

# BOWMAN on Swimming... and Phelps

*University of Michigan coach Bob Bowman shares his coaching philosophies as well as his insights on Michael Phelps—from a young age grouper to the best in the world.*

*By Michael Brooks*

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What makes Michael Phelps such an extraordinary athlete? To explore that question, we asked Coach Michael Brooks to interview Phelps' long-time coach, Bob Bowman. Here's how it went... *(Michael Brooks' questions and comments are in bold face. Bob Bowman's answers follow.)*



**Bob Bowman and Michael Phelps**

**Michael Brooks: Who have been the most important swimming influences on your coaching?**

*Bob Bowman:* Paul Bergen, of course ... Murray Stephens ... David Marsh. Really, everyone I've had the opportunity to coach with—all of the coaches that I've worked with have taught me something.

**What did you gain from these influences?**

From Paul and Murray, that stroke technique was the most important thing. That doesn't mean you don't condition your swimmers, but without the technique, the conditioning is meaningless. And from David, I saw how to build a group of people into a team and motivate them toward a goal. David is a master motivator. He's a technician as well, and all three share that, but he's more of a free thinker, more intuitive, whereas Paul and Murray are more structured in their approach, particularly Paul. I tend to be more structured in how I do things, but from David, I learned that you get a

feel for where the kids are on a certain day, and that's how you coach them.

**How are you most different now from four years ago? Eight years ago?**

I have a much more realistic perspective about what it takes to reach the top of the sport and to succeed there—about what things are important and what are not.

**What are some of your early coaching ideas that you've changed over the years?**

The most important factors leading to high performance may not have anything to do with training: the mental, emotional, psychological aspects are far more important than just the training program. I think eight years ago, I would have told you that if I could just have enough pool time, or the right set to do, I could have accomplished any goal.

**Do you think that's common among younger coaches ... that they think if they can only get the magic sets from established coaches, their swimmers will take off?**

Yes, I think it's very common: if they just get the right set or the right drill or the right gadget that will make the difference. They've got to get the right *swimmer* first—that helps ... a lot.

**You've been on several national team coaching staffs over the last few years and have been in contact with and watching closely the best in the world. What factors distinguish the swimmers at the very top from those near it?**

Those at the pinnacle can take care of the myriad of little things that go into performing at peak over and over throughout a long and stressful meet like the Olympics. Michael (Phelps) has been learning since he was 11 and 12 how to take care of himself—how to prepare physically and mentally for each event, how to race, how to warm down sufficiently, when to take his sports drink to jumpstart recovery, when and how to rest for maximum recovery, how to get to bed early and avoid the distractions of most kids his age, how to deal with getting drug-tested countless times, etc. The parts of his life all point toward swimming fast. He "practiced" travelling and how to maintain his form through time changes and long flights. He didn't wait until the Olympics or the Trials to learn these things—he's been learning them since he was 12.

**This sounds very similar to the idea in motor learning that you make a motor pattern automatic through repetition, then that frees the mind to focus during a race on tactics and racing instead of on the minutia of the stroke.**

It's exactly the same, but in a different context. I just think that Michael has learned

over a long period of time, step by step and fairly systematically, a very detailed and successful plan that goes with his swimming, and it's part of who he is so that he doesn't even have to think about the details. He has become so habituated that the routine is sub-conscious, so he can focus on the races ahead and how he wants to swim, instead of constantly being worried about whether he did this or that, whether he forgot this or that. He now gets into a zone and he is free to focus on higher order performance issues.

**How has Michael changed how we think about IM at the elite level?**

Most importantly, he's brought speed to the event. And that's an obvious improvement he's made over the last four years. He's much speedier now. The first 200 of his 400 is devastating. He goes out in 55 in the Butterfly—easily—and very few others can do that and be under control. I think that's what separates Michael from the Dave Whartons and Tom Dolans of the world. They were great swimmers and fantastically fit; Michael is fit and has speed.

**There seemed to be a trend over the past couple of decades toward specialising in one or maybe two events. Yet Michael turned that trend completely around. Do you see more top swimmers in the future following Michael's lead in expanding their event programs?**

Unfortunately, I don't. It's just too difficult, given the high level of competition worldwide these days—you're swimming against specialists every time you step on the block. It takes too much training at certain key years in a swimmer's development. But I hope the example of Kaitlin Sandeno and Michael can entice some coaches and swimmers to train for multiple events.

**Do you think there are more kids like Michael Phelps out there, undiscovered or undeveloped? If so, what is being missed or ignored; what mistakes are being made?**

Yes, they're out there. I don't know what's being missed or ignored. The problem is that they are going to other sports. Michael had a strong tie to swimming through his family. We were able to get Michael excited about high-level swimming early in his life because his sisters had swum on that level; and he happened to be at NBAC, where that level of performance happens. I think those are some of the main reasons why Michael Phelps stuck with swimming and didn't go on to become a great soccer or lacrosse player—which he had the talent to do. Those other kids are going to be good at other sports, too—they are great

athletes. Maybe Michael is going to help some of those talented kids stay in swimming through what he's accomplished—they can see what's possible.



