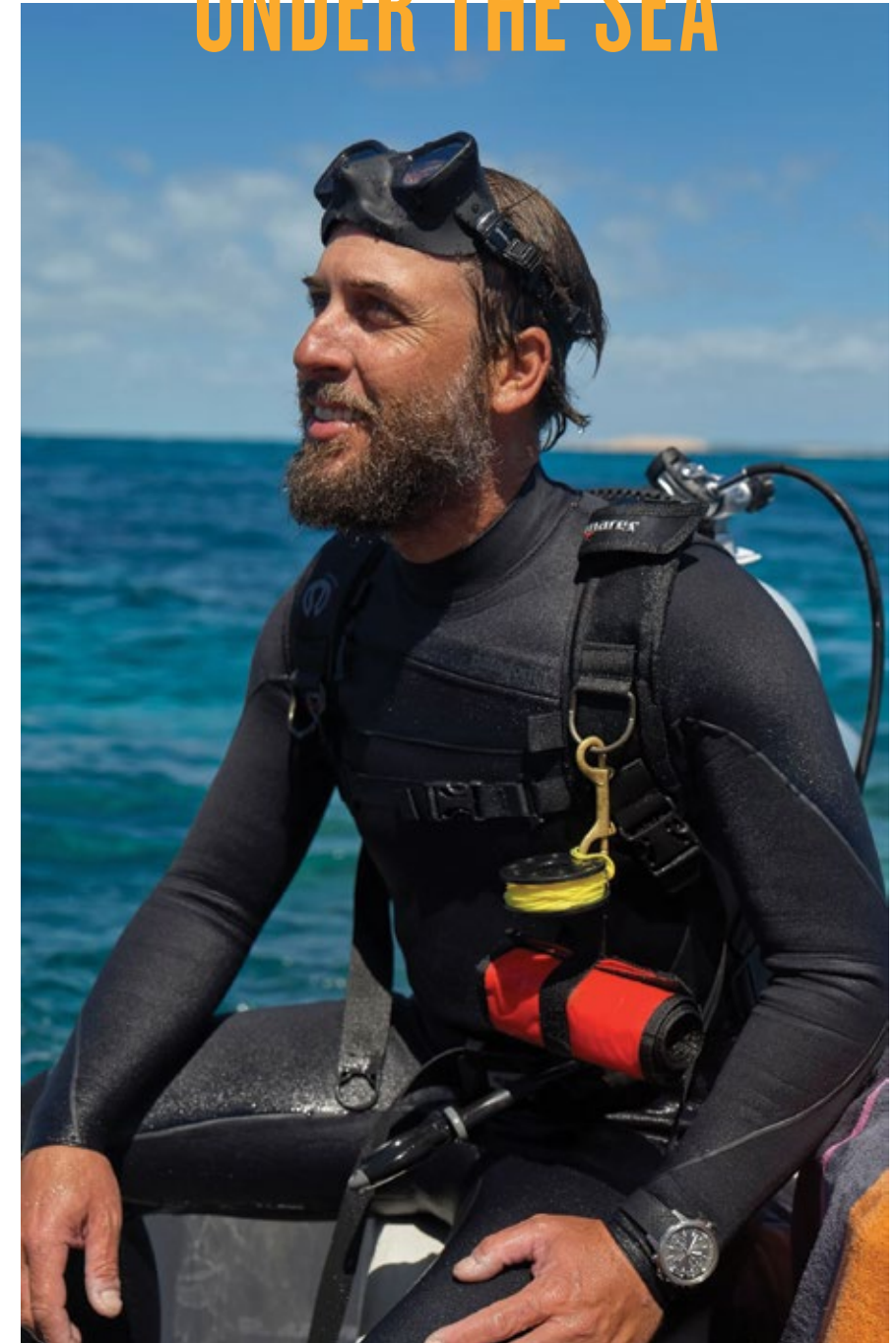




# MICHAEL MULLER 360 DEGREES UNDER THE SEA



**The photographer-explorer on the challenges of taking the world deep-sea diving, in virtual reality, for the good of the planet.**

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You might not know Michael Muller by name, but you know his photographs. If you've seen any Marvel movie poster over the past half-dozen years, he shot it. As a Hollywood-based fashion and commercial photographer of 30 years, he's shot portraits of the most iconic actors, musicians and athletes on the planet — Pitt, Pharrell, Kobe — plus countless editorial features and ad campaigns. But Muller's true passion is found beneath the sea, at the juncture of his professional craft, his conservationist alter-ego and the birth of

the new medium of virtual reality filmmaking.

