

# trueColors

THE MAGAZINE FROM GMG

SUMMER 2019

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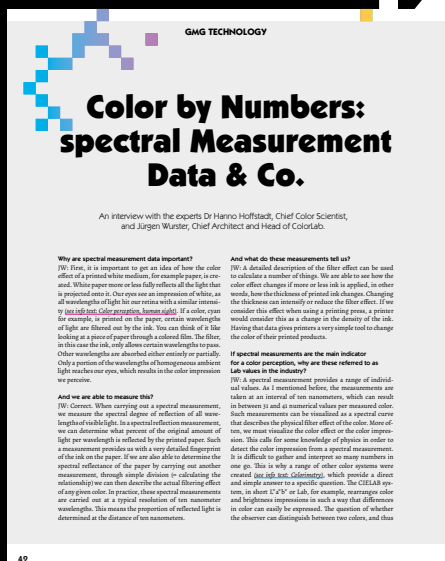
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D-72072 Tübingen  
Germany  
Phone: +49 (0) 7071 93874-0  
Telefax: +49 (0) 7071 93874-22  
truecolors@gmgcolor.com  
www.gmgcolor.com

### Editors:

Nora Blumhardt  
Marta Popowska  
Dr. Hanno Hoffstadt  
Jochen Wintergerst  
Jürgen Wurster  
Responsible according to the German  
Press Law: Jochen Wintergerst

### Design:

WINTERGERST OPEN

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Sebastian Stiphout

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**gmg** color



Photo: Bianchi

This special color. A feast for the eyes. An icon. Joy. Pain.  
When the mountain pass seems to never end, we need to dig deep: give it your all!

### Giving it your all

Success usually requires great effort. Nothing comes for free. Without competition, there will be no winner. It pays to give everything you've got. Even if you're only competing against yourself, pushing yourself, digging deep to motivate yourself. There are much tougher opponents and harder challenges.

Sport is just one example. We, as color management experts, are inspired by the story of the Italian bicycle brand Bianchi. Legendary wheels. Once made of steel, now made of carbon. Always leading the way, their iconic color remains unchanged – a color impossible to miss at the nostalgic L'Eroica race. Start on page 14.

Gregor Traber is a hurdler. He's Germany's best. He knows what it means to give it your all. Every day. In training. And particularly at the 2020 Olympic Games in Tokyo (p. 26).

Kitesurfing is a sport that's seemingly more relaxed. At first glance, at least. Top equipper Duotone has a great responsibility, however. Reliable development work is required to ensure safe landings after exhilarating jumps (p. 32).

The world of GMG revolves less around adrenalin sports or muscle power. Except maybe if we cycle to work. Like IT administrator Thorsten Drews does (p. 36). On the fast track: Dr Hanno Hoffstadt and Jürgen Wurster from GMG ColorLab calculate precise predictions for the multicolor print on variable substrates based on spectral measuring data. Does that sound complicated? It is. The two experts nevertheless try to explain (p. 42). Intense: In order to bring tomorrow's new color experts up to speed on all things color, we have designed a training camp: the GMG onboarding boot camp – a successful start. Let us give you a glimpse. – page 38.

Enjoy the new TrueColors!

**Robert Weihing**  
Co-founder of GMG GmbH & Co. KG

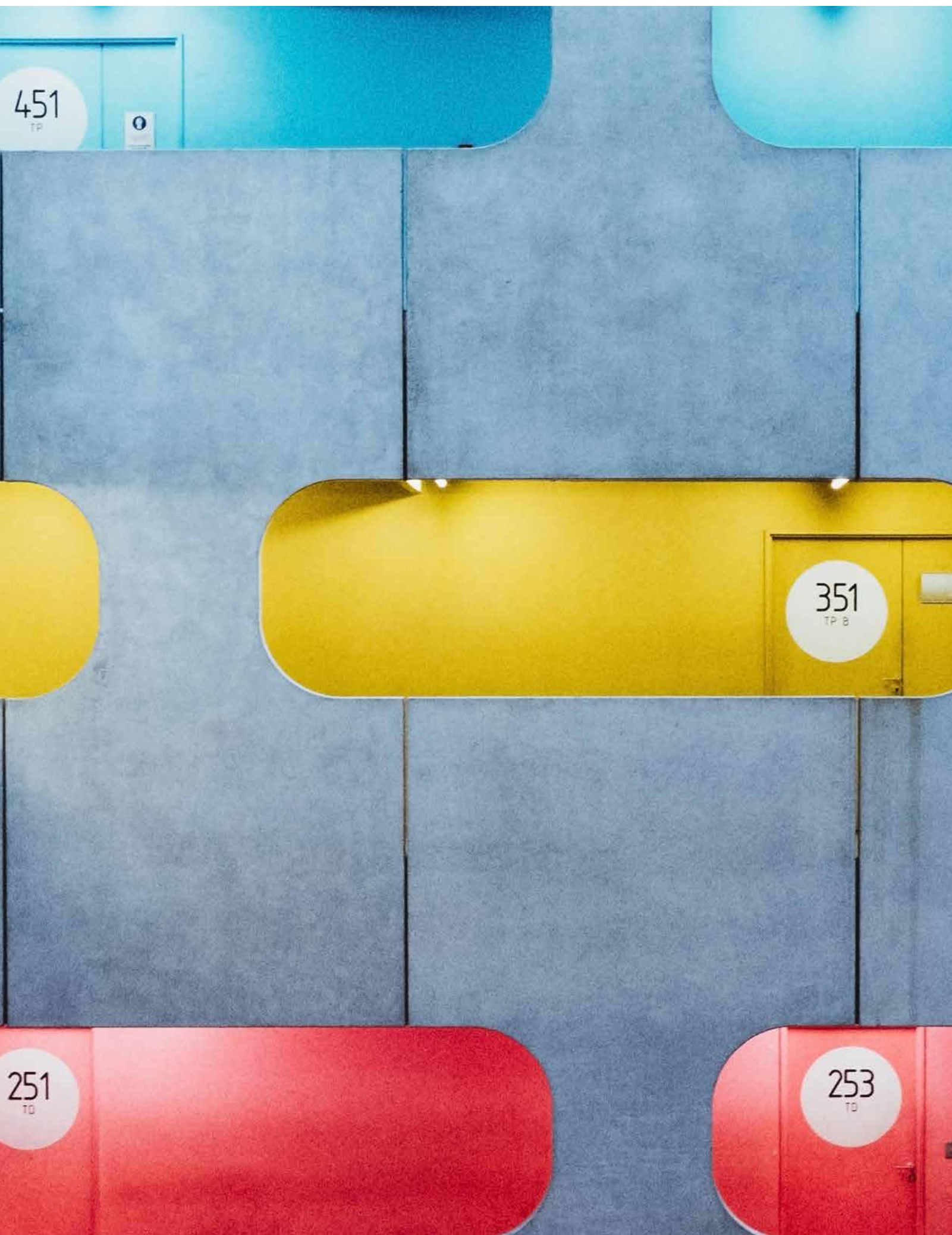




### **TrueColors**

The Jussieu Campus is setting a particularly colorful accent at the Pierre-Marie-Curie university in Paris: They do not teach art or architecture there, but focus on natural sciences. Chapeau! Goodbye to clichés.









### TrueColors

A ghost train? The underground! Artists have been charged to design every new stop in Stockholm since 1957. The entire underground network has gradually turned into an impressive art gallery. The older stops that had been planned and built without artwork have been redesigned over time as well. They were improved with beautiful statues, installations and impressive murals.







### **TrueColors**

Pratum, Bangkok. Talad Neon – The clue is in the name. The stalls of this busy market shine in the brightest of colors. What does this image remind you of? Precisely: Proofing test charts look almost precisely like this.

