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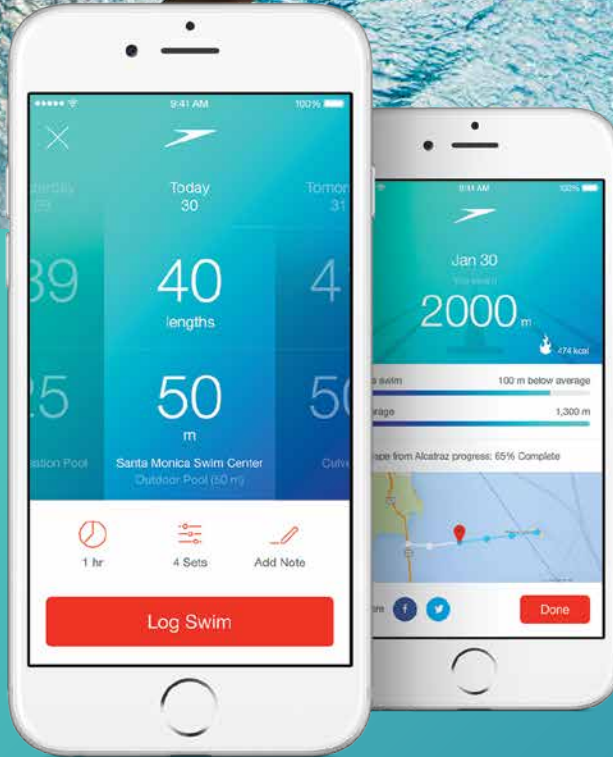
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A close-up, high-angle shot of a swimmer in a pool. The swimmer is wearing a red and blue patterned Nike Performance Poly swimsuit and black goggles. The water is splashing around their head and shoulders. The background is a blurred view of the pool's surface.

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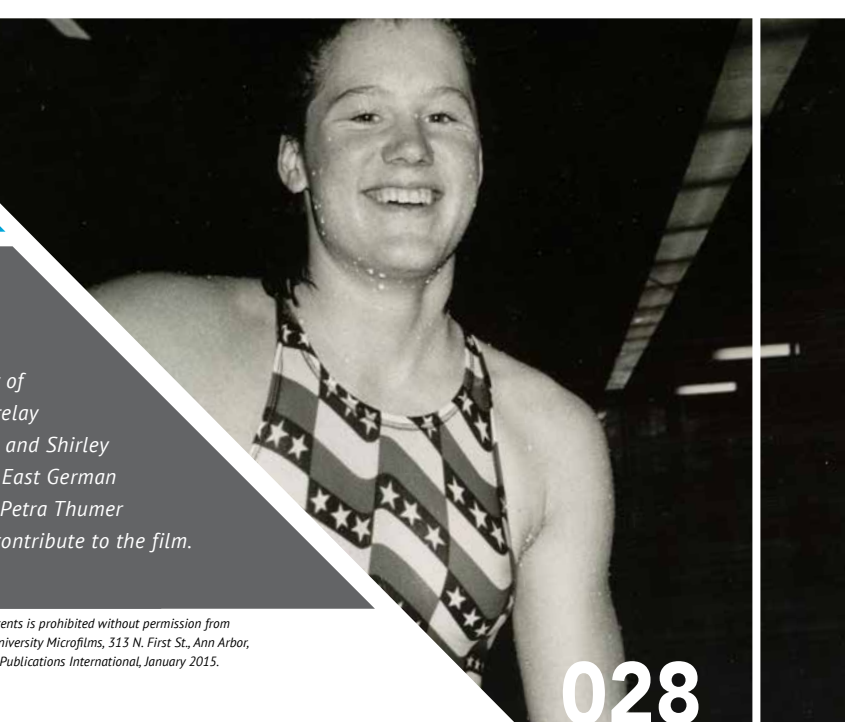
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ON THE COVER

USA Swimming is producing a documentary film that explores the dark chapter in Olympic history of systemic doping by the East German women at the 1976 Olympics. It also tells the story of the against-all-odds triumph by the American women's 4 x 100 relay (middle photo, from left—Kim Peyton, Wendy Boglioli, Jill Sterkel and Shirley Babashoff—and photos at top) that ended the meet in Montreal. East German swimmers Kornelia Ender (far left, middle; and lower right, top), Petra Thumer (lower right, left) and Andrea Pollack (lower right, bottom) also contribute to the film. (See story, page 33, and related stories, pages 20, 28 and 31.)





**CUSTOM
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Let's swim!

IS RUSSIA THE MODERN-DAY GDR?

BY BRENT T. RUTEMILLER

While producing this issue of *Swimming World Magazine*, which reflects on the state-orchestrated, systematic doping of the 1976 East German athletes, new details began emerging about Russia implementing its own version of a state-supported, mass-doping system.

At press time, information was still being dissected from a bombshell 60-minute documentary called, "Secret Doping Dossier: How Russia Produces its Winners." The documentary, produced by German broadcaster ARD, is a revealing and hard-hitting exposé on the Russian doping system and how Russian sport executives, anti-doping labs, officials and athletes are involved in the doping process today.

English transcripts of the documentary paint a vivid picture.

It has been nearly 40 years since the entire swimming world first saw the effects of a state-sponsored doping system at the 1976 Montreal Olympics. The results were devastating and are still with us today. The fact that we are in the early stages of witnessing a "second coming" is nothing more than repulsive and insulting to all institutions that govern the sport.

What have we learned decades after the East Germans (GDR) benefited from systematic doping? Obviously, nothing!

What stands out in my mind is that the International Olympic Committee (IOC) and the *Fédération Internationale de Natation* (FINA) have never actively addressed the fact that the GDR used drugs despite overwhelming evidence, admissions and athlete restitutions from modern-day Germany.

The IOC and FINA cannot demand respect of the rules today unless they first demonstrate that they are willing to make judgment of the past. The IOC and FINA continue to refuse to right the wrongs from 1976.

They refuse to admit that the system was flawed back then and that it is flawed today.

What is to stop a country such as Russia

from violating the rules today when the IOC and FINA fail to act on the realities of the past? Evidently, nothing!

As you read through the January issue of *Swimming World Magazine*, think about the reality of the past. As you read the emerging news about Russia's modern-day systematic doping, think about the reality of the present.

Your first impression might be hopelessness for our sport. Your emotion might be anger and frustration. Your motivation should be to voice your opinion to FINA and the IOC that this cannot happen again:

- IOC contact info: pressoffice@olympic.org

- FINA contact info: press@fina.org

The only meaningful action that can be taken by the IOC is to right the wrong of 1976 and admit that the GDR women were victims of a state-sponsored doping system and that their competitors were also victims who were cheated out of Olympic medals. The second meaningful action would be for FINA to move the 2015 FINA World Championship away from Kazan, Russia and relocate it to another country.

Why should Russia be rewarded, and why should every nation compete on Russian soil after current revelations?

The first action is more symbolic; the second action is more demonstrative. Both actions send a signal that the sport will not tolerate doping of any kind within the sporting community.

In any case, enjoy learning more about one of the darkest periods in our sport by reading *Swimming World's* first issue of 2015. We must remember the past in order to learn how to deal with the future. ❖



Brent T. Rutemiller
Publisher of Swimming World Magazine



PUBLISHING, CIRCULATION AND ACCOUNTING OFFICE
 P.O. Box 20337, Sedona, AZ 86341
 Toll Free in USA & Canada: 800-511-3029
 Phone: 928-284-4005 • Fax: 928-284-2477
www.SwimmingWorldMagazine.com

Chairman of the Board, President - Richard Deal
RickD@SwimmingWorld.com

Publisher, CEO - Brent T. Rutemiller
BrentR@SwimmingWorld.com

Circulation/Art Director - Karen Deal
KarenD@SwimmingWorld.com

Circulation Manager - Maureen Rankin
MaureenR@SwimmingWorld.com

Advertising Production Coordinator - Betsy Houlihan
BetsyH@SwimmingWorld.com

EDITORIAL, PRODUCTION, MERCHANDISING, MARKETING AND ADVERTISING OFFICE
 2744 East Glenrosa Avenue, Phoenix, AZ 85016
 Toll Free: 800-352-7946
 Phone: 602-522-0778 • Fax: 602-522-0744
www.SwimmingWorldMagazine.com

EDITORIAL AND PRODUCTION
Editorial@SwimmingWorld.com

Senior Editor - Bob Ingram
BobI@SwimmingWorld.com

Managing Editor - Jason Marsteller
JasonM@SwimmingWorld.com

Graphic Designers - Emmi Brytowski, Joe Johnson

Staff Writers - Michael J. Stott

Fitness Trainer - J.R. Rosania

Chief Photographer - Peter H. Bick

SwimmingWorldMagazine.com WebMaster:
WebMaster@SwimmingWorld.com

MARKETING AND ADVERTISING
Advertising@SwimmingWorld.com

Marketing Coordinator - Tiffany Elias
TiffanyE@SwimmingWorld.com

MULTI-MEDIA

Writer/Producer - Jeff Comings
JeffC@SwimmingWorld.com

INTERNATIONAL CORRESPONDENTS

Africa: Chaker Belhadj (TUN)
 Australia: Wayne Goldsmith, Ian Hanson
 Europe: Norbert Agh (HUN), Camilo Cametti (ITA), Oene Rusticus (NED), Steven Selthoffer (GER), Rokur Jakupsstovu (FAR)
 Japan: Hideki Mochizuki
 Middle East: Baruch "Buky" Chass, Ph.D. (ISR)
 South Africa: Neville Smith (RSA)
 South America: Jorge Aguado (ARG), Alex Pussieldi (BRA)

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TURN TECHNIQUE

CHEST SLAP

After both hands simultaneously touch the wall, one arm is immediately brought back into the body with the elbow pressed against the ribs and the hand slapping the upper part of the chest, close to the shoulder.

HIP SNAP

Draw your knees up quickly toward your chest and the wall with toes pointed. Both chest slap and hip snap movements are performed simultaneously. This causes the shoulder of your recovering arm to drop in the water while your hips rotate to allow you to place just your toes horizontally on the wall. While your legs are brought under the body, the head and shoulders are brought straight back, looking up toward the ceiling or sky.

HAND RECOVERY CLOSE TO CAP

The hand that remained on the wall will recover close to the head as if you were saluting to the official standing over your lane. Continue to drop back until your feet are on the wall and your hands meet in a streamline position.



SWIMMING WORLD MAGAZINE

DON'T TURN BACK ON YOUR TECHNIQUE

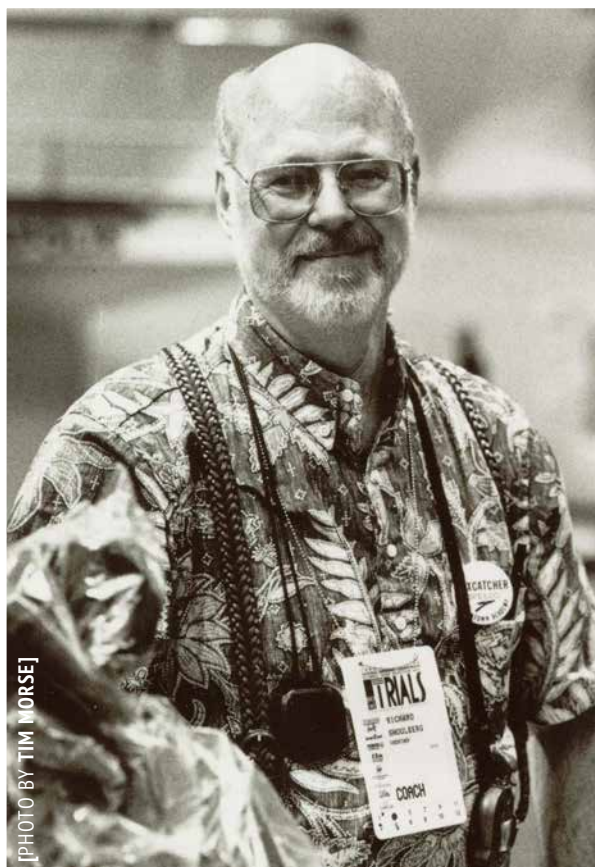
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LESSONS with the LEGENDS

BY MICHAEL J. STOTT

SWIMMING WORLD
CONTINUES A
SERIES IN WHICH
TOP COACHES SHARE
SECRETS OF
THEIR SUCCESS.

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[PHOTO BY TIM MORSE]

RICHARD SHOULBERG

PICTURED > In his 46 years at Germantown Academy and GA Aquatic Club, Richard Shoulberg has reaped untold honors. He is a two-time Olympic and four-time Pan Am Games coach, and has twice been named ASCA Coach of the Year. He has been the recipient of the USA Swimming Award, the organization's highest honor. He has won the ISHOF Paragon Award, is in the NISCA Hall of Fame and has been president and a board member of ASCA. Among other accolades, he has served as a committee member of Olympic International Development, Olympic International Operations, USS (United States Swimming) Steering and USS Rules. On deck, he has placed 12 athletes on the U.S. Olympic team, coached more than 150 All-Americans, countless national champions as well as winning eight women's and two men's *Swimming World Magazine* national prep school titles.

Richard Shoulberg is a master at coaching individuals to their potential. An unapologetic high-volume trainer, he runs his practices most often in Germantown's six-lane, 25-yard pool and orchestrates dryland training by using every one of his five biokinetic benches, four ERGs, nine VASA machines and nine spin bikes.

"Every day is hard work at Germantown," he says. But his attention to dryland detail produces strength gains and injury-free swimmers.