An ex-snowboarding-photographer-turned-superhero-shooter may sound like an unlikely Cous-tau. But Muller compensates for his lack of a scientific background with indomitable energy and a knack for leveraging his network to carve new paths. Between diving expeditions, Muller spends his days in an editing bay, on land, working on his upcoming 10-part underwater VR documentary series, tentatively titled *Into The Now*, coming late 2019.



## What is your backstory as a photographer?

I started shooting when I was fifteen, with snowboarding, in the Eighties. I got published and was shooting big bands and famous snowboarders for brochures and ads. Moved to Colorado, did a full season there, and then I moved to LA when I was nineteen and started turning my lens towards models and actors, kept shooting musicians, rose through the ranks of professional photography, and started shooting for all the big magazines, commercial photography and advertising work. Which is what I've done pretty much my whole career.

## How did that turn into underwater VR?

I have always had personal projects, and fifteen years ago I had a huge fear of sharks, so I wanted to go photograph a great white. It changed my life and altered the course of my photography career. I started shooting a lot more ocean stuff and committed my free time to that. I was gonna wrap that up about three years ago; I felt like I'd done everything I could. And then VR came along, which puts me where I'm at now.

## What's the VR documentary series you're currently working on?

It's a series shown in 360 VR, similar to a *Blue Planet*-type series, where we have crisscrossed the planet and documented holy grails of underwater activities — the must-sees of ocean life. All the cool ocean stuff, so that people can experience it almost in real time from their own three-dimensional POV.

## How do you go about filming VR underwater?

VR is a medium in its infancy, so technology's moving really quickly, and on several occasions I've had to create cameras for rigs that didn't exist, because we're going where no one's gone before. So that requires recruiting lots of engineers to shoot VR. [Because of how close the lenses have to be to stitch the footage together], that adds a whole other dimension when you go underwater, because you're dealing with ports, the bubbles around the lenses — so it's required me to really go outside the box and find companies that are willing to manifest [the] dream.