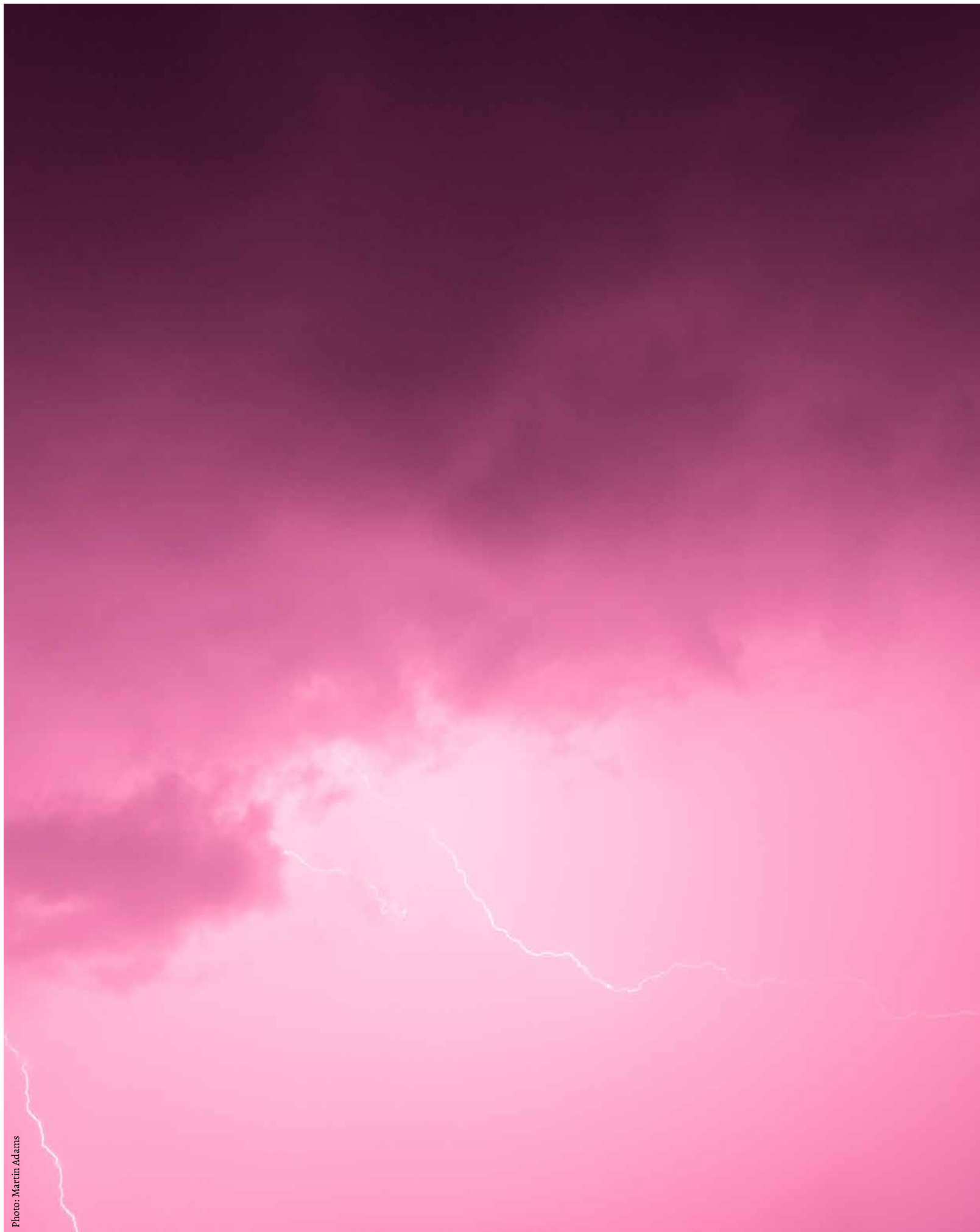


Photo: Martin Adams

# The Little Red

**Before reading on, please close your eyes briefly and think of the color pink. What do you see?** You're probably not visualizing boys in pink pants pushing pink excavators across their sandpit construction site. You're not thinking of a men's football team chasing across the pitch in a soft pink either. The latter does happen, although it inevitably raises some eyebrows. People have strong opinions on the color pink. Why is that?

Masculinity and pink have not always been at odds. In 1897 Juventus Turin made their debut appearance wearing their infamous pink jerseys. It certainly didn't stop them from writing football history. The seemingly natural affinity of boys and girls to blue and pink respectively lacks any basis in fact. For centuries, blue was the color of girls and young women. It is associated with the Virgin Mary. Whereas red was associated with war, blood, strength and aggression. The color of powerful men. Logically, pink was assigned to boys. It was the 'little red'. In 1918, the US 'Ladies' Home Journal' still wrote that pink was the more decisive color and therefore better fitting for boys. Nevertheless, gender-specific color association is now advertised more strongly than ever. Babies used to wear white. Not least because it was easier and cheaper.

To end the history lesson, in the first decades of the 20th century, the fashion industry started to specify colors for girls and boys. They decided to reverse matters. Sailors' uniforms and blue overalls shifted perceptions and blue came to represent to represent masculinity. Of course, that doesn't mean women can't like blue. In fact, blue is the most popular choice of people's 'favorite color'.

Pink wasn't established as a color for girls until recently, in the middle of the last century. The first Barbie doll was sold in 1959, wearing a black-and-white swimsuit. The packaging only turned pink in the 1960s. Today this gender association of the colors blue and pink is so strong that the younger generation in particular finds it difficult to imagine that this has ever been different.

It's even worse. If we believe surveys and career advice, clothes in pink of any shade should be avoided at all costs, when going for a job interview if one is serious about getting the job. That goes for both men and women. Apparently only 5% of us think that smart people would wear pink. Not quite sure what that says about how society views women.

Lists of what team plays in the ugliest football jerseys can be found online as well as in the popular sport magazines. Wild patterns are the most ridiculed, but one color features as the clear 'winner' on these lists: Pink. Still, it's also worn by winners. The Hamburger SV wore pink when winning the European Cup against the titleholder RSC Anderlecht in 1977. The Giro d'Italia assigns the Maglia Rosa, the pink jersey to the overall leader. Who would ever doubt Manuel Neuer's intelligence just because he is wearing pink boots and gloves when in goal for FC Bayern?

Next time you see men in a pink, think of the 'little red' and remember that it is a strong color. Or you might remember that it is just that: a color.



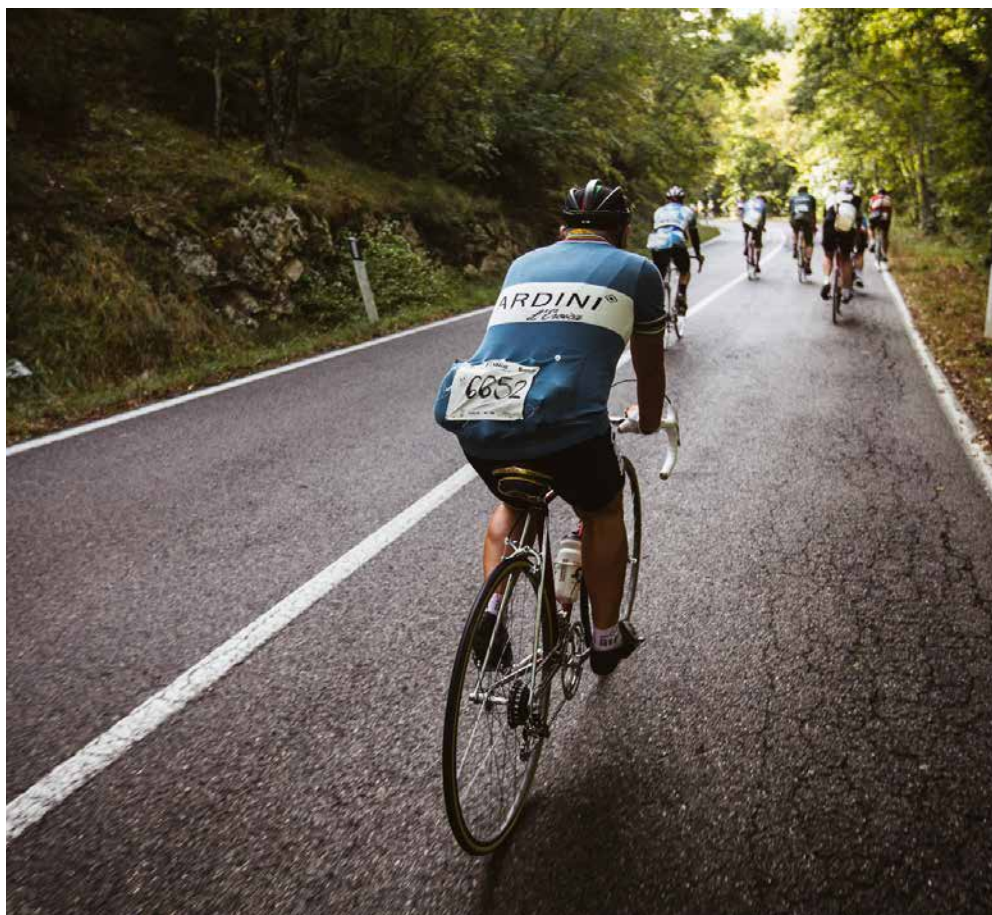
GIVING IT YOUR ALL

# True Heroes

Skin-tight Lycra is forbidden, as are ridiculously expensive carbon missiles. At the nostalgic race L'Eroica, thousands of cyclists leisurely cycle through the hilly landscape of Tuscany on the “strade bianche”. The cyclists enjoy red wine, white bread, olives and cake along the route. Their motto is: Style over stress.

A report on the most beautiful bicycle tour in the world.





Like a vintage car rally – but on two wheels only



It's as romantic as it gets! Through the picturesque cypress forest up to the Castello di Brolio in the early morning light. Small oil torches light up the path on either side. The moon still shimmers in the early morning sky. Instead of enjoying this with the woman of your dreams on your arm, you're pedaling hard up the serpentine on a rather old-fashioned steel bike. There, at the castello at the top, Italian politician Baron Ricasoli specified the precise ratio between the wine varieties used for Chianti in the 19th century. His result: 70 percent Sangiovese, 20 percent Canaiolo and only 10 percent White Malvasia.

Every year, thousands of cyclists meet for the legendary L'Eroica race in late summer. It is probably the most beautiful cycling tour in the world. All the cyclists agree on that. Instead of neon-colored skin tight Lycra, the nostalgic cyclists wear retro jerseys featuring logos of brands from yesteryear, knickerbockers, moth-eaten woolen jerseys and old-fashioned dust goggles. The riders certainly look the part and complete their vintage look carrying the spare inner tubes across their shoulders. Instead of ultra-light six-kilo carbon missiles, they ride bikes built before 1987. That is the rule.

**Among the iconic vintage look of the cyclists, one color stands out: the Bianchi color.**

Everyone must complete the race on a steel frame. Even the Italians, renowned for their tendency to have a relaxed attitude to upholding rules, won't budge on that. No exceptions. After all, you won't feel like a true giant of the road until you have sat on a legendary Cinelli, a beautiful Colnago, a celebrated Pinarello or a pioneering Bianchi.

Among the iconic vintage look of the cyclists, one color stands out: the Bianchi color: the world-famous and legendary sky blue called 'celeste'. In English: "heavenly". The 'Bianchi celeste' certainly received plenty of glory over the last decades: Twelve Giro d'Italia victories, three winners of the Tour de France, nineteen victories of the Milan–San Remo and seven at the Paris–Roubaix. They are true Bianchi heroes.

What are the origins of the winners' color? Some say that the celeste paint supposedly came from leftovers from the Italian army. After all, founder Edoardo Bianchi did build a bike for the Royal infantry "Bersaglieri" in 1915. Others believe that Edoardo taught Queen Margherita to ride a bicycle. The experience made a lasting impression and in her honor, he created the celeste blue



Instead of neon-colored Lycra jerseys, the nostalgic cyclists wear historical jerseys with antiquated advertisements, knickerbockers, and moth-eaten woolen jerseys.

for his fine bikes. “It’s utter nonsense,” says Guy Andrews from the ‘Rouleur’ magazine. He boldly claims: “Celeste simply reflects the sky over Milan”. The only thing we know for certain is that the sky blue of this sophisticated manufacture is world renowned. Cyclists like Fausto Coppi, Marco Pantani and Jan Ullrich have helped make it so.