"I've always thought outside the box," he remarks.

Swimming lore readily recounts the epic for-time sets that he offered Sue Heon (15,000 meters free five-and-a-half weeks before the 1984 Olympic Trials), David Wharton and Ron Karnaug (16,000 IM) and Trina Radke (14,000 fly).

Why were the challenges offered? In Wharton's case: "because at the time, nobody else had done it." For the others: to build confidence.

CLOSE TO HIS ROOTS

All the laurels aside, Shoulberg has never strayed far from his roots. He has lived

within two-and-a-half miles of his birthplace, but has seen the world representing the United States as a coach in 17 international competitions. Early on, he discovered a knack for teaching youngsters to swim and be water-safe. He continues that teaching today, helping kids pre-K and up adopt an aquatic lifestyle. He also teaches lifesaving, CPR, First Aid and WSI.

"It upsets me that in the United States, the No. 2 cause of death for 14-and-unders is accidental drowning," he says. "So, I have never left my roots of teaching little kids how to swim. And for some, going off the diving board and swimming 25 yards will be their Olympic moment in the pool."

DEVELOPMENTAL COACHES

Shoulberg has a special admiration for developmental coaches.

"The best coaches in the U.S. coach 10-and-unders. The ones who become national-level coaches ride off the work of someone who inspired a youngster at 10, 11, 12 to really go after it. We need to play a greater role in congratulating our 10-and-under coaches because they are the ones who plant the seed.

"I will always be a grass-roots coach. There is nothing wrong with that and nothing wrong with teaching second grade. The greatest contribution to creating dreams for kids doesn't start with the college professor.

"I never got into this business to put a kid on an Olympic team. I got addicted to hearing kids laugh, and I love to challenge them. If I think you can do 10 by 100 on 58 seconds—and you finally do it—that really excites me! Until you do it, I'm going to work hard to convince you to do things you never have done. That's what keeps my motor running—interacting with kids."

And how would Shoulberg like to be remembered? "As someone who cared about every kid and every person in the program. I love people and being around them. It is a pretty simple philosophy." ❖

Michael J. Stott is an ASCA Level 5 coach whose Collegiate School (Richmond, Va.) teams have won seven state high school championships. In December, his girls team broke the school's previous record of 67 consecutive meets without a loss. As of press time (mid-December), the streak reached 72.

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NCAA Champion and 13 time NCAA All-American
US National Champion and American Record Holder
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Gold medalist at the FINA World Championships

HALEY ANDERSON

2012 Olympic Silver Medalist - Open Water 10K
2013 FINA Open Water World Championships Gold Medalist
2014 National Champion - Open Water 5K
2014 Pan Pacific Games Gold Medalist - Open Water 10K
2014 Golden Goggles Perseverance Award Recipient

ANDREW GEMMELL

2012 Olympian in 1500m FR
2013 Open Water National Champion - 5K
2014 Open Water National Champion - 10K
2014 Pan Pacific Games Gold Medalist in Open Water 10K
2014 Golden Goggles Perseverance Award Recipient

EMILY BRUNEMANN

NCAA Champion in the 1650 freestyle
Open Water Swimmer of the Year
US Open Water Champion in the 10K
Winner of the 2013 FINA 10K Marathon World Cup Series

1 MICHAEL PHELPS: THE GOOD, THE BAD AND THE UGLY

Michael Phelps finally returned to competitive swimming in April 2014 at the Arena Grand Prix in Mesa, Ariz., following a 20-month retirement. His comeback proved to be quite successful, as he won three gold medals at the Pan Pacific Championships in August. Unfortunately, the story didn't end there. On Sept. 30 in Baltimore, Phelps was arrested for DUI, excessive speeding (84 mph in a 45 mph zone) and crossing double lane lines after a gambling stint at a local casino. USA Swimming suspended him for six months and took away his monthly funding stipends during the suspension. Phelps underwent treatment at a six-week rehab program, and he also withdrew himself from Team USA's World Championships roster in 2015.



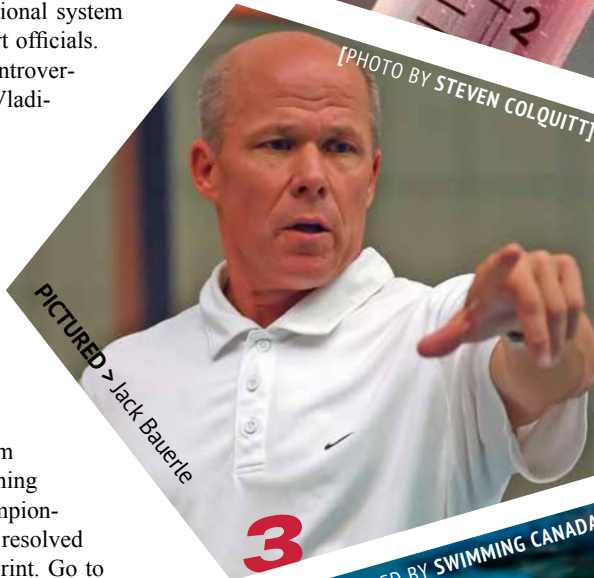
2 RUSSIA: DOPING SCANDAL

German broadcaster ARD aired a documentary, "Secret Doping Dossier: How Russia Produces Its Winners," in early December, reporting on the Russian doping system and how sport executives, anti-doping labs, officials and athletes are involved. It revealed that athletes made secret payoffs to remain undetected due to the cooperation of a large international system of sport executives, lab staff and sport officials. The scandal adds more fuel to the controversial awarding of the FINA Award to Vladimir Putin.



3 JACK BAUERLE: SUSPENSION STILL IN LIMBO

In April, the NCAA alleged that Coach Bauerle committed a Severe Breach of Conduct (Level 1) offense related to providing an extra benefit of an academic nature to a student. Georgia suspended Bauerle and banned him from coaching. He sat at home watching his women's team win a national championship. The case was scheduled to be resolved a day after this publication went to print. Go to SwimmingWorld.com to learn how the eight-month ordeal was resolved.



4 JARING TIMMERMAN: ONE FOR THE AGES

Canada's Jaring Timmerman became the first person to compete in the 105-109 Masters swimming age group at the Catherine Kerr Short Course Meters Pentathlon. He swam the 50 meter free in 2:52.48 and the 50 back in 3:09.55, with both times officially being recognized as Masters world records. In November, Timmerman passed away at the age of 105 as the oldest competitive swimmer ever.

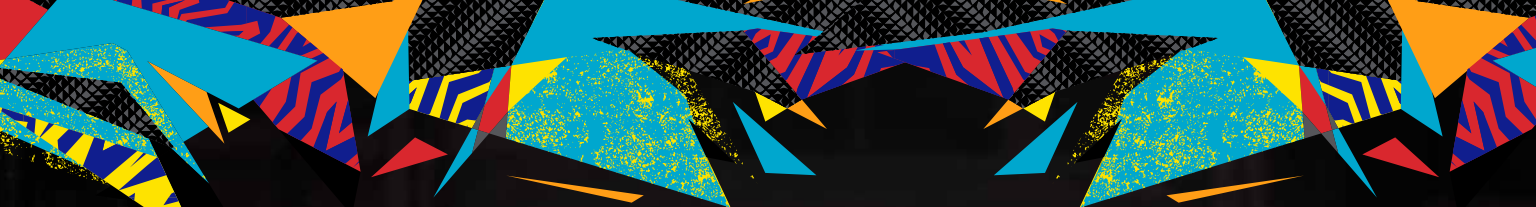


5 YULIYA EFIMOVA: RETROACTIVE BAN

After a lengthy legal battle, FINA decided in May to ban Russian breaststroker Yuliya Efimova for 16 months after she tested positive for DHEA (dehydroepiandrosterone, a performance-enhancing steroid hormone) during an out-of-competition test in Los Angeles. The retroactive ban went into effect Oct. 31, 2013, meaning that she also lost four European short course titles and four world records. FINA's decision was somewhat lenient—withholding a full two-year ban—as Efimova pleaded that she had taken similar supplements since she was a teenager and had never tested positive. ❖



TOP STORIES OF 2014



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MIND GAMES FOREVER



Personal and team traditions and rituals are just as much a part of the sport of swimming as the competition itself. Ranging from the ridiculous to the sublime, swimmers and teams do whatever it takes to perform their best.

BY MICHAEL J. STOTT

How often have we witnessed personal and team rituals as a prelude to competition? Think Michael Phelps and those flapping arms...or Virginia Tech storming into its natatorium to the strains of Metallica's "Enter Sandman," quickly followed by a swimmer sliding on deck and a diver parachuting from the 10-meter platform with the team flag.

Some rituals are just business as usual. Standard warm-up routines, water carried from a home pool, precision stretching (Cal men), cacophonous cheering (Holton-Arms girls in Bethesda, Md.) and pre-meet music are prime examples.

Warm-up music at New Trier un-

der Mark Onstott was country and "God Blessed Texas," not unlike the Johnny Cash tunes played during the Dave Robertson days.

National anthem? The Trevians march in clapping, line the deck and—like The Collegiate School in Richmond, Va.—sing it often, giving voice to a natatorium whose sound system failed.

Swimming? New Trier swims most of their dual meets in drag suits. "When I got there, I noticed the best teams did it, and we wanted to be the best," says Onstott.

CHAMPIONSHIP MEETS

At championship meets, traditions really come to the fore—themed T-shirts, caps and garb change. At Auburn, "it became standard that we were going to be the best-dressed team as we arrived at NAAs. Part of it was the Pygmalion Effect. If you dress people like champions, they tend to perform like champions," says David Marsh.

"That included whatever detail to make the experience first rate—from being picked

up at the airport (limos within compliance guidelines) to getting rooms. Coaches set up rooms in advance with waters, names on the doors and so on, making things really special." Seniors spoke before first-day meals to get "people a little more emotionally connected," adds Marsh.

In New Mexico, Albuquerque Academy swimmers have a first-day luncheon, walk to the library, hear from Coach Dave Barney and watch videos of great moments at past state meets. Before the meet, AA team members enjoy three humorous rituals. One tradition is the reading of a poem about rabbits and their procreating habits. Written by a former Barney student, the poem has been recited in English, Spanish, Italian, German, Russian and as a rap by captains and/or coaches.

And the memories remain. Meaghan Stern, a 2005 AA graduate, says, "I still puzzle over how a dramatic reading of a poem about rabbits 'frolicking' in the clover ever became an enduring pre-state meet team routine. We also never failed to gather

PICTURED > One of the more exciting college swimming traditions is the flag jump at Virginia Tech before the start of its home swim meets, where a diver parachutes from the 10-meter platform with the team flag.



[PHOTO PROVIDED BY VIRGINIA TECH ATHLETICS]

both boys and girls teams around a large mixing bowl filled with water and floating rubber ducks to scream for a minute before the first day of the state meet. No idea why we did that,” she says.

And there is more: “One year after a particularly energetic taper practice, Justine Schluntz (Rhodes Scholar, NCAA Woman of the Year at Arizona), Celeste Bower and I gathered our (AA) teammates into one shower stall,” says Stern. “All 20-plus of us smushed in tightly and laughed, yelled and cheered all at once.

“One year later, my sister, Kendra (who also went to prep school at Albuquerque and later became a 10-time NCAA Division III national champion at Amherst), called to tell me that they had squeezed even more people into a shower stall.” The “Shower Stuff” continues as an annual rite.

As does a season-ending custom where captains bestow paper-plate awards aimed at swimmer foibles. One year, swimmer Will Lokke won a “stop talking about my sister in the locker room award.” Meaghan

Stern “loved writing the paper-plate awards as a way to celebrate and laugh. I have most of mine,” she says.

“Most of this may sound silly, but I’ve found that easing the mood tends to relax the swimmers,” says Barney.

THE TEAM SHAVE

At Albuquerque, swimmers are on their own. At Woodberry Forest in Virginia, it is done together. Afterward, the team attends an all-school dinner, sporting their new haircuts. At New Trier, team members don’t wear caps, and shaving is optional. “We called it the Ultimate Sacrifice and/or Skin to Win,” says Onstott. “Shaving your head puts a little more skin in the game and was one of those things that separated us from the other guys,” he says.

“Shaving for the big meet was a big deal and a serious ritual,” says former Auburn All-American Dean Hutchinson. “I kept my room hot and took my time like my life depended on this shave. It was spiritual, exciting and the culmination of a lot of hard work. There was an order and meaning to *everything* we did the night before—all orchestrated and all important,” he says.

WAKE-UP SWIMS

“Funny how we hated them when we were not good and thought they were punishment,” says Hutchinson. “As we became better athletes, we saw their value and counted on them. We loved wake-up swims that were Auburn only. We were always early. I don’t remember many days where we were doing it with other teams. One time at Olympic Trials, David (Marsh) arranged for a few of us to swim in some small local pool. The building had the locker room where *Hoosiers* was filmed. Kind of cool.”

At the Virginia Independent School state meet, Coach Jay Leach of Norfolk Academy always requests the earliest possible session to get his Bulldogs up and focused for the business at hand.

FIRST IMPRESSIONS

“The teams that walked in together to begin a competition seemed to be the ones that performed the best through the entire meet,” says Marsh. “I recall Skip Kenney taking the 1996 Olympic team into the aquatic center in Atlanta at sunset, where we got the full effect of the excitement about how grand and unique the facility was. Being together can add to the confidence in a brotherhood kind of way,” he says.