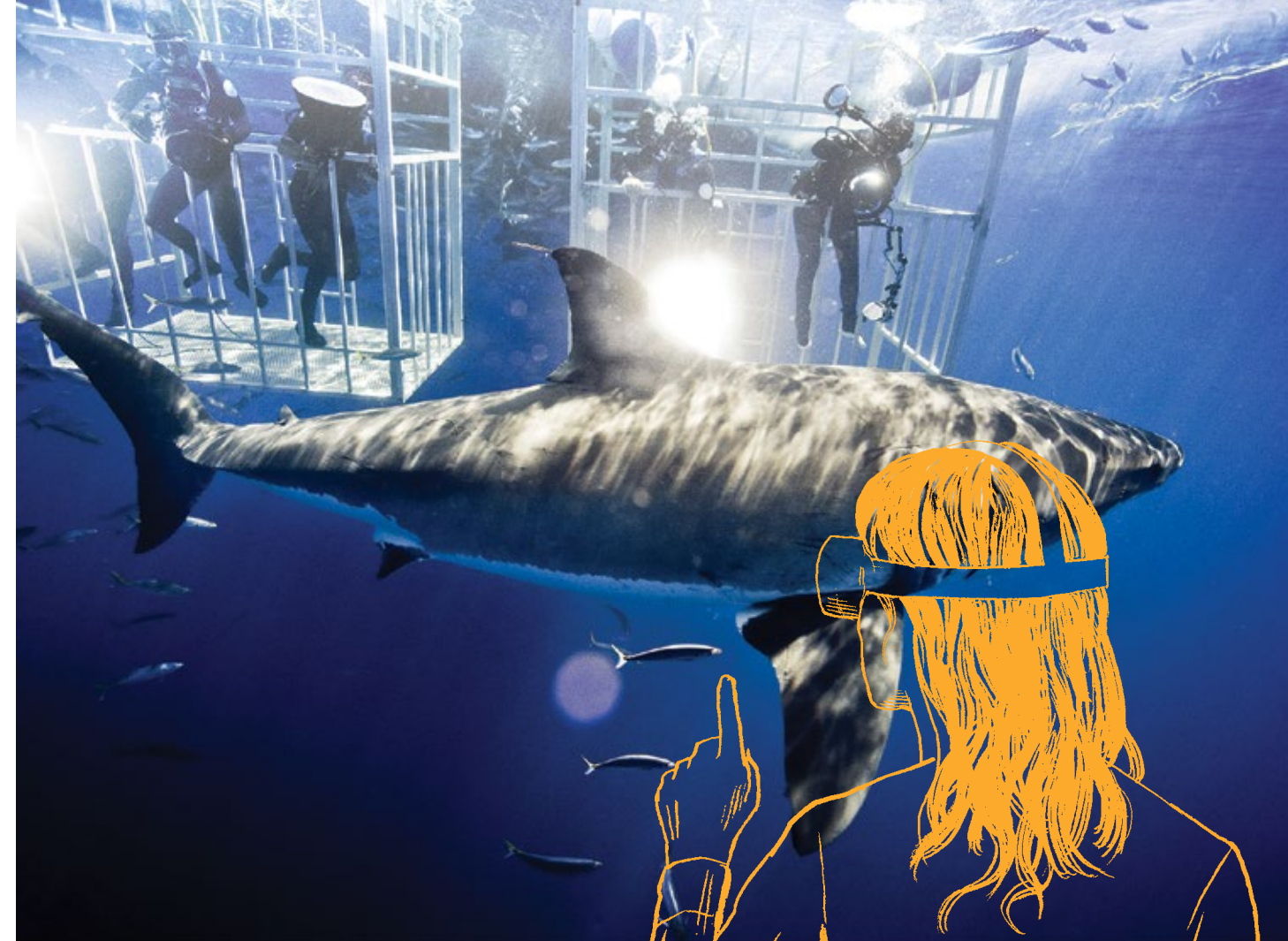
If you look at the trajectory of the equipment we're using, it's getting smaller and smaller, so you go from using a 120-pound camera to a ninety-pound camera to a seventy-pound camera; from three feet high to two feet high to one foot high. The technology's getting better, the cameras are getting smaller, low-light capabilities are getting better. But for the most part, we're dealing with very big, heavy housings. But they work, and that's what matters.



## What kinds of challenges do you have to overcome?

From the moment the idea comes into your head, you're faced with challenges. Because first it's, *Oh, that doesn't exist*, and then the challenge is to make it. And then you make it. *Is it going to work?* You've got an erector set of cables and cameras, you've got to figure out where the problem is, and you're out on location and the sun is beating on you. Or you're getting on an airplane with eighty cases. When we used to do still and motion shoots, we'd bring maybe thirty, forty cases — now we're bringing sixty to eighty cases. And then there's the problem of data. These VR cameras are just chewing through terabytes, so you have to get fifty-terabyte hard drives — and multiple ones, because you've got to do backups. Then you're out in the field and you have problems with the camera.

One camera down means the whole dive is over. You can't use any of that, so you've gotta go down and re-do that dive. You just do the best you can to roll with it, like Shackleton did. Just like the explorers hundreds of years ago. You just adapt



“BIG BRANDS ARE USUALLY A COUPLE YEARS BEHIND WHAT WE'RE DOING BECAUSE THEY HAVE TO MAKE THINGS ON A MASS SCALE.”







## THE GEAR

### Mares Scuba Equipment

"I only dive with Mares, I think they're the best. My whole kit is Mares."

### GoPro Fusion VR Camera

"It's a great camera to clamp onto the boat to get that topside footage. If you're looking to get a camera to start testing the waters of VR, this is your camera."

### IWC 50th Anniversary Ceratanium Aquatimer

"I've been wearing IWC for twelve years, and of all the watches in the Aquatimer series, this is by far my favorite."

### Leica SL

"I use the Phase One in the studio; the Leica I use when I'm on location and outside. It's an incredible camera for the size and the weight, forty-seven megapixels, and it's a Leica, so you've got amazing lenses to work with."

### Vrtul 1 Stereoscopic VR Camera

"I partnered with Vrtul to make this first underwater stereoscopic VR camera. It had its challenges, but it got the job done, and what it created was a game-changer."

### Patagonia Wetsuits

"When I was diving in the Arctic, shooting orca and humpback whales, everyone was in dry suits except for me and my cameraman, Morne Hardenberg. We were both in Patagonia wetsuits, because they're that good."