For those who seek some advantage over fellow competitors, Bianchi might have the answer: their new L’Eroica edition. “The sophisticated bicycle is made of Columbus steel tubes, welded and lugged inline with traditional building techniques, which is why the L’Eroica commission allows this new bike in the race”, says Bianchi boss Fabrizio Scalzatto. Usually, only bikes built before 1987 were permitted. Exceptions are unheard of. Unless one rides the winners’ color.

One thing is obvious fairly quickly: The average body fat of L’Eroica riders is higher than that typically seen of participants at the Ötztal bicycle marathon or the Swiss Alpine Brevet. To give riders of all shapes and sizes a chance, the race begins at five in the morning.

Cyclists from around the world endure the 209 kilometers of hills and, most iconically, the white gravel streets (“strade bianche”). The race would be hard enough, but the gravel adds a whole different dimension.

The constant bone-shaking vibrations make participants appreciate the achievements of riders like Eddy Merckx or Fausto Coppi even more!

The achievements of these heroes of the past were the inspiration for the first L’Eroica race in 1997. It was a homage to tradition and the history of this beautiful sport. If you’ve never been there, you can imagine L’Eroica like a vintage car rally – but on two wheels only. Preserving the beautiful streets in this wonderful

landscape and protecting them from becoming another black asphalt nightmare was high on cycling enthusiasts’ agenda across the world. Rightfully so!

There is nothing more beautiful than cruising through the hills of Tuscany on a vintage Bianchi, Gios, Masi, Wilier or Tommasini, past historical buildings, weathered espresso bars and olive

**With every kilometer passed, one will be better able to admire the achievements of Eddy Merckx or Fausto Coppi.**



Not a race in the actual meaning of the word



No sports drinks, ...

groves. “There may be no better opportunity than the bicycle Randonnée to truly experience the area and to give your heart to the original Chianti region at the center of the Florence–Siena–Arezzo triangle Eroica,” even the otherwise very Prussian “Tagesspiegel” from Berlin states. It’s not a race, but a festival celebrating vintage bicycle racing, combining a homage to the landscape of Tuscany with plenty of opportunities to taste the culinary joys of the region and honor the rich history of cycling in Italy.

6,000 cyclists (!) are now rattling through Tuscany. They are increasing in number every year.

It’s not just Italy. The L’Eroica empire is expanding across the borders of Italy to Spain, England, the Netherlands and even into the United States, to Japan and South Africa, with Bianchi, Brooks, Continental, Mavic, Santini and Steel Vintage Bikes. And L’Eroica believe that this is just the beginning.

It’s hardly surprising. For years, people in their mid-forties have shown a greater interest in racing bikes than golf clubs. The “Mamils” – “middle-aged men in Lycra” – no longer focus on the status symbols of the 1990s, like the Porsche or Rolex.

### **The refreshment stations serve red wine instead of sports drinks.**

Over a glass of decent red wine, they would much rather debate where to get the best espresso or apple crumble along their next cycling tour. Golf and Country Clubs give way to new destinations such as Mont Ventoux in France and the Stilsfer Joch in Italy. On October 6 2019, the spotlight is on Gaiole, a village in the Siena Province with 2,758 residents. The start of this year’s L’Eroica.

This race isn’t a race. There is no time-keeping. There is no winner. Participants get a book in which they must collect stamps along the route. The refreshment stops offer red wine instead of sports drinks and thick salami sandwiches instead of energy gels. They also have ciabatta, mountain cheese with honey, cantuccini and many different (and very tasty) cakes.

And if you are still hungry, you can stop to enjoy the Ribollita at the next food stop. Ribollita is a vegetable stew from Tuscany., traditionally cooked in a copper pot over an open fire. Once you cross that line at the finish you don’t get a medal or a T-shirt as you would when completing a triathlon, but a bottle of – what else? – tasty Chianti and a Panforte di Siena. That is a cake made of



... but espresso – or a glass of red wine



Beautiful streets in the dream-like landscape

Photos: Sebastian Stiphout

almonds, flour and candied fruit (candied lemon and orange peel), honey and spices (coriander, nutmeg, cloves, cinnamon). It is accompanied by a cup of espresso – or a glass of good red wine. It's hardly surprising that words like "heart rate", "pedal pressure" or "maximum oxygen intake" are not part of the vocabulary of the cyclists in the Chianti region. They can even choose their own routes. The distances available are: 32, 46, 81, 106, 135 and 209 kilometers.

As the Frankfurter Allgemeine Zeitung (daily newspaper) so fittingly summarizes: "People ride old scrap from the time before 1987, the golden era of bicycle sports that knew no doping with EPO and their own blood, but had to make do with intravenous nitroglycerine, amphetamine and alcohol. Those were the good old days, when participants would scatter pins in their opponents' paths instead of pushing them off the road."

The problem with Gaiole is: You'll never want to leave again. The tours available here are much too beautiful. Too many great restaurants are waiting for you with their amazing salsiccias and wild boar dishes with herbs and chestnuts. Stories may turn out less heroic thereafter –

but they will be even more culinary for it. It really doesn't matter. After all you have already proven yourself an "Eroico" on the day of the race.

A hero.

March 16, 2019  
Montagu, Cape Winelands  
SOUTH AFRICA

April 7, 2019  
Cambria, California  
USA

May 26, 2019  
Montalcino, Tuscany  
ITALY

June 1/2, 2019  
Agatsuma  
JAPAN

June 2, 2019  
Cenicero, La Rioja  
SPAIN

June 29, 2019  
Valkenburg  
THE NETHERLANDS

August 18, 2019  
Bakewell  
ENGLAND

August 24, 2019  
Rheingau  
GERMANY

September 7, 2019  
San Candido, Dolomiti  
ITALY

October 6, 2019  
Gaiole in Chianti, Tuscany  
ITALY

## WHO SAID IT?



# I like control

MICHAEL JORDAN

01



# Living

**Perfect conditions. The sun is shining. No matter where. Here and now. Tonight, in the rain, always. It works – as long as you pay attention to the proper equipment. In the right color.**

04



02



03



# Color



05



06

01 Sigg drinking bottle, Traveler Mustard Touch 0.6 l, approx. 17.95 Euro, [www.sigg.com](http://www.sigg.com) 02 POC Corpora helmet with magnetic Fidlock® closure, approx. 160 Euro, [www.pocsports.com](http://www.pocsports.com) 03 Seabird Discovery tour kayak with pedal control, approx. 811 Euro, [seabirddesigns.com](http://seabirddesigns.com) 04 E-Schwalbe, the iconic E-moped with electrical drive by Bosch, from 5,540 Euro, [www.myschwalbe.com](http://www.myschwalbe.com) 05 Victorinox Ranger Grip Boatsman, the perfect companion for all adventurers on sea and all everyday adventures, approx. 193 Euro, [www.victorinox.com](http://www.victorinox.com) 06 Ortlieb Duffle RG 60, water-tight traveling bag, 60 liters, approx. 289 Euro, [www.ortlieb.com](http://www.ortlieb.com)

PEEP SHOW

# Hey, What Are You Doing There?

Creative Individuals Explain



## WUPPERTAL: **Nico Ueberholz**

My great passion for space, color, light, shadow and dimension is the driving force for my daily work. I designed our new building. Nature, color and the continually changing light effects make the architecture particularly exiting. The outer shell of the building is fully mirrored. The surface is made of Alucobond by thyssenkrupp. It reflects the garden featuring fountains and lounge areas. The building becomes one with the landscape. As an object it takes on its surroundings, playfully mirroring it.



SYDNEY: **Simone Rosenbauer**

I'm an artist living and working in Sydney. In my photographic work I like to explore the notion of time through people, places and objects. Over the past years my work has been shown internationally and has won numerous national and international awards. In my latest work 'Like Ice in the Sunshine' I have filtered my views of the self, fleeting moments and checkered memories. I took the happy simplicity of an ice block in the sun to capture moments loved and lost, to dwell on ephemeral experiences and to chart the strength – and frailty – of changing identities. Leaving the natural sun to shape a mix of popsicles, ice becomes liquid, pooling around the melting whole. Colors merge, others separate, some creep away from their host. Flaking, sloughing, gently seeping – each and every body tells a different tale: bitter or sweet, all memories eventually melt into the flow of life.



MUNICH: **Lola Paltinger**

I love to think back to the early days in my little studio, when I was able to rejoice in seeing my designs on my first clients. I studied under Vivienne Westwood and fashion giant H&M. Let me put it like this: The blend is what matters! Then, just as now. I use traditional fabrics combined with my own fabric designs, embroidered organza, hand-painted glittery tulle, velvet and taffeta, as well as elaborate sequin embroidery. Very important: The flirtatious wink ... the famous "little touch of Lola".



KAHLA: **Barbara Schmidt**

My work as a KAHLA designer focuses specifically on a non-color: White. Porcelain is my most important material. Plaster is what I use for models for my molds – nearly always precisely shaped by hand so that I can constantly get direct feedback by touch. Color is important when applied to porcelain surface or when plates become a canvas for a meal.



WROCLAW: **Joanna Gniady**

I am an illustrator, and I mostly wear black. My works, on the contrary, are bold and bright. Playing with color is always lots of fun and I take it very seriously. Choosing a suitable color palette is the first thing I do when I start working on a new piece. Brown repels me, you'll find it rarely in my illustrations. And I have a synesthetic relationship with IKB. Each time I see Yves Klein blue works I feel like touching them (museum guards, be alert).

“Sometimes  
I have to  
go beyond  
the pain”

Gregor Traber (26) is one of the strongest hurdlers of our time. The officiating German Champion is aiming to give his best at the World Championships in Doha (Qatar) and the Olympic Games in Tokyo in 2020. An interview about ambition, setbacks and why it's so important to exercise one's mind as well.





**Mr Traber, what is the color of fast shoes?** I get fresh ones from Nike every year. They are a different color each time. My current ones are white. I like white as a color.

**What do you think when you start a race?** I try not to think at all and just let things happen. That works best.

**Technique and running have become so ingrained they happen automatically?** That's right.

**Is hurdling an ego trip?** Oh yes, it is! But if you want to call it that, call it a smooth ego trip. The ego trip is the part with the elbows, the aggressive bits. Still, you also need elegance and smooth jumps over hurdles. Hurdling means having that delicate balance combined with aggression.