Athlete rubdowns are *de rigueur* at college and championship meets; in high school, not so much. Though state meet

venues now at both New Trier and Evanston have specific gyms set up for rubdown tables, that was not always the case. New to Onstott was the starting block rubdown performed by Hinsdale Central coach, Corky King, prompting host Onstott to ask meet officials to intervene. “I didn’t think that anyone should be allowed to come up and spray the blocks with who knows what,” he says. (King used water.)

PERSONAL RITUALS

Personal rituals can range from the ridiculous to the sublime. Early on, Amanda Beard took her teddy bear to the blocks. Later on, Dara Torres took her daughter to the podium. For Meaghan Stern, race prep was a series of stretches, shakes, circles and an obsessive goggle check as a result of an early career goggle mishap.

Sister, Kendra, would not sleep well the night before big meets. “A couple of times, I barely slept at all,” she says. “Many of my pre-race rituals were focused on managing my nerves and calming/centering myself so that I didn’t waste any adrenaline. I would always get behind the blocks with my goggles already on...but whether it was to intimidate my competitors or to hide the fact that I was anxious and panicked out of my mind, I’ll never tell!”

READY ROOM

While Hutchinson and Bill Pilczuk preferred the seclusion of the outdoors for pre-race visualization, they invariably found themselves in the ready room.

“For me,” says Hutchinson, “it was head phones on, stare at people and don’t talk. Some guys kept it light. Bill Pilczuk and I didn’t. It’s funny. I think of Amy Van Dyken. She was like us. All business. No friendly faces in a ready room. Now I would consider all those guys friends.

“Gary Hall was definitely someone I wouldn’t want to talk to at all. He was the competition. I spent a lot of time training, thinking about beating him. Not many people did. Jon Olsen, Gary Hall, Pilczuk and I were in ready rooms together a lot. I hated them in that room. Now I miss them.

“Thank God for Facebook! They are friends. Ready rooms are great memories. Gamesmanship. We *all* loved it.” ❖

Michael J. Stott is an ASCA Level 5 coach whose Collegiate School (Richmond, Va.) teams have won seven state high school championships. In December, his girls team broke the school’s previous record of 67 consecutive meets without a loss. As of press time, the streak reached 72.

Many people believe that the technique of the fastest swimmers is worth copying, resulting in numerous misconceptions. In reality, even the fastest swimmers have technique limitations, but they offset them with strength and conditioning. The purpose of this series of articles is to address scientifically the technique misconceptions that have become “conventional wisdom,” and to present more effective options.

BY ROD HAVRILUK

SWIMMING TECHNIQUE MISONCEPTION

A common swimming technique misconception is that a straight-arm pull produces the fastest freestyle. A related misconception is that different pulls are more effective for different racing courses: a straight-arm pull for short course and a bent-arm pull for long course.

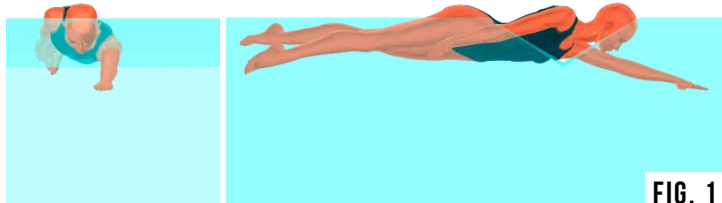


FIG. 1

FIG. 1 > (ABOVE) This swimmer has just completed the arm entry and is in an effective position to begin the pull.

FIG. 2 > (BELOW) In the top frames, the swimmer keeps her elbow straight as she begins the pull. In the bottom frames, she flexes her elbow. The force vectors show that elbow flexion positions the hand to direct about 50 percent more force horizontally.

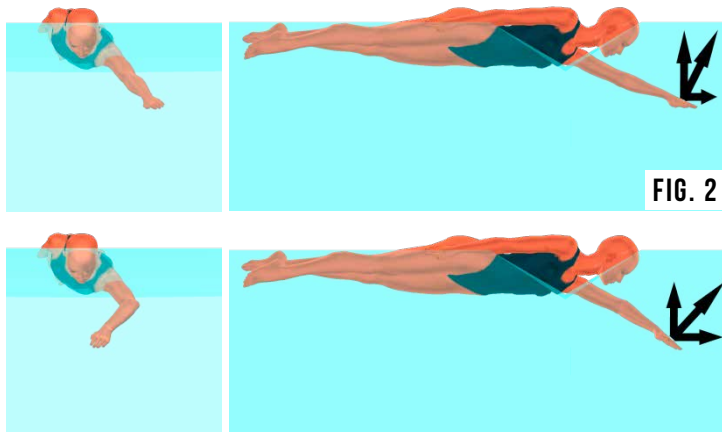


FIG. 2

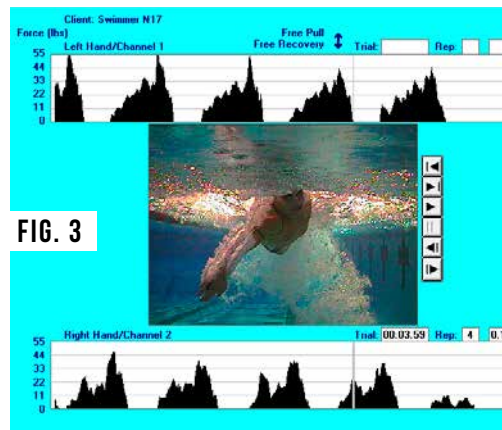


FIG. 3

Before addressing the “straight-arm” concept, it’s important first to clarify the definition of the “pull.” The pull is often considered to be the entire underwater arm motion. Technically, however, the pull is the arm motion from completion of the entry to when the arm passes beneath the shoulders. The remainder of the backward arm motion is the push phase.

A STRAIGHT-ARM PULL IS SIMPLE

In almost all cases, the arm is straight when a swimmer completes the arm entry (see Fig. 1). Unfortunately, many believe that beginning the pull with a straight arm is beneficial. A swimmer may also have the perception that a straight arm can be cycled at a faster stroke rate. In reality, major limitations of a straight-arm pull are readily apparent when reviewing the related mechanical principles and research findings.

LIMITATIONS ON THE PULL PHASE

A straight-arm pull ineffectively positions the hand to generate propulsion at the beginning of the pull phase. In Fig. 2, the hand-force components are shown for a straight arm (top frames) and a bent arm (bottom frames). In both positions, all other body segment orientations and joint angles are the same.

In this example, the same magnitude of force is applied perpendicular to the hand for both methods. The force vectors (arrows) show that for the straight-arm pull, most of the hand force is directed vertically (i.e., non-propulsively). The vectors also show that for the bent-arm pull, the horizontal hand force component (i.e., propulsion) is about 50 percent greater.

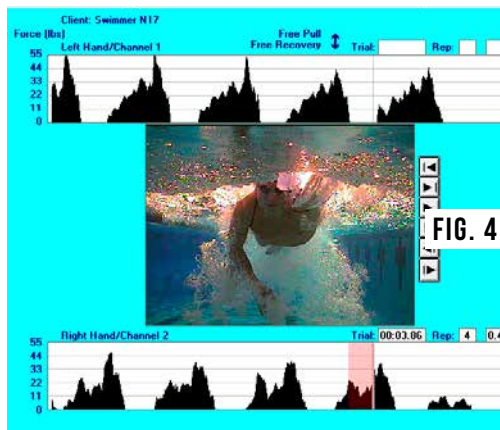


FIG. 3 > (PREVIOUS PAGE, TOP) This swimmer has a very straight arm throughout most of the pull phase. The vertical gray line on the right hand force curve shows that he has increased his hand force to this point (at .19 sec).

FIG. 4 > (LEFT) The shaded red area on the right-hand force curve shows the loss in force as the swimmer's arm changes from straight on the pull to bent on the push.

FIG. 5 > (BELOW) This swimmer has a 90-degree elbow angle as she begins her push phase (left image). She then maintains her arm in an effective position for the push.

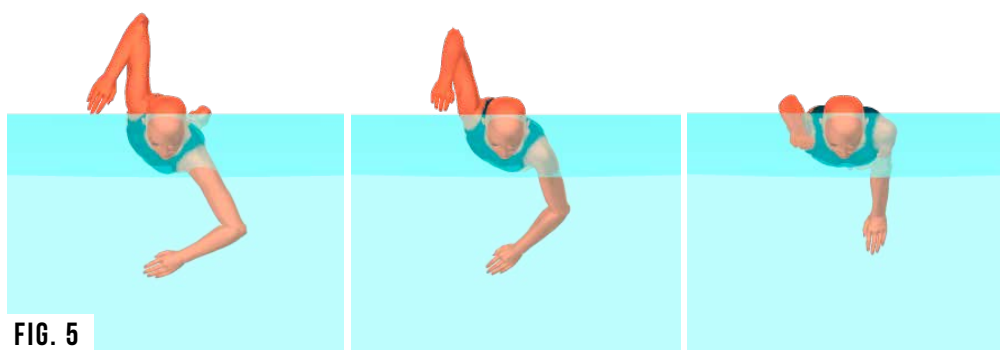


FIG. 5

LIMITATIONS ON THE PUSH PHASE

In addition to the limitation on the pull phase, swimmers using a straight-arm pull are also limited by an ineffective arm position to begin the push phase. The swimmer in **Fig. 3** is completing his pull with a very straight arm. He increased his hand force by improving the leverage at the shoulder.

However, completion of the pull phase with a straight arm compromises the effectiveness of the push phase. Once the arm passes under the shoulders to begin the push, the swimmer has two choices, neither of which is effective: a swimmer can either maintain a straight arm or bend the elbow.

Fig. 4 shows the same swimmer flexing his elbow for the push. The rapid elbow flexion results in a hand path that is more sideways than backward. He suffers a considerable loss in force because of the rapid change in arm orientation. He is not able to increase the force until his arm has regained an effective position at almost a half-second into the stroke.

A far less popular option is to maintain a straight arm on the push phase. Similar to the concept presented for the pull phase, a much smaller component of hand force would be directed horizontally (propulsively). With a straight-arm pull, both options for the push (straight or bent arm) limit performance.

ELBOW FLEXION IMPROVES PULL AND PREPARES FOR PUSH

Research shows that flexing the elbow at the beginning of the pull is critical for increasing hand force. For example, a study on female college butterflyers found an immediate and significant increase in

hand force with elbow flexion (Becker & Havriluk, 2010). The same concept applies to freestyle: Rushall (1995) recommends that swimmers “bend the arm immediately.”

In addition, if the elbow is flexed during the pull phase, the arm will be in an effective position for the push phase. If the elbow is flexed to 90 degrees as the arm completes the pull, it is much easier to maintain the hand in a position to generate maximum propulsion during the push (see **Fig. 5**). Optimal direction of hand force also requires continual adjustment of the wrist angle on the push.

LONG COURSE VS. SHORT COURSE TECHNIQUE

It is understandable that for a short course race, a swimmer would opt for a simpler technique to ensure maximum stroke rate. While more complicated,

elbow flexion actually puts the arm in a stronger position so it can move faster. Bending the elbow, therefore, is a more effective technique for either racing course.

Utilizing a bent-elbow method at a maximum stroke rate requires split-second timing. Many thousands of stroke repetitions must be performed at increasingly faster stroke rates to benefit from flexing the elbow at top racing speed. ❖

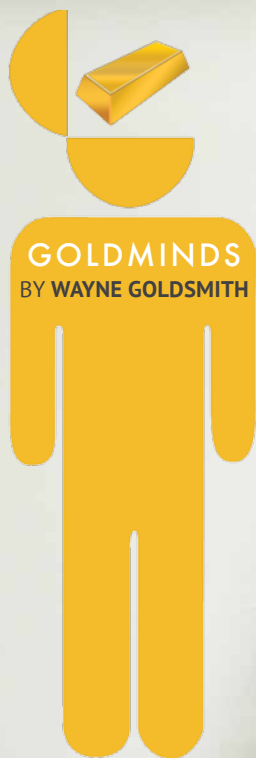
Dr. Rod Havriluk is a sports scientist and consultant who specializes in swimming technique instruction and analysis. His unique strategies provide rapid improvement while avoiding injury. He can be reached at the website for Swimming Technology Research (Tallahassee, Fla.): www.SwimmingTechnology.com.