**Michael Brooks**

**What are some technical things you are working on with Michael right now?**

Turns. How he approaches and comes off walls is really key for him. At the Trials, Aaron Peirsol just killed him into the walls, though coming off of them, Michael and Aaron were about even. We're also working on some stroke changes. His Breaststroke needs to be improved quite a bit.

**To what does Michael owe his recovery ability and, hence, his ability to swim overwhelmingly demanding event programs at major meets?**

He gets that from setting up good habits as a youngster. He's always had an appreciation for sleep. He's followed the guidelines that we gave him for nutrition, for hydration during training, for massage and physical therapy, for spa and hot tub. Everything that we've set up, he's bought into and uses—and a combination of those factors is where he gets his ability to recover.

**How have Michael's strokes changed as he has grown—not only the little particulars that you've worked on, but also how has he changed as he has gotten bigger and stronger?**

The main change has been his underwaters, and his ability to use that. His distance per stroke has improved while maintaining stroke rate. He always had really good stroke rate.

**How are Michael's strokes specifically tailored to his body? This is a question about thoroughbred conformation.**

I think that Michael's Butterfly is so good because he can ride very high in the water without a lot of energy. Part of this comes from the way he's built—long torso, wide body, but narrow hips. Also, he doesn't have a big, heavy musculature, so that enables him to swim a long, smooth stroke at a high stroke rate. He also has an ability to accelerate. He's tall, he's lean and he's narrow, but he's also strong. Per pound of body weight, he's very strong, and he's pretty well built for every stroke ... except

Breaststroke. Michael has a “man-made Breaststroke” instead of a “God-made Breaststroke,” as Jon Urbanchek told me one time. That’s perfectly true.

**What’s missing?**

His kick. He can’t turn his feet out at the right angle. That’s a combination of ankle, knee and hip flexibility.

**What do you see as the strongest aspects of each of Michael’s strokes?**

In Butterfly, he has the continuous kicking motion throughout a whole race—he’s the only person who does that at 200 metres. His kick the last 50 metres is devastating. In Backstroke, probably his legs ... but I think he can also swim with a longer stroke than most people. He can tempo it up, though I don’t like it when he does that. He can generate high speeds with very low stroke rates, and I think that’s the key to why he’s so good in Backstroke. I think he can be a lot better when he mixes that with a better tempo, or at least a more controlled tempo. He has a really quick stroke or a really long stroke. I like his long stroke. In Breaststroke, he has the ability to use his body action better than most people. And that’s good because he doesn’t kick well—at all. He doesn’t pull particularly well, either. In Freestyle, it’s clearly his kick and his ability to use the underwaters.



**Paul Bergen**

**What do you see as the biggest opportunities for improvement in each stroke?**

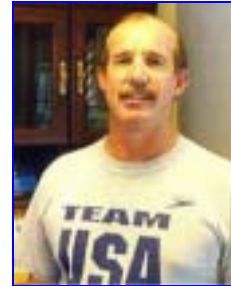
Well, in Butterfly, he needs to go back to an old-fashioned training program to build a base for the 200. I think the 200 Butterfly is the event where he could probably improve the most. In the Backstroke, like I said, building a longer stroke with a fast stroke rate, and managing it better—instead of either over-tempoing his stroke or under-tempoing it, being able to have a range of tempos with better control. In Breaststroke—improving the pull and the way his arms recover and initiate the stroke; he’s very inefficient there. And in Freestyle, more balance, improving his elbow position underwater, especially his right arm as he tends to slip water.

**What traits separated Michael as an age grouper from everyone else?**

Competitiveness ... fierce competitiveness. He was by far the most competitive kid around—he wanted to win everything.

**What separates him from the rest of the best now?**

Competitiveness is still one of them. And his attention to detail. His ability to relax when the pressure is on—as the pressure increases, he gets better.



**Murray Stephens**

**Michael has had one coach and one program for an extended period. How important is this?**

I think it’s *different*; I don’t know how *important* it is. I think any number of people could have coached Michael and helped him progress. But I’ve gotten to know him *very* well—how he works, what works with him and what doesn’t in training, how to motivate him. I think that’s very important. And I think it goes with the kind of swimmer Michael is. He’s always been out there in terms of performances. He needs someone who understands every aspect of him because he really tends to have some specialised needs as far as getting to the very top and reaching his enormous potential—not that other people don’t have specialized needs, but I do think that our long-term relationship has helped that.