**Are you an egotist in your private life, too?** I would do anything for people who matter to me. My parents, my friends and my girlfriend can come to me at any time if they have any problems. It is very important to me that the people around me are well. At the same time, there is one lesson I learned early on when I lived with a host family in Tübingen at the age of 16: You must stand up for what you want to achieve. You must know what you must do for it. Competitive sports do require you to pay attention to your needs. In the end, I'm the one who has to stand on the track and perform.

**You had multiple injuries in your career. In 2017, it kept you from participating in the WCH. How do you handle setbacks?** The insane thing about sport is that joy and pain are always close together. You must drive your body to its limits. This is especially the case in sprinting, where the last hundredth of a second may determine victory or defeat. When you exercise this close to the limit, you cannot avoid going beyond it here and there. That is when injuries happen. 2017 was extremely bitter. I had an osteitis pubis and had to take a break. I fought my way back and was nominated for the WCH. Three days later, I was diagnosed with the first stage of a fatigue fracture in my foot. I had to cancel the WCH. I felt really bad then. It took a while until I had dealt with that. I let myself have that time, too. I have a good safety net. I did want a change, though. I wanted to improve my odds for staying healthy. That's why I switched to Leipzig.

**Did it pay off?** Yes. I went to Leipzig while injured in 2017. 2018 was the most successful year in my career to date. I was able to improve my personal best, I made fifth place in the ECH finals, I was German Champion and had a great time at the Tübinger Leichtathletikmeeting, with 13.35 seconds. This year, I won the title at the German Indoor Championships. At the same time, I started to study psychology. My dreams have more than come true.

**What differentiates a professional athlete from amateur athletes?** It's said that we are highly disciplined, ambitious and able to maintain structure. The main difference, however, is that we align our entire lives with it. We build everything around the sport. Maybe one must be willing to sacrifice more. I don't really see it as a sacrifice, however,



"... an incredibly intense feeling."

since the sport gives a lot back to me. Chance and luck are important, too. If I'd stayed in football, I probably wouldn't have made it to pro level. Once you have found something that you enjoy and you realize that you are really good at it, your own ambition drives you on.

**Does your ambition have to be reined in now and then?** Every day.

**Even though you wanted to take better care of yourself...** ... I do. That was why I went to Leipzig. As you grow older, you get to know yourself better. You're less naive. Still, I cannot hold myself back in training. Adrenalin and ambition are too much. I need the outside correction.

**Who does that?** My trainer, Jan May.

**What does he do that others didn't?** He has a clear line and knows that he must keep me hot. Like a hot potato.

**Do you have to avoid stress in your personal life or studies?** There are a few things that I never want to endanger. One is sleep. If at all possible, I sleep for nine hours. That is elementary. I also have a 15-minute power nap in the afternoon. Sport leaves you incredibly exhausted very often. Nutrition is vital. You must be comfortable overall. I also need the distraction from my studies. I feel underutilized if I don't give it enough attention. However, if it's too much, it will reduce my athletic performance. I'm constantly optimizing that fine balance.

**You are planning several tournaments and the Olympic Games in Tokyo in 2020. Do you have the luxury of downtime?** The Olympic Games are above all. This year, the WCH is incredibly late. That leaves less time to prepare for the Olympic Games. The Olympic Games mean going



Photos: Jens Arbogast

With hosts and medal – right after the award ceremony at the German Indoor Championships in Leipzig

far beyond your limits, both physically and mentally. Afterwards, you must lick your wounds, and then the next WCH is just around the corner. Skipping a World Championship isn't an option, however. You must think tactically. If you're injured, you consider taking Ibuprofen for a longer period or using injections to mask your injury. Competitive sport isn't healthy. It wears you out. So, no. My career is too short for taking downtimes just because I feel like it.

**Is that a calculated risk?** Yes. It is my privilege to be free in my decision. I can do what I feel is my vocation. My life is very intense. Sometimes I just must go beyond the pain. I must deliver on day X. I'm performing live in front of spectators. It's impossible to hide as a single athlete. You either perform or you don't.

**You have a Bachelor's degree in business management and are currently studying psychology. Is relying on sport alone too little for you?** I have a great need for freedom. For me, that means that I must have the choice. By setting up a broad foundation, I can improve my freedom. Focusing only on sport, knowing that this career is relatively short lived, doesn't make sense to me. It greatly reduces my choices and I don't like that. Besides, I am very curious and ambitious. I had a holiday semester in the winter before the Olympic Games, and I was injured. I found it stressful mentally. I never felt so bored before. That was when I noticed that I really do need something else to focus on. It's like a life insurance for my mind.

**So, it's important to not forget the mind despite all the physical training?** I took up sitting meditation a year and a half ago. It's specific exercise for the brain. Being aware of the here and now is something I need in competition as well. I have noticed that I focus better in competition now. Performance is made in the mind. You can only call on what

you trained for. There's no more than that. And you can only call that up if you're in the right mindset.

**How do you focus on goals that are as far away as the Olympic Games?** I don't give it much thought. Short term goals keep me motivated. It took time for me to learn that the journey is the goal and truly to live by that. I have learned to find joy in my daily routines making training much more meaningful, more focused and effective.

**You train all year round for moments that are over in less than 13 seconds.** When it all comes together in a race it's the best feeling. Everything becomes almost effortless, it just flows. In the semi-finals for the ECH, I noticed this feeling at the seventh hurdle. I felt that it was going amazingly. Those are the moments you practice for.

**Do you feel that in every run?** Unfortunately, I don't. But I always try to. When something difficult feels extremely easy and you lose yourself in that moment – that's an incredibly intense feeling.

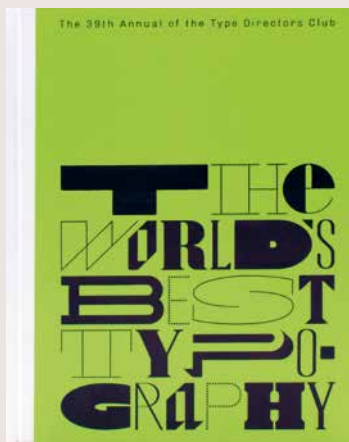
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*Gregor Traber has been supported by GMG since 2017. His personal best over 110 meter hurdles is 13.21 seconds.*

PROF. DR KLAUS KLEMP  
AND KEIKO UEKI-POLET:  
**Less and More: The Design  
Ethos of Dieter Rams**



His clear, elegant visual language has formed entire generations' understanding of what design means and what it can do. Dieter Rams was also made famous by his theses. They remain just as relevant today as they were then: Good design is innovative, comprehensible, aesthetic and makes a product useful. Good design is unobtrusive, honest, long-lived, consistent to the last detail and environmentally friendly. Good design is as little design as possible. *Less and More* seizes this understanding of design in hundreds of product presentations, sketches, pre-stages and models of the world-famous Braun stereo systems and razors, and the furniture systems for Vitsœ. **Gestalten**

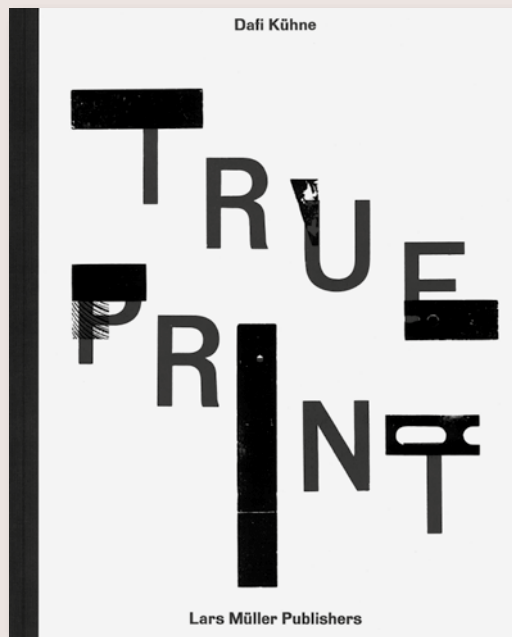


TYPE DIRECTORS  
CLUB OF NEW YORK:  
**Typography 39**

One event in the world-wide jungle of graphics design competitions stands out like a bright light in the darkness. It's clearly positioned. It doesn't add more and more disciplines to earn money. Instead it stays true to itself and its quality claim: The TDC competition of the Type Directors Club of NY. The result is an exhibition that tours the world. It is not available online, but in a wonderful book: *Typography*. It shows the line you must cross to be part of the world's elite. It inspires us on the path to get there.

Verlag Hermann Schmidt





## DAFI KÜHNE: TRUE PRINT

Dafi Kühne is a Swiss designer who works with analog and digital means in order to produce fresh and unique posters in the letterpress technique. Different production tools, from computers to pantographs, shift the boundaries of design for his compositions. Without being afraid of getting his hands dirty, Dafi Kühne integrates the entire process of creating a poster from the first idea to the finished product in his workshop. He combines state-of-the-art media with the centuries-old traditions of book printing. Typography and form create a new vocabulary of contemporary communication in his hands. His work is not “retro”. It provides smart answers in the search for new paths of graphical expression: true printing graphics.

Lars Müller Publishers



## PENTAWARDS, JULIUS WIEDEMANN: **The Package Design Book**

Just as design can turn simple everyday objects into objects of fancy, a skilfully designed product package can turn the content into an object of desire. The international top results in the discipline of Packaging Design is awarded by the renowned annual Pentawards. It is a design competition that has developed into a mega event over the years. In this volume, we present all laureates from 2008 to 2016 and analyze outstanding packaging solutions in detail. **TASCHEN**





GIVING IT YOUR ALL

Photo: Duotone

# Precision on the Water

Kitesurfing – bright colors, white beaches.

Before the sun rises, however, there is nothing but the light of a desk lamp. At Duotone Kiteboarding, there is innovative and responsible development work to be done before the surfers can head for the waves.



"It's a lot of fun," says Philipp Becker, a marketing specialist at Duotone, of his job.



All new Duotone surfboards are originally born on the computer.

**G**liding, jumping and flying over the water with the wind in your back. It is this fascinating, three-dimensional experience that makes Philipp Becker such a fan of kiteboarding. "The high jumps are what most people like best. The thrill never grows old," says the marketing specialist for Duotone Kiteboarding. However, those who wish to fly high need the right equipment. This adrenalin sport is made possible by a strong innovative spirit and an enormous amount of development effort. And it also requires a great deal of responsibility.