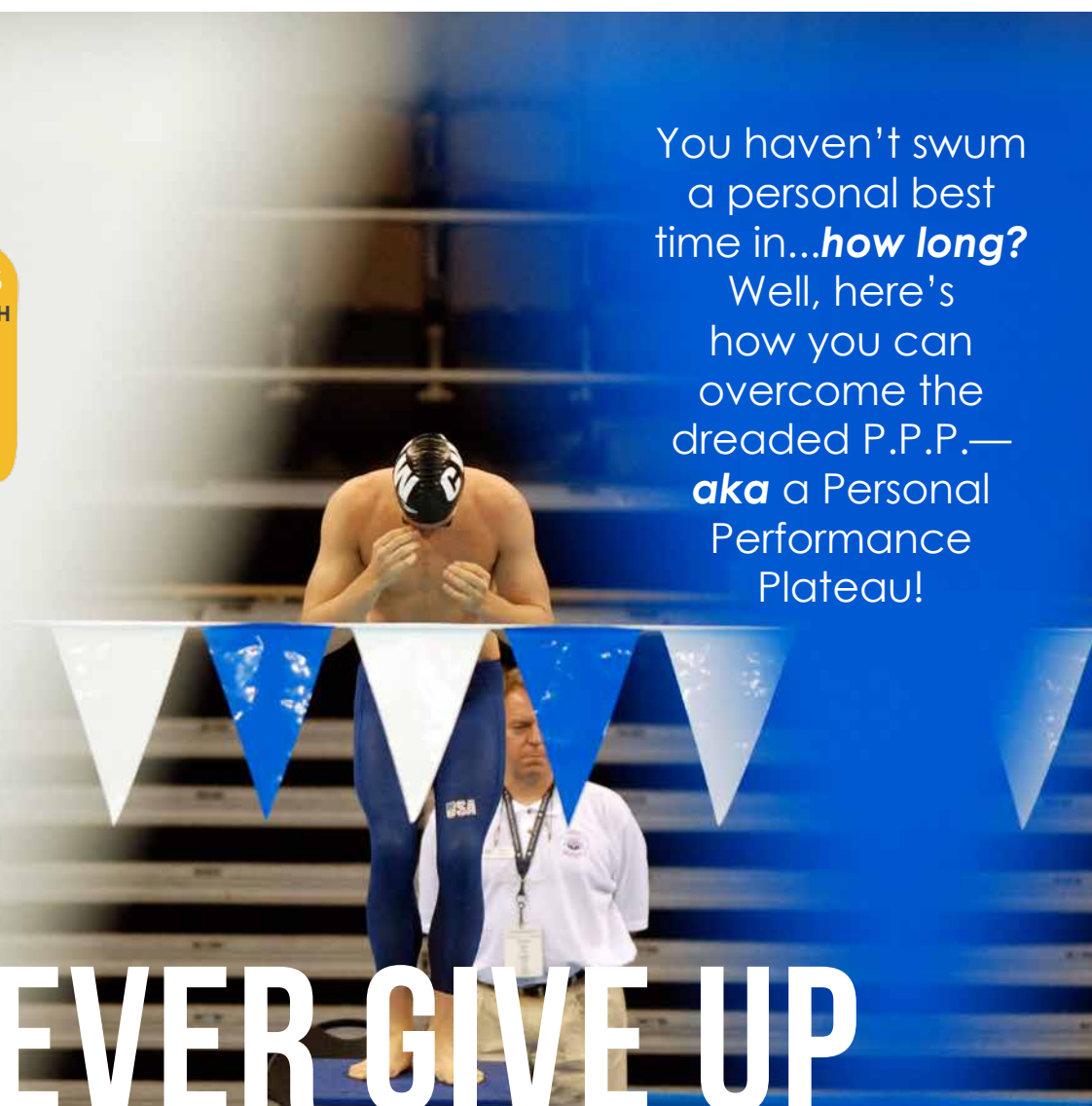
SUMMARY

A straight-arm freestyle pull is simple and, consequently, is often thought to help achieve a faster stroke rate. In reality, elbow flexion immediately positions the arm to move faster and to generate force better in the horizontal (propulsive) direction.

A straight-arm pull also ineffectively positions the arm for the push phase. Flexing the elbow to 90 degrees during the pull effectively positions the arm for the push phase. A bent-elbow method is superior for generating force on both the pull and push phases. Since force is directly related to swimming speed, a bent elbow produces faster swimming. ❖



You haven't swum a personal best time in...**how long?** Well, here's how you can overcome the dreaded P.P.P.—**aka** a Personal Performance Plateau!



NEVER GIVE UP

If you haven't swum a personal record (PR) in a long time, first of all...DON'T PANIC! You're not alone.

It's very common for swimmers to go weeks, months, seasons or—believe it or not—even years without doing a PR.

The important thing to remember is this: *the only swimmers who never do a PR are those who give up trying.*

So, relax, take a deep breath...and let's work through how we can get you back on track and racing even better than your best.

THE S.T.O.P. PROCESS

The first step in breaking your P.P.P. is to change...*something...anything.* Well, no—not just *anything.*

There's no doubt that you'll need to change something to find your next PR, but it's important you work through a process of changing the *right things...the right way...and in the right order!*

The best way to find that all-elusive PR is to use the S.T.O.P. process, which stands for:

- Skills
- Technique
- Outside the Pool
- Physical Preparation

Skills: The first things to look at changing when you've hit the P.P.P. are your race skills: dives, starts, turns and finishes.

Since the majority of swimming races are sprint events, your swimming times are influenced considerably by how well you work your "walls."

In sprint swimming, for example, often it's the swimmer with superior starting skills (i.e., dive, water entry, streamline, underwater kicking and breakout stroke) who wins the race. Improving any one of these skills can make a big difference to your PR.

Technique: The second area to consid-

er is your swimming technique. After all, swimming is a technique-driven sport, and swimmers and coaches spend hours and hours each week working on drills to improve and fine-tune swimming technique.

Ask your coach to help you do a swimming technique checklist. For example, if you're determined to find a PR in your breaststroke, set up a simple checklist like the chart shown on the next page.

Swim a few laps of breaststroke at top speed and have your coach systematically evaluate each of the technical aspects of your breaststroke technique. You'll find the answers you seek in no time.

Outside the Pool: If you've determined that your PR problems are not due to the need for change and improvement in your swimming skills or technique, then the next areas in which to look are outside the pool. These areas are also called the R.E.S.T. In order, they are:

- **Recovery.** Are you actively recovering, resting and regenerating physically and mentally between training sessions?
- **Eating.** Is your diet healthy and nutritious, and based on simple, high-quality foods that are low in saturated fat, low in sodium salt and low in processed sugar?

are only the right way to go if your P.P.P. is *physical* in origin (i.e., if the problem is about endurance, speed, power or strength).

For example, if your PR for butterfly hasn't improved for months because your fly technique is terrible, then simply swimming more butterfly isn't going to solve the problem.

For example, if you believe that the thing holding you back from doing a PR in your backstroke is your starting technique, then apply the ONE-ONE-ONE rule:

- Week 1: Change your push-off.
- Week 2: Change your underwater streamline and kicking technique.
- Week 3: Change your "breakout" stroke skill.

MY BREASTSTROKE SWIMMING TECHNIQUE CHECKLIST

Technique Area	Good	OK	Needs Work (Detail)	Stroke Correction Drills
HEAD				
HANDS				
HIPS				
HEELS				
TIMING				

- **Sleep.** Are you getting a minimum of 10 hours of quality sleep every night?
- **Time Management.** Is your time management all it could be so that you're not stressing over school-work, meeting your commitments and scheduling your other activities so that you can find time just to relax and have time to yourself?

These non-pool areas are just as important as pool areas when considering the potential reasons for your lack of improvement with your PRs.

Physical Preparation: Without a doubt, when swimmers are stuck on their P.P.P. for a while, the first thing they think about changing is the training load: their physical preparation.

The most common responses of coaches and swimmers when dealing with "plateaus" are to:

- Work harder (increased training intensity)
- Work more often (increased training volume)
- Work harder more often (increased training intensity *and* increased training volume)

However, simply adding more training sessions is not the answer. It might be part of the answer, but just adding another session every time you hit a plateau is a dead end.

As a great coaching mind once said, "It doesn't do any good to find brilliant solutions to the wrong problems."

The "work-harder-work-more-often-and-work-harder-more-often" solutions

Or if you're missing the start and being left on the blocks in freestyle, just adding more training sessions is not necessarily the answer.

Or if you're so nervous, stressed and anxious at a meet that you can't focus, relax or concentrate on swimming, then adding a session or two each week will not improve things—and, quite often, they may even make things worse.

If the reason you're not breaking your PR is because your swimming skills and technique need improving, then swimming more laps—or swimming the laps you're doing even harder—will only result in your skills and technique problems becoming even bigger problems.

Sooner or later, you can't get the improvements you want just by doing more laps, so *don't count the laps...make every lap count.*

THE ONE-ONE-ONE RULE

The temptation, of course, is to change *everything* and hope for the best (i.e., change your skills, your techniques, the other areas of your swimming and your physical training—and in doing so, wishing that *something* just might work).

Doing things this way means you're relying on hope, wishes and just plain luck—and none of them are smart strategies for swimming success.

There's a good way to go about changing your program and implementing the S.T.O.P. process in your training: it's called the ONE-ONE-ONE rule.

Change **ONE THING...in ONE WAY...for ONE WEEK**—and see what happens.

- Week 4: Change your approach to your first three strokes.

The ONE-ONE-ONE rule is a systematic way of introducing change intelligently, methodically and effectively. ❖

Wayne Goldsmith is one of the world's leading experts in elite-level swimming and high-performance sport. Be sure to check out his websites at www.wgaquatics.com and www.wgcoaching.com.

SUMMARY

1. It's very, very common for swimmers not to do a PR for an extended period of time. **DON'T PANIC.** There's always—*always*—a way to change things for the better.
2. It all starts with change. You have to change *something*. The definition of insanity is doing the same thing and expecting a different result. Don't just sit there...*change!*
3. If you've hit a flat spot and you're not getting the PRs you want, work through the S.T.O.P. process. Before you know it, you'll be swimming faster than ever.
4. And, of course, **NEVER, EVER, EVER GIVE UP!**

DOING THE RIGHT THING!

A year ago, *Swimming World Magazine* vacated its women's World and European Swimmer of the Year awards from nine East German swimmers from the 1970s and '80s. Now, the magazine proclaims the rightful winners.

BY JASON MARSTELLER

In its December 2013 issue, *Swimming World Magazine* announced its unprecedented decision to strip Kornelia Ender, Ulrike Tauber, Petra Schneider, Ute Geweniger and Kristin Otto of their World Swimmer of the Year awards. Those five swimmers—along with Barbara Krause, Cornelia Sirch, Silke Horner and Anke Mohring—had their European titles vacated as well.

In all, 11 world awards and 17 European titles were taken away from these GDR female swimmers, who were victims of rampant, systematized doping from 1973-89.

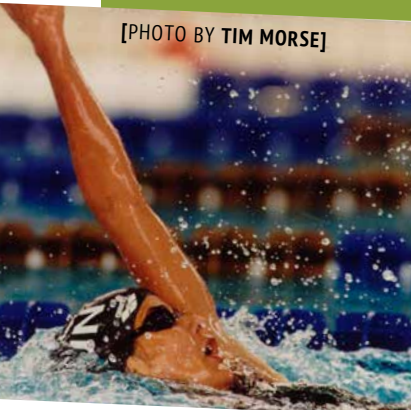
Although long overdue, *Swimming World's* panel of international swimming experts has voted and has selected who it believes to be the rightful winners. At the same time, the magazine continues to call on the IOC to make things right by awarding the appropriate Olympic medals (1976-88) to those who deserve them.

[PHOTO BY DAN HELMS]



PICTURED > (ABOVE) With Ute Geweniger (1983) and Kristin Otto (1984) being stripped of their World Swimmer of the Year awards, *Swimming World's* panel of international swimming experts voted U.S. distance star Tiffany Cohen as the two GDR swimmers' replacement.

[PHOTO BY TIM MORSE]



With the award reallocation, Shirley Babashoff (1974, '75, '76), Wendy Boglioli (1977), Novella Calligaris (1973) and Tiffany Cohen (1983, '84) are now officially World Swimmers of the Year. Meanwhile, Tracy Caulkins (1980, '82 in addition to the title she already won in 1978), Mary T. Meagher (1986 in addition to 1981, '85) and Janet Evans (1988 in addition to 1987, '89, '90) added more titles to their resumé's.

With her fourth award, Evans owns the most World Swimmer titles. Previously, she shared that distinction with Debbie Meyer, who is now tied for second with Babashoff, Caulkins and Meagher at three.

The European awards had some significant changes, highlighted by Hungary's Kristina Egerszegi being honored two more times (1988-89) for a record six continental titles. Tania Bogomilova (1985-86) became the first European SOY from Bulgaria, while Carmen Bunaciu (1981) and Noemi Lung (1987) were the first award winners from Romania. ❖

