Sunrise, 16"x20"
Gouache on Paper, Luanne Stovall, 2017

Asking the question

In 2003 I was invited to teach a colour course at the School of the Museum of Fine Arts (SMFA) in Boston, the studio art campus of Tufts University where I was working as a graduate student in painting. Apparently, a successful course had not been offered in years. Like fellow professors in university art departments across the country, the SMFA faculty had directed their content toward painters, concentrating primarily on paint mixing and colour relationships in works of art. Accepting the invitation was a no-brainer. Figuring out what to teach was another matter, because I had inherited a failed colour education model.

Since the late 20th century, visual artists have increasingly adopted practices other than traditional painting (photography, film, video, conceptual art, installation art, performance art, graphic design, and game design to name a few). This is one reason why the standard practice of basing a colour course primarily on paint mixing exercises had become increasingly irrelevant, stuck in a cultural time warp. Another factor behind the ‘death’ of painting was the advent of new digital technologies that offer a rich gamut of colours generated with light, rather than pigments. I wondered, if students choose not to work with paint, did that foretell the death of colour education? It seemed likely; rigor mortis was already well underway.

On the other hand, if there is more to colour than paint mixing, then what might an updated colour course look like? I had no clue. Even though I’m an art teacher’s daughter and attended several highly regarded art schools, I never had an opportunity to take a colour course. But I was determined to find out. Colour is my muse. Throughout my life, I’ve been mesmerised by colour’s awe-inspiring manifestations and unfathomable beauty. I knew that if colour is not taught in a relevant and engaging way, it certainly isn’t colour’s fault. So, I asked myself a question, *What is colour?* To track down answers, I would need to research colour from other perspectives, particularly colour science, since colour perception is an essential information-gathering tool not only for painters, but for almost everyone. This decision would catapult me from the comfort of my ‘art silo’ into uncharted waters, changing my life in the process.



Rusting grain silos symbolise the myopic ‘silo model’ that discourages cross-pollination between disciplines.

The starving artist

As I began to peel back the layers of colour’s ephemeral nature, I stumbled into a cultural ‘smoking gun’, an entrenched phenomenon that provided insight into the broken state of colour education. Meet the ‘Starving Artist’. Seduced by its dark charms, generations of artists bought into the idea of Art for Art’s sake, a romantic delusion that art is “pure”, segregated from everyday upheavals and the soul-sucking demands of the commercial marketplace. I am familiar with this paradigm because I am a painter; I grew up drinking the Kool Aid. In reality though, nothing could be farther from the truth. Art’s superpower has always been its visceral connection to life’s beating heart, the magnificent hot mess that we inhabit as humans.

Before I could decide what colour is, I would have to make up my mind about what art is — or isn’t. The trouble stems from the fact that colour has been conflated with art and painters for centuries. This

helps to explain why the only tool in our colour tool kit was a colour wheel that we learned about in kindergarten. Armed with red, yellow, and blue paint, our assignment was to mix a colour circle with equal intervals from warm to cool. Red and blue were supposed to make purple. That didn't go so well. Nonetheless, the gospel of red, yellow, and blue primary colours prevailed. The fact that they retired decades ago was never mentioned. Apparently, it didn't matter. Neither did colour's relationship to light, information about the pigments, why we see colours differently, why colours appear to change next to other colours, why pink was assigned to girls and blue for boys, or whether black and white are colours. Turning a blind eye to colour science, colour interaction, and the cultural history of colour made as much sense to me as the notion that art -- or any discipline for that matter -- should be confined to a silo. My choice had become obvious. I would embrace art as an ever-evolving interdisciplinary practice and follow the colour trail wherever it led. I titled my new course *A New Field Guide to Colour* and took a deep dive down a very promising rabbit hole.