"Kiteboarding is not dangerous. The oldest student I taught was 80 years old," says Philipp Becker. Most accidents happen to beginners who go out and purchase used equipment without getting any training in how to use it. The many different kinds of boards alone are confusing. Some are similar in shape to a classic surfboard, then there is the twin tip style that resembles a wakeboard and the futur-

**This lifestyle sport is made possible by a strong innovative spirit and an enormous amount of development effort.**

istic foilboard that can reach speeds of up to 80 kilometers per hour, floating above the water on a mast with wings. Maneuvering the kite takes a great deal of skill and know-how. Depending on its size and shape, the kite may be capable of pulling two full-grown adults out of the water in the right wind conditions. And yet this is a sport that promises an adrenalin rush in harmony with nature.

According to Becker, almost all Duotone employees surf in their free time. When young people join the company who

have never been on a board before, their first assignment is to attend a few weeks of kite school, says the marketing specialist. "Most of them stick with the sport," he adds.

Becker's own story is no different, just that the equipment was harder to come by. Kiteboarding, often referred to as kitesurfing, is one of the youngest action sports around. The first experiments with kites were conducted in the 1980s before the sport really took off in the 1990s. Accordingly, equipment was hard to get for a long time. "I really wanted to try it out, though," Becker recalls. Still a student at the time, he attempted to make his first few boards himself. Those days are now definitely over. Today he works for one of the most innovative brands in the industry. The Duotone Kiteboarding brand belongs to Boards & More, a company that has been active in a variety of sport segments worldwide, including windsurfing, for a good 20 years now. Its creative and operational hub with some 40 employees is located in Munich, Germany. The site in Austria has a workforce of 90. "Then we have another ten to 15 people who work for us worldwide," Becker adds. Most of these are designers, located at kitesurfing hot spots like Cape Town. For Becker, as a marketing specialist and kiteboarder, this is an ideal constellation. Although he spends most of the year working in Munich, he also travels a lot. He spends the months of December and January in Cape Town. It is important to sit down face to face with the designers and talk, he says, plus the company tests many of its new products right where they will be used. Many of us would call that a dream job. "It's a lot of fun," says Becker.

Behind the seemingly "laissez-faire" attitude of the sport, Duotone works tirelessly to bring fresh thinking and innovation to its customers. After all, kitesurfers always want to go a little higher. Safety aspects have to keep pace with this development. The Duotone team therefore recently developed and launched a new kind of click bar, which is the



When it comes to the shapes of the surfboards, no detail escapes designer Sky Solbach. In his workshop on Maui in Hawaii, he meticulously measures new boards to ensure that kiteboarders are able to maintain complete control even in extreme conditions.



Photos: Duotone

Anyone who flies this high needs to land safely as well, even when things go wrong as demonstrated here by world champion Matchu Lopes in Indonesia.

**Kitesurfers always want to go a little higher. Safety aspects have to keep pace with this development.**

product,” notes Becker. The developers and team riders spent two years testing the click bar to iron out all the snags. And there were a number of them. “We tested the product under the most difficult conditions, from the North Sea to Cape Town all the way to a lagoon near the Moroccan city of Dakhla.” The material has to withstand a lot, such as extremely aggressive UV rays and the very high salt content of the water.

The research efforts into improvements of the kite material are just as intense. Depending on its size, the kite can weigh between two and five kilos. But kitesurfers want them lighter and lighter, as this makes it possible to “lift off” at lower wind speeds. “We develop the cloth together with the Japanese company Teijin,” says Becker. The challenge is to develop lighter and thinner materials without compromising the strength and toughness of the kite. It has to withstand all sorts of abuse and neither strong UV rays nor sharp objects should be able to damage it. This takes a lot of know-how, expertise and high tech.

Equipment like this can easily cost EUR 4,000. With an investment of that caliber, riders should be able to use it for a long time. But, of course, many don't. Kitesurfers are enthusiasts who always want the latest, the best and the coolest gear. “How a product looks is extremely important. We have to not only pick up on trends but set them as well,” Becker explains. There are people who buy all-new equipment every year, he adds. The Italians are especially quick to snatch up new designs, followed by the Spanish. The Germans, Dutch and Americans are a little bit slower in upgrading their equipment. This type of customer behavior was

handlebar used to steer the kite. It is designed to provide kiteboarders with greater safety, more options and easier handling. “It took three years to go from the idea to a market-ready

the cause for a panic or two at Duotone in the early years. Philipp Becker well remembers a discussion with an Australian importer. “On seeing our colorful kites, he told us that Australians would never buy them.”

In a knee-jerk reaction, we then went back and produced black kites. In the end, the customers bought the colorful ones while the black ones remained on the shelves. Duotone learned its lesson from this experience. “In order to be successful, maybe new designs have to cause some irritation first.” What's more, it is impossible to make everyone happy. The company now concentrates on developing not just its own brand, but on helping the sport itself to continue evolving. The Duotone slogan, “True Kiteboarding,” is meant to communicate this philosophy to kiteboarders. And it has been successful. “The hashtag #truekiteboarding in conjunction with our brand is flourishing. Many of our customers use it on Twitter or Instagram to identify themselves as true kiteboarders,” Becker explains. That may well be the biggest compliment of all for the Duotone team.

**“How a product looks is extremely important. We have to not only pick up on trends but set them as well.”**

IT Administrator  
Thorsten Drews  
has renounced  
the comforts of  
the car.

### Distances traveled by bike



Online survey of 3,156 Germans  
between ages 14 and 69

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# Heading Home on two Wheels

It can sometimes be a long journey to reach the gates of GMG headquarters in the city of Tübingen in the German region of Swabia. But it is also a very pretty one.

**This is precisely why IT administrator Thorsten Drews is happy to make the trip by bicycle. He has renounced the comforts of the car, in which the landscape merely flies past and our desire for fresh air goes unmet. He is not alone in this choice.**

He is joined, for example, by Senior QA Engineer Henning Körstel, who lives in the Entringen district of Ammerbuch, 13 kilometers from work. Every day since 2011, he has been cycling these 13 kilometers twice daily in all kinds of weather. Back then, his choice was made easy by increasingly poor rush-hour traffic and the high cost of local public transportation. These have not changed since either.

"A bicycle is simply the most reliable, most cost-efficient alternative for the journey to work," says Henning Körstel. What may sound like a charmingly romantic idea in good weather would probably meet with more than a little resistance from most people in the winter. In addition to sudden, unexpected worsening of the weather and rough road conditions in many places, cyclists must also ride in darkness. Yet it is all just a matter of preparation. With the right equipment, a bicycle has nothing but advantages to offer.

## **Want to live longer?**

In order to protect the environment and save money, more and more people are swapping their car in favor of two wheels. In 2017, there were 73 million bicycles in German households. Bicycles are used for more than just shopping or leisure excursions in people's spare time. According to a study, 20 percent of employed people cycle to work.

This comes as no surprise. After all, the bicycle is the most economical form of transport. And it does more than just save riders money. Cycling extends riders' lives as well. Danish researchers have found that riding a bike at least three hours a week has a positive effect on life expectancy.

An especially high number of GMG employees from the bike-friendly city of Tübingen and its surrounding region use bicycles as a mode of transportation. GMG wants to see that percentage increase even further and has been offering a new bicycle leasing initiative for employees in Tübingen through the website JobRad.org since summer of 2018. This will not only help protect the environment, it will also benefit the health of the color experts.

## **How environmental protection can work on a local level**

GMG employees who want to actively participate in the company's environmental protection efforts can first choose a bicycle – either online or at more than 4,500 local dealers in the JobRad portal. It doesn't matter what kind of bicycle the employee wants. Leasing works with all kinds of bicycles, from simple city bikes to mountain bikes all the way to electric versions.

Costs are calculated based on the list price. In the end, the employee pays a set amount every month. GMG pays the insurance costs and the fee for a basic service contract. In addition, GMG subsidizes the leasing costs with an additional EUR 30 per month if the employee gives up his or her parking permit in exchange. Best of all, the bicycle can, of course, also be used for trips other than to work and back. Whether for shopping, a weekend bicycle tour or just some good exercise, the leased bike is always ready for the road!

For additional information, please visit [JobRad.org](http://JobRad.org)

A man with dark hair and glasses, wearing a grey button-down shirt, is looking down at a large, bright yellow document or folder he is holding. He has a ring on his finger. In the background, another person is partially visible, looking down. The setting appears to be an office or a workshop with a window in the background.

GMG ONBOARDING

# It Begins with a Question Mark

The cross-departmental onboarding program  
for new employees at GMG.



In the past, every department was responsible for integrating its new employees into daily working life at GMG by itself. A much more comprehensive orientation program is now available. The intensive onboarding week at the start in the new environment is designed not only to make it easier to establish contacts but to clear up the big question on every new employee's mind.



The onboarding agenda includes several excursions ...



W

hat exactly is it that we do here? That's a question that isn't so easily answered and demands considerable creativity from any GMG employee asked to explain to someone from outside the industry. Often, they will find their explanatory efforts met with looks of confusion. Communicating what color management is and why we need it is more difficult than explaining the reason we make chocolate, cars or tools.

#### What do we actually do here?

It's not that other branches of industry are lacking in-depth, but niche topics like color management are usually challenged by more than their own complexity. The abstract nature of color management is further enhanced by the fact that no one has ever heard of it unless they have worked in the industry or come into contact with it somehow. It is helpful to know that almost everyone has felt the same way, however. In the beginning, nearly all of us were overwhelmed by the world of color.

No one who decides to take a job at GMG need worry about venturing into this colorful new world. The first onboarding group, formed in late 2018, was exceptionally colorful itself. Not only were two colleagues from our office in Boston in attendance, nearly all of the departments were represented for the week-long program: development, marketing, sales, finance and inside sales/office management.



... so participants can experience the GMG universe up close and personal.

### **See, touch, feel: experiencing print worlds live**

Onboarding covers the complete range of topics, beginning with a journey back to our origins and ending with a presentation of all branches of our business so that new employees can learn in detail how the GMG family earns its keep. In between are basics such as color perception, more in-depth information on the various printing techniques and, of course, practical workshops on our products as well. And naturally the answer to the big question mark.