NEW WORLD, EUROPEAN SWIMMERS OF THE YEAR: THE TOP 3

WORLD

EUROPE

1973

1. Novella Calligaris, Italy
2. Melissa Belote, USA
3. Lynn Colella, USA

1. Novella Calligaris, Italy
2. Enith Brigitha, Netherlands
3. Liubov Rusanova, Russia

1974

1. Shirley Babashoff, USA
2. Enith Brigitha, Netherlands
3. Jenny Turrall, Australia

1. Enith Brigitha, Netherlands
2. Agnes Kaczander, Hungary
3. Christel Justen, Germany

1975

1. Shirley Babashoff, USA
2. Kathy Heddy, USA
3. Nancy Garapick, Canada

1. Wijda Mazereeuw, Netherlands
2. Enith Brigitha, Netherlands
3. Liubov Rusanova, Russia

1976

1. Shirley Babashoff, USA
2. Nancy Garapick, Canada
- 3T. Cheryl Gibson, Canada
- 3T. Enith Brigitha, Netherlands

1. Enith Brigitha, Netherlands
2. Marina Koshevaia, Russia
3. Liubov Rusanova, Russia

1977

1. Wendy Boglioli, USA
2. Alice Browne, USA
- 3T. Tracy Caulkins, USA
- 3T. Julia Bogdanova, Russia

1. Julia Bogdanova, Russia
- 2T. Enith Brigitha, Netherlands
- 2T. Annelies Maas, Netherlands

1978

—Not Vacated—

—Not Vacated—

WORLD

EUROPE

1979

—Not Vacated—

1. Lina Kachushite, Russia
2. Julia Bogdanova, Russia
3. Sharron Davies, Great Britain

1980

1. Tracy Caulkins, USA
2. Kim Linehan, USA
3. Mary T. Meagher, USA

1. Svetlana Varganova, Russia
2. Sharron Davies, Great Britain
3. Lina Kachushite, Russia

1981

—Not Vacated—

1. Carmen Bunaciu, Romania
2. Larisa Belokon, Russia
3. Larisa Gortschakova, Russia

1982

1. Tracy Caulkins, USA
2. Mary T. Meagher, USA
3. Annemarie Verstappen, Netherlands

1. Annemarie Verstappen, Netherlands
- 2T. Annelies Maas, Netherlands
- 2T. Svetlana Varganova, Russia

1983

1. Tiffany Cohen, USA
- 2T. Tracy Caulkins, USA
- 2T. Conny van Bentum, Netherlands

1. Conny van Bentum, Netherlands
2. Annemarie Verstappen, Netherlands
3. Petra Zindler, Germany

1984

1. Tiffany Cohen, USA
- 2T. Tracy Caulkins, USA
- 2T. Mary T. Meagher, USA

1. Larisa Belokon, Russia
2. Carmen Bunaciu, Romania
3. Elena Dendeberova, Russia

1985

—Not Vacated—

1. Tania Bogomilova, Bulgaria
2. Annemarie Verstappen, Netherlands
3. Carmen Bunaciu, Romania

1986

1. Mary T. Meagher, USA
2. Betsy Mitchell, USA
3. Tania Bogomilova, Bulgaria

1. Tania Bogomilova, Bulgaria
2. Tamara Costache, Romania
3. Sarah Hardcastle, Great Britain

1987

—Not Vacated—

1. Noemi Lung, Romania
2. Tamara Costache, Romania
3. Stela Pura, Romania

1988

1. Janet Evans, USA
2. Kristina Egerszegi, Hungary
3. Silvia Poll, Costa Rica

1. Kristina Egerszegi, Hungary
2. Elena Dendeberova, Russia
- 3T. Noemi Lung, Romania
- 3T. Tania Dangalakova, Bulgaria

1989

—Not Vacated—

1. Kristina Egerszegi, Hungary
2. Catherine Plewinski, France
3. Marianne Muis, Netherlands



[PHOTO BY LORRAINE RORKE]

PICTURED > (ABOVE)

With the award reallocation, American Shirley Babashoff, who had never been named World Swimmer of the Year, earned three honors—in 1974, 1975 and 1976. She replaces Ulrike Tauber (1974) and Kornelia Ender (1975-76), who were part of systemic doping in East Germany.

PICTURED > (BELOW)

The USA's Janet Evans, who was named *Swimming World's* Female World Swimmer of the Year in 1987, 1890 and 1990, added a record fourth title in 1988, when she won three Olympic gold medals in Seoul.

PICTURED > (PREVIOUS PAGE, BOTTOM)

Hungary's Kristina Egerszegi was honored as European Swimmer of the Year two more times (1988 and 1989), giving her a record six continental titles.



2014 ATHLETES OF THE YEAR:

DIVING, POLO, SYNCHRO, DISABLED SWIMMING

BY JASON MARSTELLER

LIU HUIXIA, *CHINA*

Female Diver of the Year

[PHOTO BY TIM WIMBORNE, REUTERS]



Liu won the overall FINA World Series on the women's platform during the six-meet circuit. She also took second on the platform at the FINA World Cup.

HE CHONG, *CHINA*

Male Diver of the Year

[PHOTO BY GUSTAU NACARINO]



He dominated the FINA World Series on the men's three-meter individual event, then won the same competition at the FINA World Cup.

ASHLEIGH JOHNSON, *USA*

Female Water Polo Player of the Year

[PHOTO BY TOM KIMMELL/USA WATER POLO]



Johnson was voted the best goalkeeper of the FINA World Cup, as the United States took down Australia, 10-6, in the championship.



[PHOTO PROVIDED BY SERBIAN WATER POLO]

STEFAN ZIVOJINOVIC, SERBIA

Male Water Polo Player of the Year

Zivojinovic, who led Serbia to victory against Hungary at the FINA World Cup, earned best goalkeeper honors.



[PHOTO BY ANDRE OLIVIER, FINA WORLD CUP]

SUN WENYAN, CHINA

Synchronized Swimmer of the Year

Sun captured four gold medals at the FINA Synchronized World Cup in Quebec City.

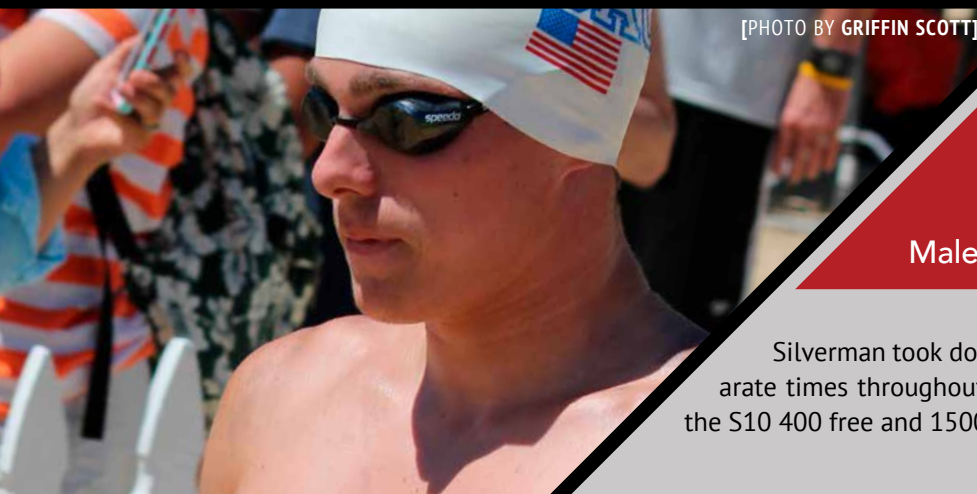


[PHOTO PROVIDED BY KRISTIN HOMB, WIKIMEDIA COMMONS]

INGRID THUNEM, NORWAY

Female Disabled Swimmer of the Year

Thunem set world records in two different disabled swimming classifications. After first setting six records in the S1/SB1/SM1 division prior to the IPC Swimming European Championships, she also managed to set two world records in the S2 division in Eindhoven.



[PHOTO BY GRIFFIN SCOTT]

IAN SILVERMAN, USA

Male Disabled Swimmer of the Year

Silverman took down a Paralympic world record three separate times throughout the year, finishing 2014 with marks in the S10 400 free and 1500 free as well as the SM10 400 IM.

2014 WORLD AND AMERICAN

COMPILED BY JASON MARSTELLER

Following is a list of the world and American records set this past season for long course, short course meters and short course yards.

The record progression begins with meets swum the first of the year for long course and Dec. 1, 2013 for short course yards and short course meters. The list was last updated Nov. 2, 2014. The initial time listed per event is the previous record.

WORLD RECORDS

LONG COURSE — WOMEN

400 METER FREESTYLE

3:59.15	Federica Pellegrini, ITA — Rome	7-26-09
3:58.86	Katie Ledecky, USA — Irvine	8-9-14
3:58.37	Katie Ledecky, USA — Gold Coast	8-23-14

800 METER FREESTYLE

8:13.86	Katie Ledecky, USA — Barcelona	8-3-13
8:11.00	Katie Ledecky, USA — Shenandoah	6-22-14

1500 METER FREESTYLE

15:36.53	Katie Ledecky, USA — Barcelona	7-30-13
15:34.23	Katie Ledecky, USA — Shenandoah	6-19-14
15:28.36	Katie Ledecky, USA — Gold Coast	8-24-14

50 METER BUTTERFLY

25.07	Therese Alshammar, SWE — Rome	7-31-09
24.43	Sarah Sjöström, SWE — Borås	7-5-14

400 METER FREESTYLE RELAY

3:31.72	The Netherlands — Rome	7-26-09
	(Inge Dekker, Ranomi Kromowidjojo, Femke Heemskerk, Marleen Veldhuis)	
3:30.98	Australia — Glasgow	7-24-14
	(Bronte Campbell, Melanie Schlanger, Emma McKeon, Cate Campbell)	

LONG COURSE — MEN

50 METER BREASTSTROKE

26.67	Cameron van der Burgh, RSA — London	7-29-09
26.62	Adam Peaty, GBR — Berlin	8-22-14

SHORT COURSE — WOMEN

* = FINA began recognizing the 200 meter medley and freestyle relays officially in late September 2013. The world records in these events are not the fastest legally swum performances. The initial time listed for the relays is the world best time.

1500 METER FREESTYLE

15:28.65	Lotte Friis, DEN — Birkerød	11-28-09
15:26.95	Mireia Belmonte Garcia, ESP — Castellón	11-29-13
15:22.68	Lauren Boyle, NZL — Wellington	8-9-14

100 METER INDIVIDUAL MEDLEY

57.45p	Katinka Hosszu, HUN — Berlin	8-11-13
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57.25p	Katinka Hosszu, HUN — Doha	8-28-14
56.86p	Katinka Hosszu, HUN — Dubai	9-1-14

200 METER INDIVIDUAL MEDLEY

2:03.20	Katinka Hosszu, HUN — Eindhoven	8-7-13
2:02.61	Katinka Hosszu, HUN — Doha	8-27-14
2:02.13	Katinka Hosszu, HUN — Dubai	8-31-14

400 METER INDIVIDUAL MEDLEY

4:20.85	Katinka Hosszu, HUN — Berlin	8-11-13
4:20.83	Katinka Hosszu, HUN — Doha	8-28-14

200 METER MEDLEY RELAY

1:42.69*	The Netherlands — Istanbul	12-12-09
	(Hinkelien Schreuder, Moniek Nijhuis, Inge Dekker, Ranomi Kromowidjojo)	
1:47.48p	Czech Republic — Herning	12-15-13
	(Simona Baumrtova, Petra Chocova, Lucie Svecena, Aneta Pechancova)	
1:45.92p	Denmark — Herning	12-15-13
	(Mie Nielsen, Rikke Moeller Pedersen, Jeanette Ottosen, Pernille Blume)	

1:33.65p	Italy — Herning	12-12-13
	(Nicolle Bonacchi, Francesco Di Lecce, Piero Codia, Luca Dotto)	

1:32.28	Russia — Herning	12-12-13
	(Vitaly Melnikov, Oleg Kostin, Nikita Kononov, Vlad Morozov)	

200 METER FREESTYLE RELAY

1:20.77*	France — Rijeka	12-14-08
	(Alain Bernard, Fabien Gilot, Amaury Leveaux, Fred Bousquet)	
1:25.89p	Italy — Herning	12-15-13
	(Marco Orsi, Luca Leonardi, Federico Bocchia, Federico Turrini)	
1:25.52p	Belgium — Herning	12-15-13
	(Francois Heersbrandt, Yoris Grandjean, Pieter Timmers, Jasper Aerents)	
1:23.36	Russia — Herning	12-15-13
	(Vlad Morozov, Sergey Fesikov, Evgeny Lagunov, Nikita Kononov)	



PICTURED > Katie Ledecky, USA

[PHOTO BY DELLY CARR]

200 METER FREESTYLE RELAY

1:33.25*	The Netherlands — Istanbul	12-12-09
	(Inge Dekker, Hinkelien Schreuder, Saskia de Jonge, Ranomi Kromowidjojo)	
1:37.21p	Sweden — Herning	12-12-13
	(Michelle Coleman, Sarah Sjöström, Louise Hansson, Magdalena Kuras)	
1:37.04	Denmark — Herning	12-12-13
	(Pernille Blume, Jeanette Ottosen, Kelly Rasmussen, Mie Nielsen)	

SHORT COURSE — MEN

200 METER BREASTSTROKE

2:00.67	Daniel Gyurta, HUN — Istanbul	12-13-09
2:00.48	Daniel Gyurta, HUN — Dubai	8-31-14

200 METER BUTTERFLY

1:49.04	Chad le Clos, RSA — Eindhoven	8-7-13
1:48.56	Chad le Clos, RSA — Singapore	11-5-13

200 METER MEDLEY RELAY

1:31.80*	Russia — Istanbul	12-9-09
	(Stanislav Donets, Sergey Geybel, Evgeny Korotyshekin, Sergey Fesikov)	

SHORT COURSE — MIXED

200 METER MEDLEY RELAY

1:38.74*	France — Chartres	11-23-12
	(Jeremy Stravius, Florent Manaudou, Melanie Henique, Anna Santamans)	
1:39.54	France — Doha	10-20-13
	(Jeremy Stravius, Giacomo Perez Dortona, Melanie Henique, Anna Santamans)	
1:39.08p	Australia — Singapore	11-5-13
	(Bobby Hurley, Christian Sprenger, Alicia Coutts, Cate Campbell)	
1:38.02	Australia — Singapore	11-5-13
	(Bobby Hurley, Christian Sprenger, Alicia Coutts, Cate Campbell)	
1:37.84	Australia — Tokyo	11-9-13
	(Bobby Hurley, Christian Sprenger, Alicia Coutts, Cate Campbell)	
1:37.63	Russia — Herning	12-13-13
	(Vitaly Melnikov, Yuliya Efimova, Svetlana Chimrova, Vlad Morozov)	
1:37.17	USA — Glasgow	12-21-13
	(Eugene Godsoe, Kevin Cordes,	

RECORD PROGRESSION

Claire Donahue, Simone Manuel)

200 METER FREESTYLE RELAY

1:29.31*	Australia – Eindhoven	8-8-13
	<i>(Matt Abood, James Magnussen, Brittany Elmslie, Emma McKeon)</i>	
1:31.14	France – Doha	10-21-13
	<i>(Florent Manaudou, Jeremy Stravius, Melanie Henique, Anna Santamans)</i>	
1:31.13p	Australia – Tokyo	11-10-13
	<i>(Tommaso D'Orsogna, Regan Leong, Bronte Campbell, Cate Campbell)</i>	
1:29.61	Australia – Tokyo	11-10-13
	<i>(Tommaso D'Orsogna, Travis Mahoney, Cate Campbell, Bronte Campbell)</i>	
1:29.53	Russia – Herning	12-14-13
	<i>(Sergey Fesikov, Vlad Morozov, Rozaliya Nasretidinova, Veronika Popova)</i>	

AMERICAN RECORDS

LONG COURSE — WOMEN

400 METER FREESTYLE

3:59.82	Katie Ledecky – Barcelona	7-28-13
3:58.86	Katie Ledecky – Irvine	8-9-14
3:58.37	Katie Ledecky – Gold Coast	8-23-14

800 METER FREESTYLE

8:13.86	Katie Ledecky – Barcelona	8-3-13
8:11.00	Katie Ledecky – Shenandoah	6-22-14

1500 METER FREESTYLE

15:36.53	Katie Ledecky – Barcelona	7-30-13
15:34.23	Katie Ledecky – Shenandoah	6-19-14
15:28.36	Katie Ledecky – Gold Coast	8-24-14

LONG COURSE — MEN

NONE

SHORT COURSE METERS

* = Not ratified. USA Swimming decided that American records set in techsuits after Oct. 1, 2009—when USAS implemented the techsuit ban domestically—would not be ratified. This is the case even for times swum legally in international events where the ban was not yet in effect. Listed below are the non-ratified (*) and ratified records.