### Phase One IQ4 150MP Camera

"The camera I use for all of my superhero shoots. It makes the costumes look incredible because of all the detail it captures with 150 megapixels — and the detail *within* the detail."

### DJI Drones

"Drones take out the \$1,500-per-hour helicopter cost of doing aerials. They also allow us to fly places the helicopter can't go, and to get closer to animals without scaring them. They're a great tool."

### Oculus Go VR Headset

"For two hundred bucks, it's the best VR headset you can get, and the resolution is better than Rift."

### Master & Dynamics MH40 Headphones

"Whenever I'm giving people my VR to watch, I always give them Master & Dynamics headphones."



### Aston Martin DB11

"It really is a piece of fine art on wheels. I've shot and owned a lot of cars, and I think it's the most beautiful car created. It's like a drug. I feel dopamine dropping every time I get behind the wheel."

### Boxfish 360 VR Camera

"The best monoscopic underwater VR camera available on the market."

### RED Hydrogen Phone

"You can watch 3D on the screen without glasses. You can also film in 3D from your phone, and you can get a housing to film underwater 3D."

### RED Epic Dragon Camera

"I shoot all my 2D motion on a RED — the living one-sheet movie posters, the Aston Martin commercials, as well as on my expeditions. It's my workhorse for any type of 2D video."

and say, *All right, let's land our ship here.* It takes a team of people that have one single-minded purpose to get this mission accomplished, whatever it takes.

### How do you find the equipment you use? What companies do you develop it with?

Big brands are usually a couple years behind what we're doing because they have to make things on a mass scale. They're slow-moving glaciers. We need to be fluid and constantly evolving, so we're the R&D grunts — the bigger companies see what we're doing, see there's a need, and

then jump in. You have to go to the one-guy shops, the small engineers. That said, I've worked with the Jet Propulsion Laboratory, NASA engineers, so I've been lucky to work with some smart people to tackle how to get cameras or lights to work underwater, at depth. The underwater world of image-making is small, everyone knows each other. And then you go to the VR world, and it's *really* small.

### How has your technology changed since you started filming?

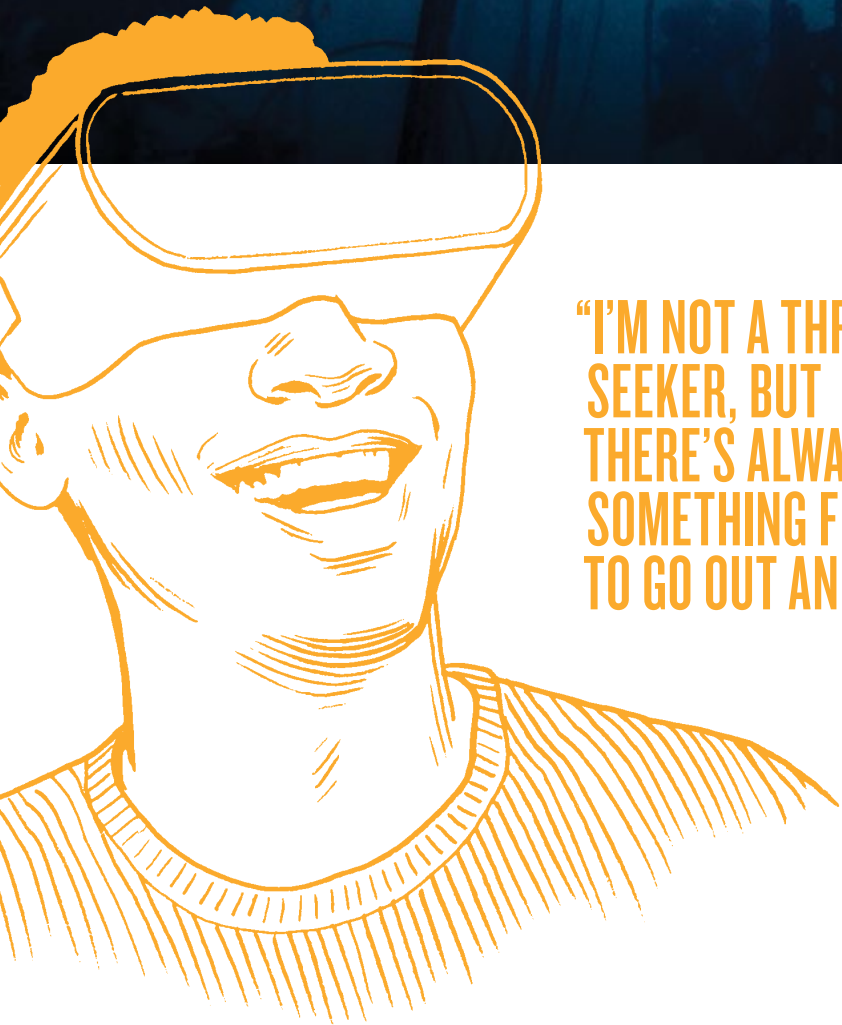
Three years ago, the only way to shoot underwater was with a camera called a 360