**Looking back, what were your particularly smart moves at critical points in Michael’s development—where the bullet train could easily have come off the track?**

I taught him to six-beat kick in Freestyle. More precisely, I *forced* him to six-beat kick. That was absolutely critical. And I decided to spend his 11 and 12 years working on his strokes more than on his speed in the pool. He improved in those years, but not at the rate that might have been expected from someone with his talent. And I didn’t push him into a work load that he wasn’t ready to handle, instead very judiciously adding work as he was mentally and physically ready for it.

**What about smart moves over the last few years?**

The smartest move I made was hiring Peter Carlisle as his agent. Also, his mother and I sat down with our advisors and assembled a team around him that has allowed him to continue to

improve in the pool, while at the same time promote swimming and make what will be a very nice living from swimming. That will be seen to be the best move we made.

**What do you see as keys to developing super-talents?**

Long range planning. Definitely. Having a real sense of where this is going to end up and how you want to get there. I don't think that you can proceed season by season and just hope that everything works out. You need to have a plan. Second, you need to understand that their needs are going to be different in some respects, but that the basic thing you can do that will help them the most is to get them to realise that they are a part of your team and they aren't special. They do swim faster than the rest of the kids, but they are a part of your team. I think that's critical. Finally, I think that you need to build a team of people around them, each of whom is going to be in charge of one aspect. For instance, we have different people in charge of physical therapy, medical concerns, business aspects, scheduling and home life. I am in charge of his swimming and of coordinating all these other members of his team. I think it's important as a coach that if you have a relationship with a swimmer on this level that you are building a team of people who can support him. You can't do this by yourself.

**On that long-range planning, can you give me an example or two of what you mean?**

You need to start looking at the talent that you have. You never know for sure what is going to happen, but there are coaches around the country working with 12-year-old girls who are thinking, this girl may be ready for the 2008 Olympics, and we'd better start making the right moves right now to see that that can happen. That's the way we think at North Baltimore. You start looking down the road, and then start working backward. Or even start by looking at the world records. If we have a young man who we think might be capable of swimming 14:30 for the mile one day, and he's 13, what are the steps we can start initiating now that are going to help him get there? He can't get there today, but what are we going to start with—and the answer probably is stroke technique.

Then how are we going to manage his overall training plan—when is he going to start doing doubles, how often and how much volume, what are the expectations of intensity versus volume of the work? Then we start looking at how he handles competitions—what is his mental demeanour, how are we going to help him learn to be a peak performer? That's how I would go about it. It's not like you would have to have it

all written out—though some people might—though I would probably have a fairly detailed plan for the year. The closer you get to the present, of course, the more precise you can and should be. You just need to be looking down the road at where a possible destination is, then work backward to how you can reasonably reach that goal.

**Do you see any common mistakes made by coaches of talented kids?**

The main one is swimming them too much and too hard when they are young. Every coach, especially the young go-getter, wants his kids to swim fast, and you can get kids to swim very fast if you beat them to death. Back in my younger days, I had a small "elite" age group training group going 6-7,000 yards a day, pretty hard—and I had a couple of 10-year-olds in that group. I wouldn't do that now.



**Bowman and Urbanek**

**Can you outline the "Bob Bowman ideal developmental training plan for talented swimmers"?**

Well, obviously it's going to vary a lot, but I can give you a general outline. With 10-and-unders, I would do lots and lots of technique work, but also do some longer swims to get an aerobic bump. Kids are ready and willing to do it, and their bodies are adapted to aerobic improvements. Watch kids out on a playground—they are not running for 15 seconds then stop, 15 seconds then stop; they keep moving for hours. Kids are aerobic sponges. But the focus should be on building stroke skills. And on kicking. Kick often and hard and fast. With 11 and 12s, it's most important to build volume, especially with girls, though you shouldn't forget the occasional short, fast, speed work. Boys are usually behind developmentally, so they should probably be treated more like the 10-and-under girls.

If I had a group of pretty good 11-12 girls who had a good background in stroke and endurance development, I would be pushing them, particularly on the endurance aspect. I just think they're going to get the benefit of increased heart and lung size, increased

maxVO<sub>2</sub> potential—that they can use later in life, but that they can only get before puberty. You have to take advantage of that window. Once you do that and after they go through puberty, they can sprint, they can do anything you want them to, they can swim until they're 35, but they're going to have something to work with.

**Do you think, then, that 11-12 is the key age group in determining what kind of an athlete a girl is going to be?**

Yes, I think it is a very important period—maybe between 11 and 13.