A New Field Guide to Colour (15-week course, 60 hours)

The first issue I addressed was colour vision. An opportunity appeared on my doorstep when Dr. Margaret Livingstone, professor of neurobiology at Harvard Medical School, published *Vision and Art, The Biology of Seeing* (2002). Harvard was just around the corner from the Museum School. So, I hatched an idea that would become a foundational pillar of my future colour courses. Why not invite content experts to share state-of-the-art colour knowledge with the students, rather than read about it in an outdated textbook?

Through Dr. Livingstone's lab, I was put in touch with Xaq Pitkow¹, a neuroscience postdoctoral student working in a lab next door to hers. Xaq accepted the challenge. I posted a sign inviting all interested students to join us for his talk about how we see in colour. I had a hunch that this subject could be a game changer if it was presented in the right way, and my hope was that Xaq could capture their interest long enough to make the effort worthwhile. On the day of the event, the studio was packed full of art students -- apparently, I wasn't the only one who was curious about colour vision! Xaq nailed it. He borrowed a drawing pad and proceeded to pull back the curtains on the nature of visible light, the mechanics of the retina, and the enigmatic workings of the visual cortex in our brain. He explained that colour is a mental construct. It is not a property of objects, and it is not 'out there' in the world. There was a feeling of palpable electricity in the room as jaws dropped and eyes began to shine. Everybody had questions. How do we dream in colour? Does my dog see colour? What does it mean to be colourblind? No one wanted to leave when class was over. Clearly, we were addressing a major gap in students' understanding of colour.

Colour Designer and Consultant Ingrid Calvo Ivanovic confirmed the need for an updated model in her thesis project *An analysis of the state of the art of colour training in design education during the last decade* (2022), "If we consider only the universities that teach design in Western countries (not professional institutes or academies) and which are part of the QS World University Rankings we find that if each course analysed (103) corresponded to one of the universities in the ranking (1745), only 5.9% of them would include colour in their design programmes. In addition, the analysis showed that the number of hours devoted to the subject is very low, which can be understood as a confirmation of the knowledge gap."

¹ Xaq Pitkow is jointly affiliated with Baylor College of Medicine's Department of Neuroscience and the Center for Neuroscience and Artificial Intelligence at Rice University: <https://xaqlab.com/>.



Pieter Breugel the Elder, Blind Leading the Blind, Museo di Capodimonte, Naples, Italy (1568).

20 years and 10,000 rabbit holes later

In the years that followed, a new interdisciplinary model for colour education continued to evolve. In this updated STEAM model (Science, Technology, Engineering, Arts, Math), the phenomenon of colour is transformed from a niche topic for painters to a dynamic interdisciplinary field that is deeply woven into our lives.

In the fall of 2006, I moved to Austin to teach in the Department of Art and Art History at the University of Texas. Buoyed by the success of my Boston colour course (2003-2006), I looked forward to continuing my colour research and exploring new opportunities. I was sure that the faculty (especially the painters) would share my enthusiasm. That was not the case. Though a handful of faculty members voiced their support, it became painfully clear that nothing was going to happen any time soon. The dreaded silo mentality was alive and well. I would have to expand my scope and look elsewhere.

The University of Texas at Austin (UT) is one of the largest research institutions in the country. Surely, I could track down an ally, and I was determined to find one. Over the next several months I scoured the websites of departments across campus searching for state-of-the-art colour researchers. Eventually, my journey led me to Dr. Nancy Kwallek, Chair of Interior Design in the School of Architecture. We hit it off. Dr. Kwallek's research focused on the effects of interior environments (specifically colour and light) on the health and productivity of individuals. She was intrigued by the prospect of an innovative science-based colour education model that transcended the tired pedagogy that had infiltrated mainstream colour courses.