SHORT COURSE METERS — WOMEN

NONE

SHORT COURSE METERS — MEN

800 METER FREESTYLE

7:33.94*	Chad La Tourette – Manchester	12-19-09
7:39.90	Michael Klueh – Atlanta	12-17-11
7:33.99	Michael McBroom – Glasgow	12-21-13

100 METER BREASTSTROKE

57.16*	Mike Alexandrov – Manchester	12-19-09
57.18sf	Mike Alexandrov – Dubai	12-15-10
56.88	Kevin Cordes – Glasgow	12-21-13

200 METER BREASTSTROKE

2:02.92	Ed Moses – Berlin	1-17-04
2:02.38	Kevin Cordes – Glasgow	12-20-13

200 METER BUTTERFLY

1:51.31	Tom Shields – Berlin	8-10-13
1:50.61	Tom Shields – Glasgow	12-21-13
1:50.08	Tom Shields – Doha	8-27-14

SHORT COURSE METERS — MIXED

FINA began recognizing the mixed 200 meter medley and freestyle relays officially in late September 2013. These American records are not necessarily the fastest legally swum performances in these events.

200 METER MEDLEY RELAY

1:49.87	Indiana – Bloomington	9-26-13
	<i>(James Wells, Cody Miller, Gia Dalesandro, Olivia Barker)</i>	
1:45.63p	USA – Tokyo	11-9-13
	<i>(Kaitlin Harty, Gunnar Bentz, Katie McLaughlin, Paul Powers)</i>	
1:44.55	USA – Beijing	11-13-13
	<i>(Hannah Weiss, Curtis Ogren, Kylie Stewart, Paul Powers)</i>	
1:37.17	USA – Glasgow	12-21-13
	<i>(Eugene Godsoe, Kevin Cordes, Claire Donahue, Simone Manuel)</i>	

200 METER FREESTYLE RELAY

1:41.16	Indiana – Bloomington	9-26-13
	<i>(Bailey Pressey, Stephanie Armstrong, Tanner Kurz, Cody Miller)</i>	
1:33.29	USA – Beijing	11-14-13
	<i>(Anthony Ervin, Paul Powers, Katie McLaughlin, Kylie Stewart)</i>	

SHORT COURSE YARDS — WOMEN

100 YARD FREESTYLE

46.84	Natalie Coughlin – Athens	12-4-11
46.83p	Simone Manuel – Clearwater	3-29-14
46.75r	Simone Manuel – Clearwater	3-29-14

200 YARD FREESTYLE

1:41.21	Megan Romano – Auburn	3-16-12
1:40.31	Missy Franklin – Minneapolis	3-21-14

500 YARD FREESTYLE

4:30.47	Katie Hoff – Baltimore	12-8-07
4:28.71	Katie Ledecky – Germantown	2-7-14

1650 YARD FREESTYLE

15:24.35	Katie Hoff – Annapolis	3-2-08
15:15.17	Katie Ledecky – Knoxville	12-7-13

100 YARD BREASTSTROKE

57.43	Breeja Larson – College Station	2-22-13
57.28	Breeja Larson – Athens	2-21-14
57.23	Breeja Larson – Minneapolis	3-21-14

200 YARD BREASTSTROKE

2:04.48p	Breejan Larson – Houston	11-17-12
2:04.34	Emma Reaney – Greensboro	2-22-14
2:04.06	Emma Reaney – Minneapolis	3-22-14

400 YARD MEDLEY RELAY

3:28.31	Arizona – College Station	3-19-09
	<i>(Ana Agy, Annie Chandler, Lara Jackson, Justin Schluntz)</i>	
3:27.51	Stanford – Minneapolis	3-20-14
	<i>(Maya DiRado, Katie Olsen, Felicia Lee, Lia Neal)</i>	

PICTURED > Kevin Cordes, USA



[PHOTO BY PETER H. BICK]

SHORT COURSE YARDS — MEN

100 YARD BACKSTROKE

44.55	Matt Grevers – Austin	11-30-12
44.07	Nick Thoman – Knoxville	12-06-13

100 YARD BREASTSTROKE

50.74	Kevin Cordes – Indianapolis	3-29-13
50.70	Kevin Cordes – Austin	12-6-13
50.55p	Kevin Cordes – Austin	3-28-14
50.04	Kevin Cordes – Austin	3-28-14

200 YARD BREASTSTROKE

1:48.68	Kevin Cordes – Indianapolis	3-30-13
1:48.66	Kevin Cordes – Austin	3-29-14

400 YARD INDIVIDUAL MEDLEY

3:35.98	Tyler Clary – College Station	3-27-09
3:34.50	Chase Kalisz – Austin	3-28-14

200 YARD MEDLEY RELAY

1:23.17	California – Indianapolis	3-29-13
	<i>(Tony Cox, Trevor Hoyt, Tom Shields, Seth Stubblefield)</i>	
1:23.02	SwimMAC – Knoxville	12-6-13
	<i>(Nick Thoman, Eric Knight, Tim Phillips, Cullen Jones)</i>	
1:22.83	California – Austin	3-28-14
	<i>(Ryan Murphy, Chuck Katis, Tony Cox, Tyler Messerschmidt)</i>	



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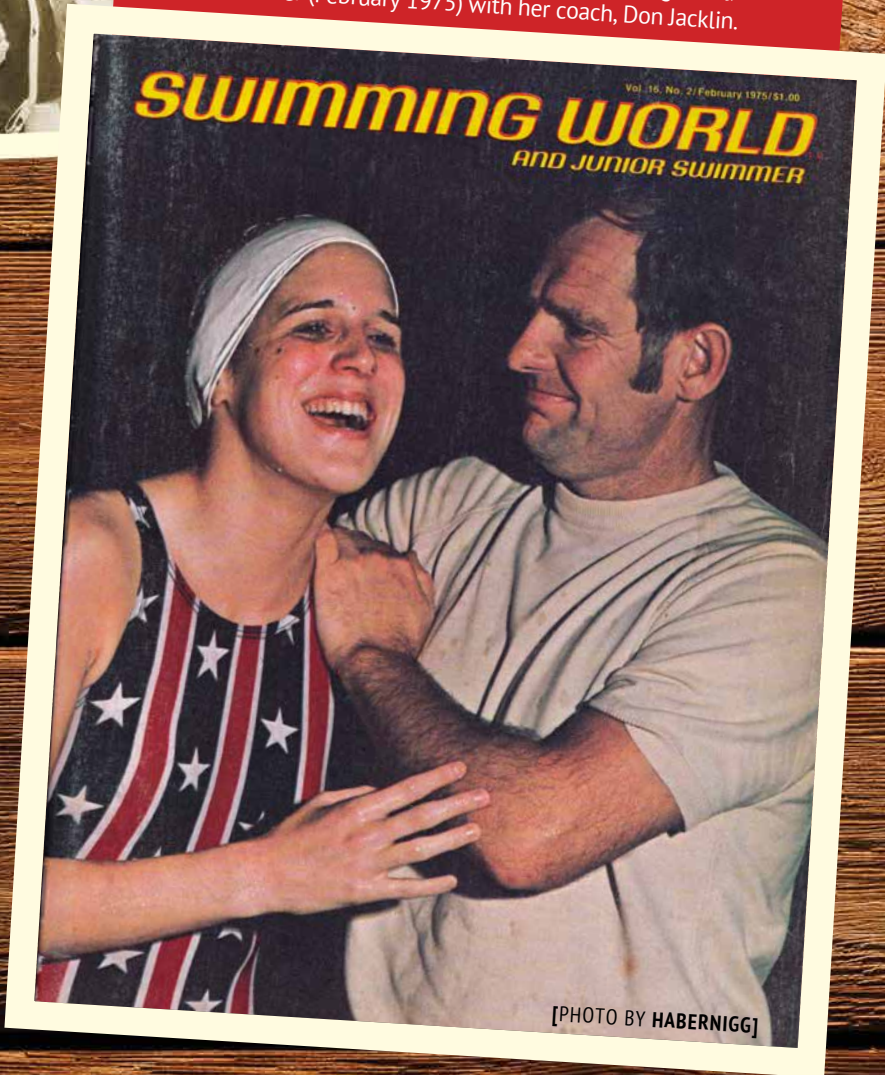
Beginning in its April issue and running through February 2015, *Swimming World Magazine* is counting down the top 10 triumphs and tragedies in the history of swimming. *This month:*



02 THE GREATEST TRIUMPH IN SWIMMING HISTORY

BY CHUCK WARNER

PICTURED > (BELOW) More than a year before Kim Peyton helped make history at the 1976 Montreal Olympics, the David Douglas Swim Club (Portland, Ore.) swimmer was on *Swimming World Magazine's* cover (February 1975) with her coach, Don Jacklin.



[PHOTO BY HABERNIGG]

Television broadcasters Curt Gowdy and Donna DeVarona set the stage for yet another disappointing defeat. There had been six days of it.

The women's swimming events at the 1976 Olympic Games began with a six-and-a-half-second whipping by the East Germans over the Americans in the 400 meter medley relay.

USA assistant Olympic coach Jim Montrella felt it deeply: "It was very tough. There were things happening that no one was sure about, no one wanted to talk about and no one wanted to admit to."

The performance by the women of the German Democratic Republic (GDR) in Montreal was arguably the most dominating by any women's squad in Olympic history. Their rise to the top of the sport had been shockingly abrupt. Not only had they won their first-ever Olympic swimming gold medal in Montreal, but they also had won all but one individual event. Beyond that, they finished first and second in the 100 and 200 freestyle as well as the 100 and 200 backstroke...and 1-2-3 in the 200 butterfly.

Nonetheless, the best all-around swimmer in the world might have been a 19-year old American named Shirley Babashoff. The blonde-haired wonder showed off her range by winning silver medals in the 200, 400 and 800 freestyles and the 400 medley relay, and finishing fifth in the 100 freestyle. She had forgone competing in the 400 individual medley, an event she had also won at the U.S. Trials.

During these Olympics, the USA team looked like minor leaguers compared to the Germans—and even to some other countries. There were three events in which they didn't even qualify a swimmer in the final eight. With a single event remaining—and Babashoff's performances aside—the USA had won only two individual medals, both bronze.

A DIFFERENCE IN SYSTEMS

Gowdy quizzed DeVarona: "I want to ask about the amazing East German women."

She responded by analyzing the differences from the USA team: "Our main problem is that our women are only developed in the club system...our women are just beginning to have college opportunities...the GDR system is a very professional system, and the state pays for that."

"What have you found about their training program?" asked Gowdy.

"They do high-altitude training in Bulgaria. They go to Leipzig four times a year, where all the coaches come to learn and share techniques.... All their resources are used. It's very difficult to compete with that."

The USA women were competing against the most organized system of developing swimmers any country had ever created. And in the 4 x 100 freestyle relay, the Americans had qualified third in the heats behind the Canadian team and the GDR. The simple addition of their best swims in Montreal indicated that the four GDR girls were about two seconds faster than the four Americans.

While the USA women struggled to get on the award podium, the men were enjoying their most prolific performance in Olympic history. They set 11 world records and took home 12 gold medals. If the American men were so good, how could the U.S. women be so insignificant? How could they only win five individual medals? Was it because they didn't have an NCAA program?

Colleagues were also suspicious of the quality of coaching that the USA women's team received from head coach Jack Nelson and his assistants, Montrella and Frank Elm. Their contemporaries steered clear of them as if they were trying to stroll gracefully by a skunk-sprayed spot in the woods.

The world didn't know a secret. The stink wasn't in the USA team.

PEYTON VS. ENDER

Leading off the 400 freestyle relay for the East German team was Kornelia Ender. At these Olympics, Ender had already become the first woman to capture four gold medals in a single Games. She had set three world records, including the 100 freestyle (55.65). Kim Peyton, who was America's fastest 100 swimmer with a best time of 56.81, led off for the Americans. After just 25 meters, Ender had powered out to nearly a body length's lead.