By no means do the newly minted employees just sit trapped in a meeting room all week – the onboarding agenda includes several excursions so participants can experience the GMG universe up close and personally. For example, they visit a pre-press company, a typical customer and tour the media university Hochschule der Medien to see different printing machines in all their glory. One very special and unique highlight for the first group of participants was

watching the final print approval process for the TrueColors winter 2018 / spring 2019 edition at the Karl Gramlich off-set printing plant in picturesque Pliezhausen.



# Color by Numbers: spectral Measurement Data & Co.

An interview with the experts Dr Hanno Hoffstadt, Chief Color Scientist,  
and Jürgen Wurster, Chief Architect and Head of ColorLab.

## Why are spectral measurement data important?

JW: First, it is important to get an idea of how the color effect of a printed white medium, for example paper, is created. White paper more or less fully reflects all the light that is projected onto it. Our eyes see an impression of white, as all wavelengths of light hit our retina with a similar intensity (*see info text: Color perception, human sight*). If a color, cyan for example, is printed on the paper, certain wavelengths of light are filtered out by the ink. You can think of it like looking at a piece of paper through a colored film. The filter, in this case the ink, only allows certain wavelengths to pass. Other wavelengths are absorbed either entirely or partially. Only a portion of the wavelengths of homogeneous ambient light reaches our eyes, which results in the color impression we perceive.

## And we are able to measure this?

JW: Correct. When carrying out a spectral measurement, we measure the spectral degree of reflection of all wavelengths of visible light. In a spectral reflection measurement, we can determine what percent of the original amount of light per wavelength is reflected by the printed paper. Such a measurement provides us with a very detailed fingerprint of the ink on the paper. If we are also able to determine the spectral reflectance of the paper by carrying out another measurement, through simple division (= calculating the relationship) we can then describe the actual filtering effect of any given color. In practice, these spectral measurements are carried out at a typical resolution of ten nanometer wavelengths. This means the proportion of reflected light is determined at the distance of ten nanometers.

## And what do these measurements tell us?

JW: A detailed description of the filter effect can be used to calculate a number of things. We are able to see how the color effect changes if more or less ink is applied, in other words, how the thickness of printed ink changes. Changing the thickness can intensify or reduce the filter effect. If we consider this effect when using a printing press, a printer would consider this as a change in the density of the ink. Having that data gives printers a very simple tool to change the color of their printed products.

## If spectral measurements are the main indicator for a color perception, why are these referred to as Lab values in the industry?

JW: A spectral measurement provides a range of individual values. As I mentioned before, the measurements are taken at an interval of ten nanometers, which can result in between 31 and 41 numerical values per measured color. Such measurements can be visualized as a spectral curve that describes the physical filter effect of the color. More often, we must visualize the color effect or the color impression. This calls for some knowledge of physics in order to detect the color impression from a spectral measurement. It is difficult to gather and interpret so many numbers in one go. This is why a range of other color systems were created (*see info text: Colorimetry*), which provide a direct and simple answer to a specific question. The CIELAB system, in short  $L^*a^*b^*$  or Lab, for example, rearranges color and brightness impressions in such a way that differences in color can easily be expressed. The question of whether the observer can distinguish between two colors, and thus

between two different spectra, can be answered in the Lab system by simply calculating the distance between two color locations. The spectra can be used to calculate the corresponding coordinates in the Lab color space. The properties of ambient light and human visual perception are included in the calculation of the coordinates, and additional comparisons can be easily made. The Lab system can play an important role when it comes to calculating, presenting, and monitoring color profiles for printing processes.

**What else can be calculated with spectral measurement data?**

HH: In a suitable model, the spectral data can be used to separate the properties of the ink, paper, film, or, where appropriate, even finishes in order to change a single component before bringing everything back together again. In addition to adjusting the density of the ink, as mentioned before, the substrate and colors can also be exchanged, which can allow for or exclude certain finishes. Paper adjustments, when using the same inks, are an important issue in printing. Given the variety of substrates, it is impossible to characterize them to the same degree and consistency with each other. It is better to carry out a very well controlled test print, on a small amount of materials, and then customize the characterizations of similar materials. There is, of course, a considerable difference between coated and uncoated paper. In this respect, there are certain limits to the procedure. One exciting aspect is compiling the individual data again: This allows for overprints to be predicted without having to actually print them. Thus, detailed characterizations can be gained from a small amount of measured data, provided that you know the physical properties of the printing process. In a series of test prints we identified the key features of important printing processes – offset, flexo and gravure printing – and for substrates such as paper or film, we now offer solutions with GMG OpenColor.

**Can you explain in a few words how the model in GMG OpenColor works?**

HH: Most printing processes rely on images being rasterized. Since ink cannot be continuously applied in the printing process, halftones must be generated between the full tone and the unprinted paper by printing dots of various sizes depending on the desired tone. Full tones and paper have given reflection spectra. A halftone consists of a certain percentage of dots that are colored like the full tone. The paper white is visible in between the dots. In simplified terms, a halftone is made up of a proportionate mix of the two spectra. Either a tone curve is indicated beforehand or there are spectral data for the halftone levels. In both cases, the corresponding area can be determined for each tone. For overprints, a kind of mosaic is created by overlapping the dots of the printing inks used. The coloring of all areas is calculated from the individual colors as you would overlap the aforementioned film as a filter, and this results in the reflection spectrum of color combination. This is then

used to calculate the Lab value as a measure for the visual color appearance.

**What role do the spectra play in defining brand colors?**

JW: Defining the spectra plays a crucial role in determining a brand color. A brand is primarily interested in ensuring that its brand color always evokes the same color impression in the viewer regardless of where or how it appears. If the brand color is set by a spectral definition, then the exact optical structure of the color is defined in terms of all the relevant wavelengths along the color circle. This definition can be taken into account in all production processes.

The spectral definition enables an ink manufacturer or a printing company to mix precisely the right color. This also allows for the printing process to be influenced just as the substrate itself can be. Brand colors are printed on a wide variety of media. These range from brilliant white paper in a glossy brochure to labels and corrugated cardboard point-of-sale material. The exact spectral definition allows you to compensate for these factors in the production process and even to monitor them with a clearly defined reference value. The various conditions for viewing, such as those in the artificial light of a supermarket, do not play a role in defining the color reference. Ultimately, they must only be considered in the production or approval process.

**What are optical brighteners and how are they measured?**

HH: Most dyes and pigments are passive reflectors. A portion of the light is reflected for each wavelength; this is referred to as the reflection factor. Optical brighteners are fluorescent substances that absorb high-energy light (such as UV or violet) instead of just reflecting it. They distribute a portion of the absorbed energy as vibrations on the entire molecule and then emit the rest of the energy as light. This is how blue light emerges from UV light. In traffic safety vests or highlighter markers, the orange light emerges from the violet, blue, and green portion of sunlight; this apparent orange light appears as unnaturally bright in addition to the normal reflection of orange portion of sunlight, which means that over 100 percent of the incoming light is reflected. Such peaks on the reflection spectrum enables fluorescence to be easily seen. To know exactly how much fluorescence emerges, for example through optical brighteners, you need to measure the proportion of UV light that is blocked or filtered in M1 measurement illumination. This removes any fluorescence, and you only see the passive reflection behavior in such M2 measurement illumination. You can also easily see the difference between M1 (with UV) and M2 (without UV) in the Lab color space as the difference in the blue component  $b^*$ . Paper for offset printing often has a bluer coloration at the M1 measurement by a factor of six to eight units ( $\Delta E$ ), and its UV level roughly corresponds to that of sunlight.

**Therefore, spectral colorimetry is a central starting point. How is color measured exactly or what kinds of things should we bear in mind?**

JW: There are various types of spectrophotometers available to carry out spectral measurements. The devices are designed to be used in a variety of applications. There are handheld instruments designed for measuring a single color sample. And there are also devices that can capture entire charts. Of particular interest to us are different lighting sources, measurement geometries, and sensors. The various national standards for calibrating equipment (United States, Germany, Japan) can result in minimal variations in spectral measurements. If the same color sample is measured with different devices, the readings may even differ in extreme cases by a  $\Delta E$  of 5. We can assume that differences in color are normally less than a  $\Delta E$  of one below the visibility threshold. As the same sample is measured in our example, such high deviations between the instruments, of course, pose a problem, even if this is considered as an extreme case. It is therefore, very important to communicate which parameters are used in the measurement in addition to the actual measured values. In addition to the device, the illumination used such as  $M_0$ ,  $M_1$  and so on as well as the measurement geometry is equally important. If these differences are not taken into consideration when applying the measured data, this can lead to an increasing number of inaccuracies over the many process steps all the way to quality control.

**It must be next to impossible to provide information on all instruments and conditions for every application. Are there any easier solutions?**

JW: Built into the applications offered by GMG are algorithms based on  $L^*a^*b^*$  values which compensate for these differences. A very good example of the need to compensate for the differences between measuring instruments is the calibration of the digital proofing devices. Having a well-balanced printing behavior in proofing is very important. It is simply out of the question to have variations among the instruments. We also work together with the manufacturers of measuring devices to ensure that these differences are compensated for. The accurate and precise collection of data forms the foundation for all other activities surrounding the topic of color management. In this respect, any new insights and improvements can be essential to the users of our products.

**What topics is the ColorLab Team at GMG currently looking at?**

HH: Many of our users have still older data sets that only include  $L^*a^*b^*$  values. These may be databases with special colors or profiles that have been calculated only using  $L^*a^*b^*$  values. In addition, several printing standards are based only on Lab characterization data. In order to really get the most out of the spectral data, users would have to combine  $L^*a^*b^*$ -based color definitions with current and more precise spectral methods. The upcoming versions of our products will provide solutions for this.

We are active in a number of international industry circles. On the one hand, we promote standardization and also provide new impetus. For example, we recently supported the American IDEAlliance working group to define the test charts for the characterization of a standardized multicolor printing process (ECG: expanded color gamut). And we, of course, are also involved in the latest FOGRA research project on multicolor.