Living Colour (15-week course, 45 hours)

Based on my SMFA course, we developed Living Colour as a Freshman Signature Course for students from all disciplines. The curriculum included additive and subtractive colour systems, curated readings,

individual colour research projects, and field trips across the forty-acre campus (and beyond) to learn from experts about how colour operates in their field. Examples included costume and lighting design, film, astronomy, biology, anthropology, interior design, landscape architecture, healthcare design, art history, printmaking, branding and marketing, colour trend forecasting, and visual communications. Every semester, the highlight for the students was always Xaq Pitkow's guest lecture about human colour perception. He had not lost his magic touch! Dr. Kwallek and I team-taught *Living Colour* from 2007-2010. She continued to teach the course from 2010 until her retirement in 2014.

Colour Fundamentals (11-week course, 44 hours)

In 2010, I branched out from UT to teach Colour Fundamentals at the Art Institute of Austin, where a diverse body of students majored in disciplines from graphic and web design to fashion marketing and culinary arts. I decided to introduce a colour survey as an ice-breaker exercise on the first day of class. Question 1: *What is colour?* Question 2: *Is black a colour?* Question 3: *Is white a colour?* Question 4: *What are the primary colours?* Question 5: *What do you want to learn about colour?* My takeaway from this exercise confirmed what I already suspected: the current state of colour education is fundamentally broken. Answers to the first question were all over the map. Questions 2 and 3 revealed the extent to which colour is considered synonymous with hue (only one of three dimensions of colour that can be mapped in a specific colour system). This data convinced me to emphasise the central role of black, white, and grey as achromatic colours. I dubbed them *The Great Achromatics* because of the primal significance of darkness and light in the process of colour perception. The question about primary colours revealed that most students had only learned about red, yellow, and blue, the ancient triad that is increasingly irrelevant to our 21st century colour experience. Throughout the course, we explored red, green, blue primaries of the additive system and cyan, magenta, yellow of the subtractive system (that everyone loaded into their colour printers but didn't know exactly why). Question 5 exposed an overwhelming interest in colour psychology and colour's uncanny ability to affect us on a deep emotional level.

Advanced Colour, Strategies and Solutions (15-week course, 45 hours)

The next course I developed was an upper-level interdisciplinary course at UT titled *Advanced Colour, Strategies and Solutions*, offered through the School of Architecture in 2015. I designed the course as a seminar with modules that included several colour interaction labs, 12 Chromatic Strategies for colour design, guest speakers from multiple industries, a Slow Looking Colour Lab at the Blanton Museum of Art, and an edible 12-course *Dada Dinner in 12 Chromatic Strategies* to celebrate the last day of class.

21st Century Colour Module, Art & Art History Foundation Classes (4-hour introductory colour module)

Meanwhile, my updated approach to interdisciplinary colour education caught the attention of Leslie Mutchler, an innovative printmaker, Foundations Director for Studio Art, and recently appointed Assistant Chair in the Department of Art and Art History. After several animated conversations over coffee, Leslie invited me to create an introductory module about 21st Century Colour and present it to

all students in the foundations classes at the beginning of each semester. She also wrote a university grant to support the development of a full semester course devoted to 21st Century Colour, which supplied me with the necessary funds to work out the organisational structure.

The New Colour (15-week course, 60 hours)

Our collaboration resulted in an interdisciplinary upper-level course that was offered in January 2019. In an unexpected turn of events, Leslie accepted a position as Chair of Foundations at Pratt Institute in Brooklyn, New York. I was thrilled for her and knew that she would continue to make substantial innovations in art education at the university level, but I had lost a trusted ally in the department, a factor that would impact the long-range sustainability of *The New Colour* on campus. I was on my own.

Wednesday Evening Color Salons GUEST SPEAKER SERIES
The University of Texas at Austin

Wednesdays > Spring 2020
6-8 pm
UT Art Building, 1.110 Free and Open to
2301 San Jacinto Blvd. UT and the Public

The New Color (ART 350C) is multidisciplinary course at The University of Texas at Austin, created by artist and color theorist Luanne Stovall, MFA Tufts University.

The New Color explores the dense networks of color codes that course through our lives every day. As a phenomenon of light and a mental construct, color is deeply woven into our experience of the world. The goal of this multidisciplinary course is for students to gain color literacy essential for 21st century communication—not just for artists and designers, but for everyone.