Rise, which was a ball of six GoPros. That's what I used to shoot my first proof of concept, and my takeaway from that expedition was, I need to make a new camera system, one that doesn't exist, because I'm not making the *Blue Planet* of VR on GoPros. I mean, they're great cameras, but I knew technology was going to evolve, so I knew I had to capture footage that would live four years from that point, that would live today or two years from today.

So I set out to find people that could make stereoscopic, high-quality VR camera housing. They proceeded to make the Vrtul 1, the camera system we shot the primary footage for our series on. Nine months later, we came out with the V2, which was smaller, and [has] nine cameras instead







**“I’M NOT A THRILL SEEKER, BUT THERE’S ALWAYS SOMETHING FUN TO GO OUT AND TRY.”**

of thirteen. And it’s continuing to evolve. We’re now working on making a camera system that’s a fifth the size, a fifth the weight, with incredibly advanced cameras — the same cameras that go up on the space shuttle. They’re about sixty to seventy thousand dollars per camera, and we’re going to be using seven of them.

### **What is your vision for the future for VR filmmaking?**

It’s limitless. It has uses for medicine, for philanthropy, for empathy, especially whether it’s dealing with refugee work or lack of food, drinking water, any issue that our planet faces. It’s a great way to shift people’s perceptions because it hacks your

brain. People really feel they’re underwater with a whale in front of them, to the point where they continually reach out and try to touch the animals that they’re watching. You don’t see people in a movie theater trying to reach out towards the screen — but put a headset on, and that happens all the time. So it has a powerful way of implementing change or shifts of perception. Which has been my goal for fifteen years, for sharks — trying to change people’s perceptions of that particular animal, undo what *Jaws* did.

### **How can VR help with conservation?**

I screened *Into The Now* for a group of sixth graders a few days ago, and every single one of them was just blown away and excited and smiling. That’s more rewarding than anything. That’s why I do it. This new generation is very tech savvy. Ask any parent, their kid knows how to operate their phone better than they do. Which is cool, but on the flipside this generation is not going out into nature like we did. They’re plugged into a T1 line, so they’re not plugged into the river running outside in their backyard. And that’s true for adults, too. We’re becoming more urbanized, everywhere you go around the world.

Nature keeps us in balance. It keeps us in check. If we’re not seeing what’s going on in nature, we turn a blind eye. A lot of people won’t go swimming with great white sharks or go on sardine runs, so if I can bring it to them and let them experience it, it’s a powerful way of introducing nature to them, and hopefully planting a seed that gets them off the couch, going on an adventure, experiencing it for themselves.

There’s no substitute for the real thing. As cool as VR is, there’s still a drastic change from seeing a whale shark in a headset to swimming up next to a real, seventy-foot



whale shark. Engage in the planet. Life is short, we live on the one planet we know of that has an ocean, and we know more about space than we do about our own ocean.

### **What excites you, after all you’ve done?**

It’s a huge planet, and as much as I’ve done there’s still so much left to do. I dove Cuba for the first time. Cuba’s been off limits to us. Russia, for the most part, has been off limits to us. We know little about it. I was just telling my dive team, *There’s gotta be great whites off Russia, right?* How cool would it be to go to Russia? Because that hasn’t been documented, at least not that we’ve seen. Tens of thousands of miles of coastline off Africa that’s very remote. I’m not a thrill seeker, but there’s always something fun to go out and try. I don’t necessarily know what that is yet, but I’m about to turn fifty years old, which means I’ve got another decade or two left of health, and there’s way more to do than the time I’ve got left to do it. ●