As these examples show, it is quite clear that we have to deal intensively with multicolor printing. The potential of spectral data and the capabilities provided by our algorithms and research based on these data really unfold when more printing colors come into play. Characterizing a seven-color printing process in a traditional manner requires a significant effort in printing and measurements. Based on our spectral technology, we will therefore offer new solutions in the future for conventional printing processes as well as in the area of digital printing.

The GMG ColorLab Team's work is rooted in a sound understanding of color theory and in-depth knowledge of color uptake and reproduction technologies. We deal with the hardware, i.e. cameras, scanners, display and printing technologies, as well as software and algorithms, screening method, interpolation, and approximation. Multicolor jobs have the inherent problem that they are highly dimensional in mathematical terms and thus in principle the greater the number of colors you have the more calculations and increased data are required. Therefore, we are constantly on the lookout for new approaches and seek to efficiently implement our production code.

## Color perception, human sight

The human eye can perceive only a certain section of the spectrum of electromagnetic waves (from approximately 400 to 700 nanometers). White light or even white color is a more or less homogeneous mixture of all wavelengths that enter our eyes. If there is a concentration of certain wavelengths within this range, then we perceive a specific color, for example, at 550 nanometers the color green.

Our human vision begins in the short-wave range with violet color impressions and migrates along the rainbow through the colors blue, cyan, green, yellow to red. Ultraviolet light (UV), most commonly known to us as the cause of sunburn if we “consume” too much of it, lies below the limit of our vision. Any red light that is located beyond our perception is referred to as infrared light. We can feel this in the form of heat radiation. A technical application of infrared light can be found, for example, in traditional remote controls for TV sets. These devices send light signals to the TV that are invisible to our eyes.

Our eyes require three different receptors in order to be able to “see” daylight. These are the color stimuli in the areas of blue, green, and red. The actual color perception is created in our brains depending on the intensity of the cone cells in our eyes.

In addition to the cone cells, our eyes contain rod cells that are able to measure differences in brightness. They are more sensitive than the cone cells. Therefore, our color vision also changes even with decreasing brightness: In a dark environment, we see just black and white to a greater extent.

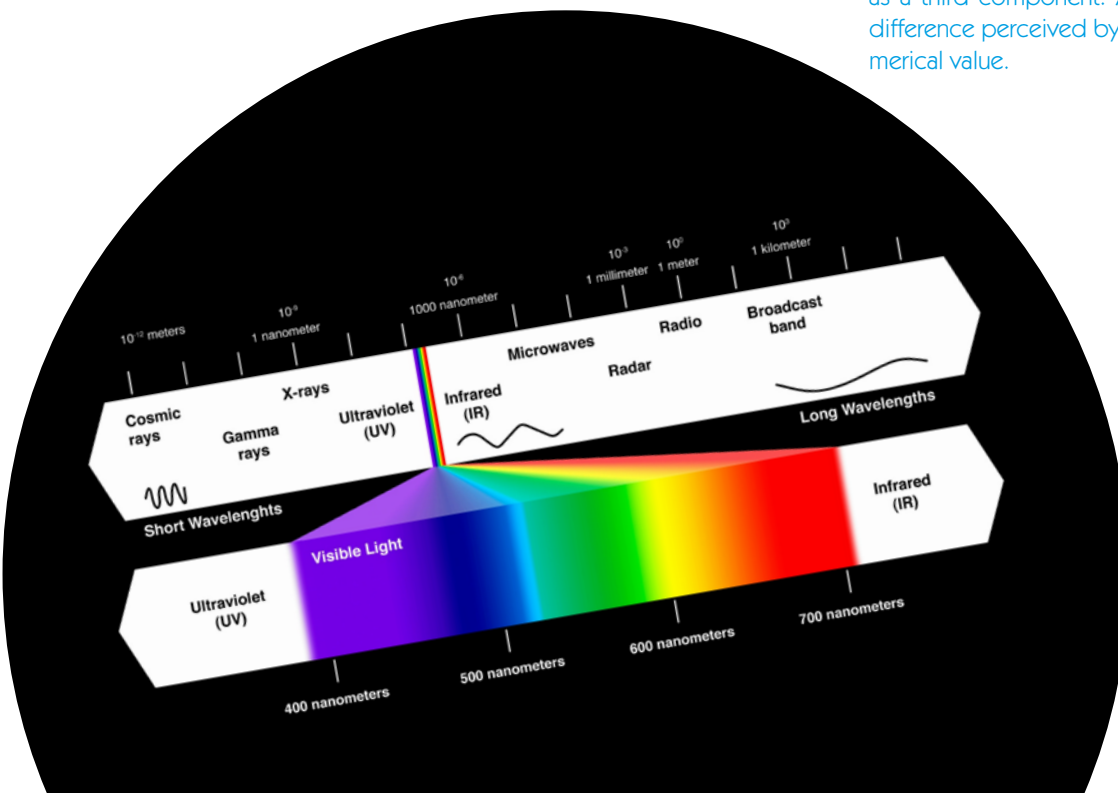
An excursion into the animal world shows us that color vision there can occur in very different manifestations. Some birds have four color receptors and are thus in a position to distinguish more color variations than we humans, while some dogs just have two of these receptors and are therefore able to differentiate significantly fewer colors.

## Colorimetry

The human cone cells respond to different wavelengths with different intensities. They are not clearly separated but instead overlap, so that a certain spectral wavelength stimulates all receptors but in varying degrees of intensity. As early as 1931, the CIE (International Commission on Illumination) standardized the sensitivity curves of cone cells based on experiments in the 1920s. These sensitivity curves are still used. They form the basis for what is called a standard observer, that is, the average visual perception of a human being.

The cone cells that are sensitive to color and rod cells that are sensitive to brightness are distributed unevenly in our eyes. The center of our retina is dominated by the cone cells that are sensitive to red and green; this region is also called the yellow spot. In the outer regions of the retina is where we find far more rod cells as well as cone cells that are sensitive to blue. If an object is perceived within a visual field of  $2^\circ$  (the width of a thumb on an outstretched arm), our color impressions are different, especially in the blue spectrum, compared to looking at a color impression that takes up a larger visual field. Industries with larger objects such as cars or interior designs called for other forms of sensitivity curves, which led to an extension in 1964 of the previous CIE system in place since 1931. Both the  $2^\circ$  and  $10^\circ$  standard observers are based on three coordinates (x, y, and z). These convert human vision into a mathematical model that was based on psycho-physical properties of our eyes.

Mathematical models with three dimensions are very popular in science since they correspond to the three-dimensional perception of our environment, that is, they match to some extent our natural way of perceiving things and thinking. It is also easier to comprehend and calculate them mathematically given their complexity. Historically, a variety of three-dimensional models of color have been published by scientists. They each look at a specific property of colors and represent them in graphs. The HLS color system, for example, categorizes colors based on hue and then differentiates their saturation and brightness. The Lab system works in a similar way, where colors are arranged on an initial axis between green and magenta and a second axis between blue and yellow based on their characteristics. Brightness is also included here as a third component. Another important factor at that time was the difference perceived by a human (color difference) expressed as a numerical value.



# Broad Spectrum, Deep Knowledge

GMG Academy is located at the GMG headquarters in Tübingen, Germany. It is where you will find a team of qualified trainers who teach interesting workshops on all critical issues of color management.



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## WORKSHOP:

### Color Management and Standardization

Color management and standardization methods of the printing industry can only be successfully implemented if you have the right basis and sufficient knowledge. This workshop addresses a diverse target group: Consultants, production managers and employees from various segments of the printing industry are all welcome, regardless of their prior experience.

**Please contact us for dates**

## WORKSHOP:

### Packaging – Proofing and Separation

In this workshop, participants will be able to follow the entire spectrum of packaging printing with current GMG solutions. Contextual information and technical backgrounds will be explored in depth, so that upon completing the course each participant will be capable of implementing optimized proof-to-print matching and improved color communication in their own processes.

**October 15-17 (in German), November 5-7 (in English)**

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## Tip: The free GMG webinar program

In addition to the workshops, GMG Academy offers free webinars on various topics. Please visit the GMG website for information on how to register. The current dates of the webinars are also available here:

[www.gmgcolor.com/know-how/academy/webinars/](http://www.gmgcolor.com/know-how/academy/webinars/)

It is worth having a look in the archive: You can view recordings of previous webinars.

## WEBINAR:

### CxF and SCTV: Unscrambling your Spot Color Solution

The correct form of communication is crucial when it comes to transmitting colors and color values. The webinar focuses on the CxF-format as well as the SCTV-formula and participants will learn how both formats can be integrated into workflows.

**June 11 at 11:00 a.m. (in German) and 3:30 p.m. (in English)**



Johannes Betz, Head of GMG Academy: "We offer workshops on all critical issues of color management."

### **Moving forward efficiently – practical content and individual workshops upon request**

In order to provide color management professionals with the best possible support when using GMG software, GMG Academy has developed an entire series of new workshops for 2019. These workshops cater to digital printing enthusiasts as well as packaging experts or generalists. Whether you are a decision-maker or a technician, virtually everyone involved in the process chain will find something of interest in the new program. GMG Academy also provides individual workshops. A tailor-made program can be configured upon request. Personal workshops can be held at GMG in Tübingen, Germany as well as at customer sites or online.

For more information and to register, go to [www.gmgcolor.com/know-how/academy](http://www.gmgcolor.com/know-how/academy)

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We look forward to welcoming you!

#### **WORKSHOP:**

##### **Digital Printing – Process Control and Profiling**

Not only engineers who are inspired by digital printing can widen their knowledge in this workshop with its special focus on GMG ColorServer and data conversion. The workshop will also provide conventional printing technicians with the opportunity to learn how the printing process and the corresponding parameters can be implemented, mastered, and monitored. The focus is placed on efficiency and professionally implementing digital printing.

**October 22 - 24 (in German), May 21 - 23 (in English)**

#### **WORKSHOP:**

##### **GMG Profiling and Optimization – Intensive**

In this individual workshop, participants can create proofing profiles and convert files based on their own project examples. The in-depth knowledge will particularly benefit experienced color management experts. The focus of the workshop can be set individually and varies according to the needs of participants.