This course is structured as a STEAM Learning Model, positioned at the intersection of Science, Technology, Engineering, the Arts, and Math. Semester modules include weekly color salons with a guest speaker series, hands-on labs, research projects, readings, group discussions, and field trips. Topics addressed include Color Perception, Color Science, Physics of Light, Color Vision, Color Order Systems, Color Mapping, Color Pigments, Color History, Color Interaction, Color Psychology, and a Color Management Tool Kit with 12 Chromatic Strategies.

THE NEW COLOR
ART 350C
Color Literacy = Visual Literacy

All are Invited
FREE AND OPEN TO UT AND THE PUBLIC

JAN 22 **What is Color? 21st Century Color Literacy**
Artist, Color theorist Luanne Stovall, UT Art & Art History

JAN 29 **Hidden in Plain Sight: Painting Codes in Early Modern Europe**
Art Historian Christine Zappella, Inaugural Blanton Fellow of European Painting

FEB 5 **Flatland, Color in Early 20th Century Art**
Art Historian Dr. Linda Henderson, UT Art & Art History

FEB 12 **Color Vision: Why Isn't Purple in the Rainbow?**
Neuroscientist Xaq Pitkow, Baylor College of Medicine, Rice University

FEB 19 **Reinventing the Wheel? Mapping 21st Century Color Space**
Senior Design student Nader Sadoughi, UT Austin

FEB 26 **The Color of Fashion: Cracking the Culture Codes**
Fashion Industry Professionals Michelle Washington, Xitlali Herrera-Salazar

MAR 4 **Beauty & Danger: Color-Coded Nature**
Animal Behaviorist Michael Ryan, UT Integrative Biology, Alex Wild, UT Curator of Entomology, College of Natural Sciences

MAR 11 **Your Color Design Tool Kit**
Artist, Color theorist, Luanne Stovall, UT Art and Art History

MAR 25 **Storytelling in Color for Film & Theatre**
Projection Designer Sven Ortel, UT Theatre and Dance, Filmmaker Nancy Schiesari, UT School of Communications

APR 1 **Underground: Colored Earth & Pigment Power**
Artist, Ochre Archivist Heidi Gustafson, Anthropology Ph.D. candidate Megan Gette

APR 8 **Color Wayfinding: Navigating the Built Environment**
Interior Designer Harmony Edwards, Architect Meeta Morrison

APR 15 **Eating the Rainbow**
Charlotte Herzela, UT Nutritional Sciences

APR 22 **Emotional Triggers & Color Branding**
Graphic Designer Marty Butler, Butler Bros

Poster for *The New Colour* course, University of Texas at Austin, Spring 2020.

The New Colour was offered in the spring of 2019 and 2020 with fifty seats open for students from all disciplines. Every seat was taken. I organised the course with two different components: Wednesday Evening Colour Salons that provided a platform for guest experts from diverse fields, and Friday morning labs for hands-on colour interaction exercises, presentations, field trips, and roundtable discussions for weekly readings. The Wednesday Evening Colour Salons took place in a large auditorium and were free and open to both students and the public. A class journal was required to track weekly investigations and record new questions and insights about the nature of the colour experience. Taking inspiration from the final project in my *Advanced Colour, Strategies and Solutions* course, the last class transformed into a *Dada Dinner in 12 Chromatic Strategies*.

A sample of the course reading list included selections from *Notes of a Painter*, by Henry Matisse; *On the Spiritual in Art*, by Wassily Kandinsky; *Brain Rules* by molecular biologist John Medina; *The Colour Revolution*, by Regina Lee Blaszczyk; *A Taste for the Beautiful*, by evolutionary biologist Michael J. Ryan; *Bright Earth: Art and the Invention of Colour*, by Philip Ball; *Red, The History of a Colour*, by Michel Pastoureau; *A Natural History of the Palette*, by Victoria Findlay; *Pink: The History of a Punk, Pretty, Powerful Colour*, edited by Valerie Steele; *The Alchemy of Paint: Science and Secrets from the Middle Ages*, by Spike Bucklow; *The White Shaman Murals: An Enduring Creation Narrative in the Rock Art of the Lower Pecos* by archaeologist Carolyn Boyd; and *Interaction of Colour*, by Josef Albers.