There had been whispers in Montreal about the consistent monotone, masculine, deep voices of the GDR women. In 1976, the concept of performance-enhancing drugs was in its infancy. But it was widely known that the entire country of East Germany was committed to demonstrating the advantages of a socialistic society through their success in sports. Ender and her teammates had long been treated by the state as missionaries toward that objective.

Ender turned first at 50 meters, while Oregon-native Peyton scrambled through the water, trying to keep up. Peyton followed her coaches' instructions and swam next to the lane line that separated the two, gaining the benefit of the leader's wake. She fought desperately to stay at Ender's knees and finished slightly off her best time with a 56.95, trailing Ender's 55.79.

BOGLIOLI VS. PRIEMER

On the second leg, the USA's Wendy Boglioli—a 21-year-old "elder" on the U.S. national team—swam with the same maturity with which she had conducted herself in recent years. She was the only American swimming in one of the few women's college programs at Monmouth in New Jersey. Her efficient, long strokes resembled those of top swimmers in the world today. The East Germans countered with the Olympic silver medalist in the 100 free, Petra Priemer, who maintained the lead.

Ender, Priemer and their teammates were subject to a covert conspiracy by administrators, coaches and doctors to add to their own athletic ability and resolve by contributing drug-fed power to their muscles. Unbeknownst to them, their training included the advantage of steroid use that decreased recovery time and increased muscle mass and training adaptations.



PICTURED > Wendy Boglioli swam the second leg of the relay against the Olympic silver medalist in the 100 free, Petra Priemer. The 21-year-old "elder" on the U.S. national team brought the Americans a little closer to the East German frontrunners, splitting 55.81—nearly two seconds faster than her Trials time!

— continued on 30

The American women's adaptations were left to their own coach's training design and programs for nutrition and sleep. While lacking the same medical support and talent selection system that the GDR enjoyed, they competed on the merits of their old-fashioned, heart-pumping, muscle-pulsating work that stretched and widened capillary beds and fought off screaming lactate build-up.

Boglioli improved nearly two seconds from her Trials time and outsplit Priemer, 55.81 to 56.16. With 200 meters swum, the Americans trailed by 81-hundredths of a second.

STERKEL VS. POLLACK

Jill Sterkel dove into the water one-half body length behind the GDR's Andrea Pollack. The 15-year old Californian had swum her best time (57.06) earlier in the competition when she finished seventh in the 100. On the first length, Sterkel swam with a high tempo, common to the many endurance-laden programs that permeated the era. She stayed close to Pollack.

On her second length, Sterkel turned on a thunderous kick that slowed her turnover rate and drove herself to pull even with Pollack. The crowd noise in the Olympic natatorium was building, with the possibility of witnessing a tale akin to that of David defeating Goliath.

...and then Sterkel passed Pollack. Natural outperformed drug-enhanced. The possibility of any girl or any boy in the world finding a way to win despite all manufactured impediments was unfolding on the grandest stage in sports.

At the completion of 300 meters, Jill Sterkel touched in a stunning 55.78—the fastest split of all of the finalists. The Americans had the lead—by 4-tenths of a second, 2:48.54 to 2:48.94—and broadcaster Donna DeVarona screamed, "They have a chance!"

BABASHOFF VS. HEMPEL

Standing on the starting block for the final American leg was Shirley Babashoff. Earlier that evening, the 5-9 Californian had battled the GDR's Petra Thumer stroke for stroke in the 800 freestyle. Both girls had broken Shirley's world record by two seconds, but it was Thumer who pulled away slightly on the last length to touch the wall 45-hundredths of a second faster than Babashoff for the victory.

The Olympic swimming events were conducted on seven days over an eight-day period, with a day off between the fifth and sixth days of competition. On that rest day, the U.S. coaches took the women's relay swimmers to an off-site warm-up pool to work on exchanges. Their extra effort was paying off with two excellent transitions, followed by a near-perfect one from Sterkel to Babashoff.

Babashoff sprung off the block just in front of Claudia Hempel, who earlier in the week had been outouched by the American in the 100 finals by a mere 4-hundredths of a second for fifth place. Yet this time, Hempel was fresh, while Babashoff had raced the 800 free earlier that evening.

A few days earlier, Shirley Babashoff had uttered aloud her instinct that something was awry with her competition. Consequently, reporters nicknamed her "Surly Shirley." Actually, this was one of the greatest athletes in the world expressing the possibility of betrayal by a systematic program of cheating that was destroying the most basic tenet of sport: spirited competition within a consistent set of rules.

In 1998, eight years after East and West Germany reunited to

become one democratic nation, Courtroom 700 of Berlin's state courthouse heard testimony regarding a "state" sports program that operated through the 1970s and 1980s. The effects of a program on thousands of athletes conducted by hundreds of coaches, doctors and administrators were exposed at the hearings. Several athletes testified that due to the drugs that had been represented to them as vitamins, they were rendered infertile, bore children with birth defects and/or had developed ovarian cysts. Even abortions had been performed in the name of demonstrating the power of what was once lauded as the East German "Miracle Machine."

Shirley Babashoff's instincts had been correct, but she had been virtually alone in her willingness to speak out and give voice to her suspicions.

At the final exchange, the American team held a miniscule edge that came from heart-pounding work designed to strengthen cardiac muscle. They showed a will that toughens with practice and permeates one's soul.

But the Germans were not about to give up.

PICTURED > (RIGHT, TOP) Jill Sterkel, the youngest swimmer on the USA relay at 15, started the third leg a half body length behind the GDR's Andrea Pollack. But with a stunning 55.78 split, Sterkel had put the Americans in the lead at the completion of 300 meters.

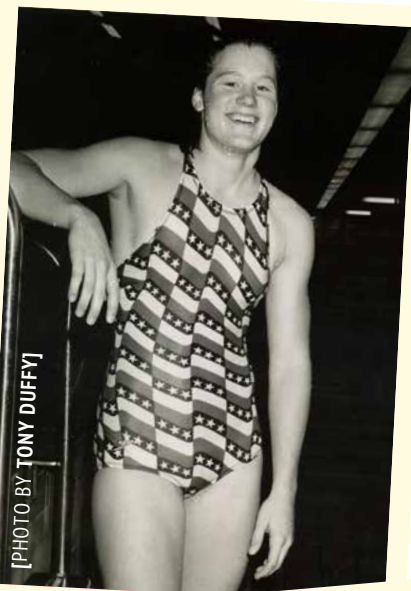
PICTURED > (RIGHT, BOTTOM) Shirley Babashoff anchored the winning American freestyle relay. She also won silver medals in the 200, 400 and 800 freestyles as well as the medley relay. However, in fair competition, Babashoff might well have left Montreal as America's "Golden Girl."

Babashoff had set three American records thus far at the Olympics, narrowly missing two gold medals while surpassing existing world records. But with 85 meters remaining in the race and Hempel charging next to her, one question remained:

Would Shirley let Claudia pass?

Babashoff was considered an elder in the USA at this point of her swimming career. She had graduated from high school, and Donna DeVarona was right—there was little in the way of collegiate opportunity for American girls at that time (the infancy of Title IX). Shirley had been to the '72 Olympics in Munich, where she had won a gold medal in the 400 freestyle relay. But history would attest that in fair competition, Shirley Babashoff might well have left Montreal as America's "Golden Girl."

Babashoff stroked madly, taking nearly 60 strokes per length, while Hempel powered through the water with greater efficiency.



[PHOTO BY TONY DUFFY]



[PHOTO BY TOR BENGSTON]

Shirley's muscles were tired from the effects of her 800 freestyle battle earlier that evening. With 40 meters remaining, Hempel raced at Shirley's shoulder. Babashoff's tempo increased even faster.

While her muscles were weak, her resolve was like steel. Shirley Babashoff extended her fingertips to the touch pad, stopping the clock 68-hundredths of a second sooner than Claudia Hempel. She split 56.28 to Hempel's 56.56, and the American team smashed the GDR's world record by four full seconds!

VICTORY FOR ALL

DeVarona shouted, "I've never been more excited to eat my words!"

Shirley, pumping her fist, shot out of the pool to embrace her teammates. The American girls hugged and leapt for joy, smiling and firing fists in the air. Friends and supporters in the stands as well as those who were watching on television cheered with joyous grins and flooding eyes.

The incredible triumph that the USA women had delivered still

serves us all today. They proved to all of us—even their abused East German sisters—that in the sport of swimming, human will and commitment can defeat drugs and systems.

On July 25, 1976—200 years after America's birth represented freedom in the world—Kim Peyton, Wendy Boglioli, Jill Sterkel and Shirley Babashoff (as well as coaches Nelson, Montrella and Elm) upheld the principle that having the freedom to prepare can bring victory—for all of us...*forever*.

And that is why we believe the USA's 1976 Olympic gold medal swim in the women's 400 freestyle relay is the greatest triumph in the history of swimming. ❖

Chuck Warner is a member of Swimming World Magazine's editorial board and author of "Four Champions: One Gold Medal" and "And Then They Won Gold." Both books are available for purchase online at www.SwimmingWorld.com. Next month: "Swimming's Top 10 Triumphs and Tragedies: #1."

REFLECTING ON HISTORY: An Interview with Jill Sterkel

BY JEFF COMMINGS

Jill Sterkel was just 15 years old when she swam on the USA women's 400 freestyle relay that won the gold medal at the 1976 Olympics. She says her age, perhaps, made her "naïve" about her surroundings, where whispers turned into full-on accusations of doping by the East German women.

Now 53 years old, Sterkel has changed her view toward the competitors who trounced the field in Montreal, using the word "sympathetic" on more than one occasion in a recent interview with *Swimming World*.

"Over the years, I've become way more sympathetic toward the East Germans (because) they were used and abused," she says. "Now, I can think it all the way through more rationally and see that this was a terrible disservice to them. The thing I struggled with over the years is people had to pick a side—that you were either sympathetic to the East Germans or knew that they cheated. I feel I can rationalize both sides of the equation."

Besides "seeing my whole high school at the airport" when she returned from the Olympics, life went on for the four American relay swimmers without much national recognition. Shirley Babashoff retired from swimming in January 1976. Wendy Boglioli became an assistant college swim coach. Kim Peyton battled an inoperable brain tumor that took her life in 1986.

As the youngest in the group, Sterkel still had many years left in competitive swimming. She became the first American swimmer to qualify for four straight Olympic squads, including the boycotted 1980

team. She was back on the 400 free relay at the 1984 Olympics—this time in the prelims—but still got a gold medal for her work. At the 1988 Olympics, she tied for bronze in the 50 freestyle with East Germany's Katrin Meissner.

Sterkel says it was tough racing the East Germans in 1976 and 1988. She was one of the hardest workers in the pool, but as she would find out later, she was racing women who had an unfair advantage that at times put nasty thoughts in her head.

"You sort of know the competition's not fair, but there's nothing you can do about it," she says. "You just suck it up and train hard enough and smart enough to beat them. As an athlete, that was the only way I could allow myself to think. You could say, 'I can't beat them because they're on drugs' or 'I'm going to use drugs so it's a fair game.' My head's not going to go in either of those two directions."

The history she has with doping in swimming has affected the way she views elite competition these days. An otherworldly performance often gets her thinking about the odds of it being assisted by performance-enhancing drugs.

"I love watching swimming, especially the relays," Sterkel says. "After 1988, there

was this hope that there would be some balance, and the Olympics would be cleaned up. But with all the stuff I'm hearing, I'm just fed up."

But she still loves the sport, as evidenced by 13 years as head women's

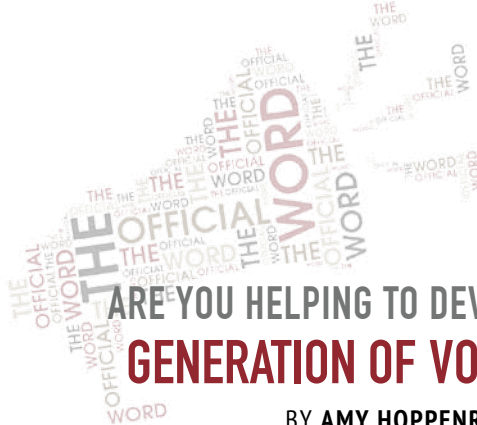


PICTURED > Jill Sterkel with son, Brandon

swimming coach at the University of Texas and her current work with the T-Association at her alma mater. There, she communicates with other alumni, dubbed "Texas Exes," and works to preserve the history of the sport.

Sterkel says her life would not have changed if the Americans had won silver, noting that the only difference would be the way she perceives her 1976 medal.

"I would have still celebrated it as a silver and recognized it as a gold," she says. "That's what I did in 1988. I got a bronze, but to me, it's a gold medal." ❖



ARE YOU HELPING TO DEVELOP THE NEXT GENERATION OF VOLUNTEERS?

BY AMY HOPPENRATH

Succession planning is just as important in swimming as it is in business—especially since many of the volunteer positions in USA Swimming require years of experience and preparation. Each and every one of us—whether we serve as a stroke-and-turn official or the LSC general chair—should start looking for and mentoring our successor today.

Developing the next generation is not only good for the sport—it is good for you! A very wise man once said that when you open a door for someone else, you also open a door for yourself to experience a new adventure.

Here are some tips to help you begin the process:

BECOME AN UNOFFICIAL MENTOR.

There are many who want to get more involved. They just need to have someone who believes in them and is willing to guide them through the process. A good way to start this is by identifying a great official and by planting seeds, such as, “Have you thought about becoming a starter? You are a great stroke-and-turn judge, and I think you have the intuition and patience to take the next step.”