**Please contact us for dates**

#### **WEBINAR:**

##### **Color Profiling for Digital Printing – Tips and Tricks**

Everyone is talking about digital printing, in the commercial printing sector as well as in the packaging printing. Professional color management can ensure ideal results by combining and taking full advantage of the benefits of both digital and conventional systems. How does this work? You'll find out in the webinar.

**August 6 at 11:00 a.m. (in German) and 3:30 p.m. (in English)**

#### **WEBINAR:**

##### **Multicolor File Processing with GMG**

This webinar touches on the opportunities that GMG solutions offer regarding the topic of color space extension. All the relevant topics are addressed, from creating print data to processing through to the specific issues in this area.

**October 8 at 11:00 a.m. (in German) and 3:30 p.m. (in English)**

PORTRAIT

# “I Love to Solve Problems”

Birgit Plautz is responsible for the Service and Support departments of GMG Americas.



Photo: Kelly Gorra

“GMG Americas is a terrific team; we all get along well and it feels like one big family here.”

**It has been nearly 13 years since Birgit Plautz, affectionately known as “Biggi”, began work at GMG in Tübingen. 13 years that started in Technical Development and ultimately led to her moving almost 6,000 kilometers away to Boston.**

**A**fter five years in Technical Development, an opportunity arose in 2011 that was a dream come true for Plautz – becoming the Head of the Service and Support departments of GMG Americas. There she is in charge not just of the support employees and service technicians, her department is also responsible for all trade fairs and conferences in her large region, which includes the USA and South America. In addition, Plautz also heads the American counterpart to the GMG Academy at headquarters.

“The great thing about this job is that I have a lot of control over what I do.”

She never thought that she would land in a software company immediately following graduation. “I thought I would first work at a printing company for a few years and then, when I had enough experience under my belt, I might be able to go into development,” she says with a laugh. Before studying printing and media technology at the media university Hochschule der Medien in Stuttgart, she completed vocational training as a media designer. Even back then, her favorite task was managing the technical details of the printer. During her studies, she even managed to register a patent in conjunction with Heidelberg Druckmaschinen AG. For her graduate degree thesis, she developed an algorithm to convert color values on different kinds of paper.

Today, 13 years later, Plautz is in charge of nine employees whose praises she gladly sings. Harmony within her team is important to her. She doesn't like serious discussions, but does not shy away from them either. “Sometimes I have to make difficult decisions for the good of the team and the company, but that is part of my job,” Plautz says. Fortunately, these kinds of decisions are rare. A typical work day for Plautz consists of six hours on the telephone and two hours trying to cope with the onslaught of emails in her inbox. She also spends lots of time at airports on the way to events, customers or other appointments.

In the beginning she didn't really enjoy flying, but it has meanwhile become a regular mode of transport for her. There have been years in which she flew more than 150,000 miles. Her travel time has meanwhile decreased, and she regards precisely this flexibility as one of the advantages of her work at GMG. “The great thing about this job is that I have a lot of control over what I do,” she says. “GMG Americas is a terrific team; we all get along well and it feels like one big family here.” The only disadvantage, according to Plautz, is the great distance to headquarters in Tübingen and the departments there. “You can't just get up and run over to somebody's office for a moment to have a chat about something.” This makes the annual world gathering of the GMG family even more important to her, including the social aspects.

Her eyes light up in particular when facing an obstacle to overcome. “I love solving problems, no matter whose problems they are,” says the 39-year-old, “I feel happy and satisfied when I am able to discover the root of the problem. The challenge, the question of whether or not I can do it, is what motivates me and awakens my interest. Usually I have a feel for these kind of things – I often find just the right spot to look.” It doesn't make any difference to her if the SOS call comes outside office hours. The positive feedback Plautz receives when she has managed to save the day makes her feel good.

She is no stranger to the industry in America. As a member of the Board of Directors of the Technical Association of the Graphic Arts (TAGA), she moderates conferences and proposes topics to be addressed. She also has voting and decision-making rights in all matters related to the conference. In all of this, Birgit Plautz attaches great value to innovation. She recently stepped down from a committee for another event because she felt that not enough focus was being placed on research.

When she is not at GMG, Plautz likes to spend her time in or near the water. She loves all kinds of water sports, goes kiteboarding on a regular basis and recently purchased several kayaks. Not coincidentally, the house that she moved into last year is just a block away from the ocean.

Plautz has to laugh when asked about the biggest differences between Germans and Americans: “Germans love to complain loud and long. In the USA, it is considered impolite to answer the question “How are you?” with anything negative. But I certainly do miss the opportunity to curse in my native Swabian dialect!”

## SELECTIVE FACTS



### Stretching the truth

The Eiffel Tower in Paris has been painted 17 times since it was first opened on March 31, 1889. Originally a reddish brown, the emblem of the French capital city has also lit up the skyline in ochre yellow and is now a bronze color. It is painted a lighter hue at the top to make the building look even longer. The painting process takes more than a year and requires 60 metric tons of paint. (spiegel.de)

### Green makes us happy

Researchers in England have discovered that even just five minutes in nature can have a significant impact on how happy people feel. Test subjects spent time outdoors in a variety of ways: on foot, cycling or on horseback. Both their sense of well-being and their self-confidence increased after just a few minutes in the fresh air. According to the researchers, the first few minutes are key – the effect they measured did not increase after that. (morgenpost.de)

### Roll out the red carpet!

Red carpets are omnipresent in photographs of every movie premiere, award ceremony or party attended by celebrities. The reason why only the color red will do for the carpet on which these famous feet tread is linked to a special kind of red – a deep purplish red known as Tyrian purple. This hue, made from the secretion of a sea snail, was long the most expensive dye in the world. It took thousands of snails to produce one gram of Tyrian purple. Accordingly, the right to wear this color was reserved for senators, emperors or cardinals. The first mention of a red carpet is in Greek mythology, when such a carpet was rolled out for the triumphant King Agamemnon on his return from Troy. There was no thunderous applause for the king at the end of that red carpet, however. Shortly after his return, he was murdered by his wife and her lover. (spektrum.de)



## ALTERNATIVE QUESTIONS

Karl Gessner

Managing Director GMG UK



Photo: Mary-Anne Gessner

**What is your favorite color?** Blue, especially dark blue.

**The place you like best to spend your time?** There are so many: In vineyards, a walk in the mountains ... my favorite is playing with my family on the beaches of Australia or South Africa.

**What was the last movie that you watched?** *The Lego Movie 2*, the graphics and ideas were incredible!

**Something most GMG employees don't know about you:** I am a passionate wine enthusiast.

**What color describes you best? And why?** Green symbolizes my attitude towards life because it represents opportunities, innovation and energy. That is how I look at my career, my family and life in general.

**Are you a morning person or a night person?** Strangely enough, I think I am a little bit of both. I love to get up early and to watch the sun rise. At the same time, I do my best work late at night.

**How do you spend your time when you are not at GMG?** I spend my time with my family, on trips, exercising or working in the garden.

**If you could have dinner with anyone at all, regardless if they are currently dead or alive, who would it be?** Nelson Mandela. His legacy and his teachings are true pearls of wisdom.

**What was your first job?** I worked as a retail sales manager in a leading retail store chain in South Africa.

**Your favorite animal?** Dogs, we own two.

**Tea or coffee?** Definitely coffee, the stronger the better.

**Where does color play the biggest role in your life?** Color enables us to communicate in a vivid, three-dimensional manner. I use color to explain concepts and ideas at work because colors go deeper than words.

## GMG UPDATE

The latest version puts you a step ahead of the rest.



### GMG ColorProof 5.10.2

**Binding and comprehensive quality control of digital color proofs on the basis of defined standards**

- Web-based setup for easier installation: With an active internet connection, required resources are downloaded directly from a GMG server
- Accurate calibration process and ideal print quality through automated paper feed adjustment

for Epson printers with an ILS30 measuring device

- Simplified verification of OpenColor proof standards
- Various new calibration sets and proof standards

### GMG ColorServer 5.0.6

**Our solution for automated color conversion ensures optimum color results and stable printing processes. Also available with ink-saving profiles**

- GMG SmartProfiler Option of GMG ColorServer allows to adjust a digital printing machine to an individual input color space, e.g. a specific in-house standard or the color space of another machine
- Versioning of REST API
- Improved file detection for Hotfolders on network locations: The file system can be polled directly by GMG ColorServer, instead of

using the event notification from Windows. The polling of the input folders can be activated for each Hotfolder individually.

- Automatic update of Output Intent ICC Profiles with incorrect ID

### GMG OpenColor 2.2.1

**Patented spectral data profiler for color-accurate prediction of the interaction between colors and the substrate**

**Simple generation of precise proof and separation profiles**

- Spot colors can now be deleted from libraries, gradations can be removed after being assigned to a spot color
- GMG OpenColor now supports SCTV as a calculation method for the dot gain of spot colors. This method produces an equal visual spacing of tones between substrate and solid. The function can be used for color corrections and gradations. The Murray-Davies equation, which was used before, is still available as an alternative.

- Improved behavior if ink sequences are changed: all valid overprinting information will be used for profile calculation, which results in a better color match
- New features for Separation Rules: maximum number of output inks increased to four, limitation of output inks and manual edit of output ink percentages possible, changes in input colors and target Lab values can be applied with one click

### GMG ColorPlugIn 1.3

**Color conversion with color management from GMG in Adobe Photoshop**

- MinDot tools for checking and adaptation of minimum tonal values in flexo printing
- ChannelRemover for removing and compensating individual channels in one image or one selection
- ChannelChanger for replacing CMYK channels with special color channels

- GMG OpenColor Preview for generating a color-accurate preview of process and special colors right in Photoshop
- New Photoshop palette

# IF YOU THOUGHT **MAXIMA** WAS SHARP, YOU SHOULD MEET **RESISTA**

## THE **IGEPA SYSTEM** FOR SCALE COLOURS AND VARNISHES

Maxima, Resista and many more – they're worth knowing, because the extensive IGEPA range of colours and varnishes satisfies your every wish. In addition to having a comprehensive network of Pantone mixing stations, we are also serious about being environmentally friendly. Best of all, our products all work as one system and are tailored to each other to work in any possible combination. Let yourself be impressed and meet the other products from our almost complete IGEPA offering.