The New Colour course was not offered on the UT campus after 2020 due to the unbending opposition of the new Chair of Art and Art History, who disagreed fundamentally with the structure and the content of the course — specifically the concept of open-source learning that the Wednesday Evening Colour Salons represented, as well as my belief that first-hand interaction with a roster of guest experts from diverse fields is both engaging and inspiring. She wanted me to give the lectures myself.

21st Century Colour, 5-week course, 15 hours)

In the spring of 2020 I taught *21st Century Colour*, a five-week interdisciplinary course for upper-level students that was offered through UT's Center for Integrated Design in the School of Design and Creative Technologies. I was interested in developing a model for shorter courses that could function as colour education plug-in modules. This pilot course was the first time that I had an opportunity to introduce the updated colour education paradigm to a forward-thinking design department.

Inter-Society Color Council (ISCC)

I met my 'colour tribe' at the Munsell Symposium in Boston in June of 2018 after I submitted a proposal for a poster about *The New Colour* course at UT. Maggie Maggio, the symposium organizer, immediately recognised the value of this innovative interdisciplinary approach, and invited me to not only present the poster at the symposium, but to participate on the panel for Colour Education. After the conference I was invited to join the ISCC Board of Directors in January of 2019. From here, I was invited to join the steering team for the ISCC-AIC Colour Literacy Project.



Logo, *Fluorescent Fridays*, ISCC student-focused online initiative (Zoom).

Fluorescent Fridays (FF)

It has been a privilege (and lots of work!) to serve as team lead for Fluorescent Fridays, an ISCC initiative that we created as a platform for university students from all disciplines to network with colour-focused professionals and students, and to share state-of-the-art research about colour's role in our lives and its applications in the world. Fluorescent Fridays host three to four online events each academic year, and shine the light on university departments around the world who are involved in cutting-edge colour research. The long term goal is to build a global student chapter.

The inaugural event took place on Friday, November 6, 2020. Fast forward to February 24, 2023. Fluorescent Friday #9: Where Color Science Meets the Consumer featured faculty and students from the College of Optical Science and Engineering at Zhejiang University in Hangzhou, China. On April 21, Fluorescent Friday's spotlight featured Color & Light: Student Research at the Munsell Color Science Lab (Rochester Institute of Technology). The next FF event will be held in the fall with colour and design-related content. Universities that have participated in previous FF events include Clemson University, South Carolina; Concordia University, Toronto; International Islamic University, Malaysia; North Carolina State University; Toronto Metropolitan University; Universidad Católica de Chile, Santiago; Universitat Politècnica de València, Spain; University of Florida; University of Lausanne, Switzerland; University of Leeds; University of Texas, Austin; University of Vienna, Austria.

The Colour Literacy Forum, an initiative of the Colour Literacy Project (CLP)

As a member of the steering team for the Colour Literacy Project (CLP), I am delighted to participate in the Colour Literacy Forums as the CLP Post-Secondary team lead and Forum host. We created this global platform as a way to build bridges between university-level faculty, administrators, and students, industry professionals, and to create a dynamic science-based 21st century colour education model — not just for artists, designers, and scientists, but for everyone. Colour Literacy Forums are a joint project of the ISCC, AIC Study Group for Colour Education, and Cumulus, the leading global association of art and design education and research.

The Inaugural Forum

The Inaugural Forum took place on April 22, 2022 (via Zoom) with the title “Colour Teaching in Design Education” by Ingrid Calvo Ivanovic, Colour Designer, Researcher, and Consultant from Politecnico di Milano. Ingrid presented an analysis of state-of-the-art colour teaching in design programs of higher education institutions over the last decade.