**And for boys?**

Probably 14 to 15 are the crucial ages. And with the same emphasis: endurance. I think the big difference between the girls and the boys at that age is that the girls are going to be very receptive to a big training program. You'll get so much effective training done because of where they are psychologically and physically. They want to please the coach, they're very goal-oriented. I think the boys from 13 to 15 are more variable. You have to get the work done, but you may have to get it done in a different way, or at least package it differently. Make it more fun, more racing. Boys are going to be sold on acquiring a new skill, or feeling like they're learning something, or racing each other and pounding on their chests, while the girls will be much more into putting as much effort as they can into it, being much more serious when they're in that critical period. With 13 and 14s, the girls should begin some kind of strength training, they should be getting in some good hard work and their volumes should be building toward their maximum. By 15 or 16, more aerobically-oriented girls should probably be at full volume, though girls who are obvious sprinters can wait a bit.

**At 15 to 16?**

With the women you want to keep going, but at some point they're going to go through puberty, and you're going to have to pay very close attention to their bodies and how they change. Hopefully, you can put a dryland program into place that will minimise the negative effects of puberty. This is also an ideal time for strength training.

**Boys at 15 to 16?**

They're a step behind the girls. You need to continue with your program, but not step on them too hard. They're pretty serious by that point, and you can start to get them focused on senior-level swimming and what their real goals are going to be. But at this age, boys aren't going to be able to compete with the 20-year-old men, whereas the 15- or 16-year old girls are

going to be better than the 20-year-old women—that tends to be the rule. The boys are much more developmental. You're still saving that serious strength training for down the road.

**In the old days at North Baltimore, you had a reputation for not resting much, yet still swimming fast. Has your thinking changed much now that you'll be dealing with college men instead of boys and girls?**

Yes, it has, particularly when we have a big meet short course. I'm even coming around to this thinking regarding long course. For example, with Michael's tapers for Trials and the Olympics, I rested him as I would have if he had swum a normal program as opposed to his very heavy one—the same taper whether he was swimming 17 events or swimming four. I learned a lot last summer. We did a full taper for the World Championships, and he did very well in Barcelona. Then we spent the two weeks between Worlds and nationals doing only about 4,000 metres a day. Off of that, he went to College Park and swam very well again (one world record and a couple of American records). That taught me that he wasn't really losing fitness despite the drop-off in volume and work.

So I would say that for the Trials, his volume was pretty normal until about 10 days before, then we cut it down—but, again, as we would have normally done. I may have pushed him a bit harder on the intensity of the work just because I thought he needed to stay in contact with pain, for lack of a better word. Psychologically.

**How much can you reduce the volume when he's swimming 65,000 metres during the meet?**

Well, I did the week prior. No matter what they're doing at the meet, they need to rest. Michael is swimming less in practice that last week than he ends up swimming during the meet because I've noticed that he races just as fast and doesn't lose conditioning. Remember, he's built up his aerobic capacity over 10 years, so he's not going to lose much by a few days of reduced volume. I think you have to drop the volume—you have to drop something—if you're going to get the quality swimming at the meet. In the last three weeks before the meet, you have to make sure they are recovering, super-compensating. I don't think that means you have to cut the volume drastically, but it does mean that you have to cut enough to enable them to do the fast swimming, make the neuromuscular adjustments and get the psychological confidence that they are going to swim fast. That's why you manipulate the volume—so you can get the speed you want and rehearse the racing stroke.

**Did you notice any change in the amount of time Michael took to recover and get his lactates down through the meet at Trials, or through the meet in Athens or from Trials to the Olympics?**

No, not much at all. At Trials, he had a harder time recovering, but he also swam a harder program. The one night when he swam three events just crushed him. After that, he could barely walk the next day for the 100 Butterfly. That's why we gave up the 200 Backstroke. At the Olympics, I thought his program was very well balanced—he was able to do a good job in every race without getting destroyed.



**David Marsh**

**Lastly, there are some female swimmers from 25 years ago whose times are still competitive with today's times. Why is that, and is there anything we can do about it?**

You got me. First of all, today's swimmers probably should be setting higher goals. Also, I'm not sure our girls today have the same sort of training background those girls had. We need a trailblazer. It's going to be like Larsen Jensen's breakthrough in Athens. I guarantee you we're going to have four or five guys over the next couple of years go under 15 minutes in the mile. And I hope to be coaching a couple of them. They now know it's possible. I saw Larsen train over the Olympic camp, and he did some amazing things, but he only has two arms and two legs like everyone else. There are plenty of people who have the ability. It's like Michael in the 200 IM. When he went 1:58, only he and Jani Sievinen had been 1:58. Now three other people have been 1:58 just in the last year. Now that he's gone 1:55, it opens the door for some of those others to think, well, maybe I can go 1:57 or 1:56. They'll follow, I hope—Michael needs people pushing him.

*Michael Brooks is head age group coach at the Brophy East Swim Team in Phoenix, Ariz.*