On September 30, **Forum 2** focused on “*Teaching Colour Online with Three Perspectives from the Arts & Sciences*”. For the first talk “*Introducing the Elements of Colour*”, Dr. David Briggs presented an arts perspective, followed by Saara Pyykkö, who presented a design perspective with her talk “*Converting an Experience-based Course on Colour, Light, & Space for the Web*”. Dr. Robin Kingsburgh's science-based talk was titled “*Developing Interactive Activities to Explore the Science of Colour*”.

COLOUR LITERACY FORUM

2nd virtual gathering featuring presentations and discussions related to updating and expanding **colour education in art and design** programs at the university level

Teaching Colour Online
3 Perspectives from the Arts & Sciences

Zoom Event:
Friday September 30, 2022
3 pm - 4:20 pm Eastern Time

Organized by the **AIC-ISCC Colour Literacy Project** with:

AIC **Color Council** **Cumulus Association** **AIC Study Group on Colour Education**

THE TALKS & SPEAKERS

Talk 1: Dr. David J.C. Briggs
Introducing the Elements of Colour

Talk 2: Saara Pyykkö
How to convert an experience – based university course about colour, light and space for the web?

Talk 3: Dr. Robin Kingsburgh
Developing interactive activities to explore the science of colour

REGISTRATION OPEN AT:
www.colourliteracy.org

Poster for Colour Literacy Forum 3, September 2022.

Forum 3 was hosted on December 9, 2022 (via Zoom). The title was “*Colour & Light*” by Mark Rosin, an associate professor of physics at the Pratt Institute in Brooklyn, New York and Executive Director at Guerilla Science. Mark’s presentation was the first in a four-part series on colour perception, the foundational cornerstone of 21st century colour literacy. **Forum 4** took place on March 31 (Zoom) focused on “*Colour & Materials: Past, Present, Future*”. **Forum 5** was structured as a hybrid event in concert with the ISCC conference *Color Impact 2023: Color & the Human Experience*. This event was held on June 15 on the campus of the Rochester Institute of Technology with online participants joining on Zoom. **Forum 6** is scheduled for September, and will focus on *Color in Context*, exploring the fundamental role that context plays in our perception of colour.



Hero's Journey I: Leafcutter Ant, Sunset, 16"x20"
Gouache on Paper, Luanne Stovall, 2017

Next steps in the colour evolution

The Colour Literacy Project's Post-Secondary team is working with Cumulus to create a Colour Literacy Working Group within the Cumulus organisation. Our goal is to collaborate with forward-thinking educators to design and implement an interdisciplinary 21st century science-based model for colour education, where colour is recognised as a "Meta" design element — a dynamic phenomenon deeply woven into our lives. University students, industry professionals, and the public-at-large should have an opportunity to study the ever-evolving phenomenon of colour using state-of-the-art tools and resources. Through research, hands-on experiences, and open lines of communication we can gain valuable colour literacy skills and competencies needed to help solve real world challenges, thrive in our communities, and become responsible custodians of our planet.

We know that these students don't have the training — yet — even at the most basic level. So where do we start? One solution is design thinking. Many design disciplines have already embraced a design thinking model, where the emphasis is on an iterative design process. A practical solution is a dedicated colour curriculum with plug-in colour modules that can be integrated into design thinking methodologies and adapted to the specific needs of diverse disciplines.

Looking back to that pivotal moment in Boston when I was handed a failed colour education model and asked, "*What is colour?*" I can't help but feel unbelievably fortunate. My colour journey has often been arduous and frustrating. At the same time, the experience has been exhilarating and deeply rewarding. I am thrilled to be part of this global effort to expand our colour consciousness by upgrading colour education from an outdated niche subject to a robust new model positioned to thrive at the vibrant intersection of the arts and the sciences. We need all hands on deck. I look forward to seeing you there!