ENCOURAGE OFFICIALS TO CERTIFY IN DIFFERENT POSITIONS.

This will provide first-hand experience to help them see how all of the pieces work together. For example, working as a chief judge helps them to become a better stroke-and-turn official.

CHALLENGE THEM.

We all like to learn new things. Stretch assignments are often growth opportunities. Help them minimize the risk by preparing them and putting experienced people around them.

SHARE YOUR RELATIONSHIPS...

...to help them do their job better. Introduce them to key coaches or officials that they can use as resources.

ALLOW THEM TO OPT OUT.

Not every volunteer has the desire or skills to be a good leader.

RESTOCK THE PIPELINE.

This is an ongoing process, and it’s important to keep the pipeline full. It’s easy when you see an immediate need, but it’s critical to be looking three to five years in the future. ❖

Amy Hoppenrath is an official from the Missouri Valley LSC.



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The Greatest Olympic Story **NEVER** Told

BY CASEY BARRETT

Here's a sneak peak at the making of "The Last Gold"—a documentary film about the women's 4 x 100 freestyle relay at the 1976 Montreal Olympics.

PICTURED > (INSET) The film is being directed by 15-time Emmy Award winner Brian Brown, long one of the central voices that helps shape NBC's broadcasts of the Olympic Games. Brown quickly assembled an all-star production team around him, and shooting began early in the summer of 2014.

[PHOTO BY ROB FORTUNATO]



[PHOTO BY ROB FORTUNATO]

In a well-appointed studio on the western edge of Manhattan's Union Square, the Good Wife is giving voice to "The Last Gold."

Juliana Margulies was everyone's first choice to narrate this documentary-in-the-works, and somehow, she has agreed. It's mid-November, and here she is, taking a break from her Emmy-winning lead on CBS' "The Good Wife," sharing the story of Shirley Babashoff and the doping darkness of East Germany...and one final women's relay at the 1976 Montreal Olympics.

You know the story of the "Miracle on Ice." Everyone does. When that over-matched crew of college boys somehow came together to defeat the Soviet hockey juggernaut in Lake Placid at the 1980 Olympics. It was a defining moment of the Cold War, and fueled by the epic call of Al Michaels (*Do you believe in miracles? Yes!*), it achieved instant all-time status as one of the greatest moments in the history of the Olympic Games.

That happened four years later. What if there was a moment every bit as miraculous, and infused with the same Cold War weight that happened an Olympiad earlier? What if it happened in the pool, and has

been almost lost to history—even by the swimming world?

Do you know the story of the USA women's 4 x 100 freestyle relay back at those Montreal Olympics? You can be forgiven if not; most don't. When this project was first floated to me, I needed a refresher on what exactly went down—and I like to congratulate myself on knowing my Olympic swimming history.

Here's what you do know: the 1976 women's swimming competition was corrupted and forever tainted by doping. The East German women arrived in Montreal as unnatural specimens, so artificially enhanced by steroids that they were mistaken for men when their deep baritone voices rumbled across the women's locker room in Montreal. The American women did not stand a chance. Not even 19-year-old superstar Shirley Babashoff—who entered those Montreal Games as a *Sports Illustrated* cover girl, qualifying in seven events, with the hype that she could be the female Mark Spitz—was capable of winning more gold at a single Games than any woman in history.

Babashoff was that good. She was the Katie Ledecky of her day. A monster talent so versatile that she was capable of sweeping every freestyle race, from the 100 to the

800, plus all the relays, and just for good measure, she also qualified in the 400 IM. Instead, Shirley Babashoff would go on to win a string of silver medals, each behind doped East German competitors. She was a headstrong California teen back then, and Babashoff was not shy about speaking up and pointing out the injustice. Her honesty was rewarded with ridicule and accusations of poor sportsmanship by the American media. It earned her a cruel label that stuck: Surly Shirley.

That's the part you might remember.

Here's what you might not know: the story of the last race.

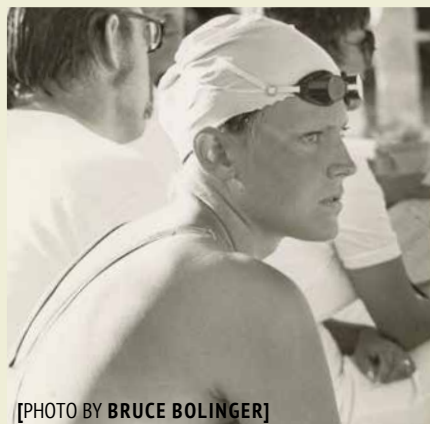
In Montreal, the final event of the swimming competition was the women's 4 x 100 freestyle relay. To that point, the East German women's team had won 11 of 12 events, including the women's 4 x 100 medley relay that they won by an astounding six-and-a-half seconds on the first night of competition. They weren't just winning. These East German women were annihilating the competition and crushing world records every time they touched water. Shirley Babashoff may have given them hard-fought battles and close finishes, but the rest of the world's women could not

— continued on 34

LAST GOLD – continued from 33

even come close. Until that final night, when another final gold for East Germany appeared to be a foregone conclusion, a final insult to a brutal week.

Yet an American team of Kim Peyton, Wendy Boglioli, Jill Sterkel and Shirley Babashoff—four pioneers of women’s sport in America—had one last race, one last chance to come together and beat the cheaters, and swim to impossible gold. And they did.



[PHOTO BY BRUCE BOLINGER]



[PHOTO BY MARGIE SHUER]

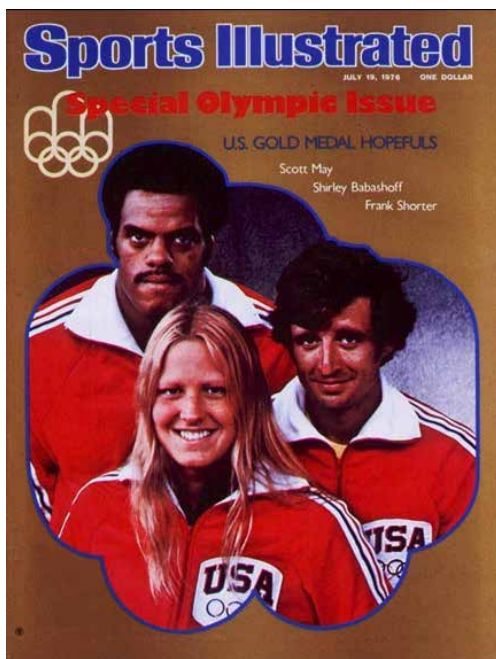
This is the story of “The Last Gold.”

It’s the stuff of movies, and soon it will be one.

Over the last 12 months, USA Swimming has committed to producing a documentary that explores this dark chapter in Olympic history—and the against-all-odds triumph that ended the meet in Montreal. I’ve been hired to write the film. It is being directed by 15-time Emmy Award winner Brian Brown, long one of the central voices that helps shape NBC’s broadcasts of the Olympic Games. Brown quickly assembled an all-star production team around him, and shooting began early in the summer of 2014.

The interviews and the stories assembled since are astonishing. Shirley Babashoff has spoken with grace and honesty, in a rare and lengthy interview that lays bare the betrayal of those times. Her relay teammates, Wendy Boglioli and Jill Sterkel, have delivered stunning recollections, as have John Naber, Mark Schubert and so many others who were central players at those Montreal Games.

But, perhaps, most surprising has been the participation of the East German athletes in this dark drama. Kornelia Ender, the four-gold superstar of those Games, and Petra Thumer, the 15-year-old distance phenom who beat Babashoff in the 400 and 800 in Montreal, have both spoken with striking eloquence. Ender



PICTURED > (ABOVE) Shirley Babashoff was one of three U.S. athletes who made the cover of *Sports Illustrated’s* special Olympic preview issue. The 19-year-old superstar entered the Montreal Games, qualifying in seven events, with the hype that she could be the female Mark Spitz.

and Thumer—and all of their fellow athletes from East Germany—were victims as well.

Forced to dope by a totalitarian state, these athletes may have won gold in Montreal, but they lost much more. The damages they’ve endured—from organ malfunctions to deformed ovaries to birth defects in their offspring—are no less than a human rights tragedy. For three decades, the athletes of East Germany were subjected to an unconscionable hu-

man experiment. It is estimated that more than 10,000 athletes were victims of this forced state-sanctioned doping until the Berlin Wall came down in 1989 and the secrets of the state spilled forth.

“The Last Gold” is their story, too. It is not an attempt to strip and reorder Olympic medals or to rewrite the record books. This is an Olympic chapter that must not be forgotten, and informs so much of the decades and the doping scandals that have come since. 2016 will mark the 40th anniversary of those Montreal Olympics—an apt time to look back, when we will release this film to the world.

Juliana Margulies will be the voice. Athletes from both sides, who have seldom spoken before, from Shirley Babashoff to Kornelia Ender, have shared their memories with moving insight. It is a story that rivals the “Miracle on Ice.” It’s the greatest Olympic story *never* told.

We can’t wait to share it with you. ❖

Casey Barrett, a 1996 Canadian Olympic swimmer, is a leading voice of the sport, both as a swim school owner (Imagine Swimming, N.Y.) and as a writer. He has won three Emmy awards and one Peabody award for his work writing and producing the Olympics on NBC. At the 2004, 2006 and 2008 Games, he served as one of Bob Costas’ primetime writers. He currently writes the widely read swimming blog, “Cap & Goggles.”

PICTURED > Shirley Babashoff

PICTURED > Kornelia Ender

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TIM CONLEY

BY MICHAEL J. STOTT

Tim Conley, one of the YMCA's rising coaching stars, is building an aquatic force at the Upper Palmetto Y in Rock Hill, S.C.

Q. SWIMMING WORLD: How did you go from Shippensburg University and accounting to South Carolina and swimming?

A. COACH TIM CONLEY: The journey started with a YMCA lifeguarding job that led to assistant coach and high school head coaching. When a Y family moved to South Carolina and YSSC (Y-Spartaquatics Swim Club), they emailed me about a job opening, and I moved six days after taking my last final at Shippensburg!

Peter Wright made me the coach I am today. I was an energetic kid who loved coaching and challenging kids. I was a sponge the first few years, watching how he ran workouts and talked to the athletes. He taught athletes to find satisfaction in their achievements while reaching for untapped potential. Leaving YSSC and my mentor for almost 10 years was the toughest decision of my life so far.

SW: How is it being a head coach now?

TC: Great! I love being the one to deal with any and all problems! Being an age group coach, you forget that most team problems never make it to your desk.

SW: Besides Peter, who are other coaching mentors?

TC: Brent Arckery from the Sarasota YMCA, Chad Onken from YMCA of the Triangle Area in Raleigh, and Tripp Montgomery from Carolina Aquatics. Brent Arckery—for how he gets swimmers to buy into his training and training hard. Chad Onken—for the talent he continues to put out year after year, and how his team looks, acts and swims as a team. Tripp Montgomery—for the same reasons and for getting swimmers and driven parents to buy into a formula for success.

SW: What are the challenges for growing the Upper Palmetto program?

TC: Population size and the success of football in this area. Rock Hill has the most NFL talent per capita of any city in the USA. The one benefit I do have is our facility and a

new one being built in 2016 just 12 miles away. We teach swim lessons to an average of 2,400 kids a year at our facility. I figure we need to get two percent of those kids to keep our numbers growing.

SW: You have never been afraid to challenge swimmers...

TC: I believe in talking about how things feel and understanding why we are doing what we do. When a swimmer knows the “why,” it is easier to get them to buy in. When a swimmer buys into the training and their coach, the sky is the limit.

Test sets are key! One thing Peter Wright always did was 30 by 100 free on 1:30, 15 of which were completely all-out sprints that were randomly selected. The swimmers had no idea which ones would be the all-out sprints. Will the coach run two or three or even four in a row? This set removes any doubt of “saving up,” and it gets them out of their comfort zones.

SW: How do you hold your swimmers accountable for daily technique perfection?

TC: We try to be on them constantly about what they are doing wrong. I frequently say, “Here is what you need to do to fix your stroke. If you don’t want to fix it, that is your choice. You will have to work harder with the poor technique and have less effective strokes—but that is your CHOICE!”

SW: You are an out-of-the-box thinker, especially in the area of stroke progressions...

TC: It is all about simulating the stroke you want by practicing perfect technique. We do a lot of fly work with a buoy between the legs of age groupers and some seniors with bad fly technique. This forces the hips to stay up. We sacrifice some undulation of kick and stroke, but our main focus is getting them to understand body position in the water.



Coach Tim Conley

Head Coach and Branch Director
Upper Palmetto YMCA
Rock Hill, South Carolina

- Shippensburg University, B.S., accounting, 2004
- Seven-time South Carolina Age Group Coach of the Year
- Served as age group chair the past four years with South Carolina Swimming
- Currently coach representative on the board at SCS
- He and wife, Katie, recently became parents with the birth of their son, Charlie

Before joining the Upper Palmetto Y, Tim Conley worked with Peter Wright, growing the nationally ranked Middle Tyger program from 75 to 475-plus swimmers. In 2014, Conley's Rays finished in 13th place in men's, 43rd in women's and 16th combined at the YMCA Short Course Nationals. At Long Course Nationals, his swimmers finished eighth in men's, 30th in women's and 10th in the combined standings.

– continued on 42

When I coached age group at YSSC, we rarely did any straight fly swimming in the early parts of the season. We would do a lot of two or three perfect strokes off every wall, then easy free for the rest of the lap. My goal was to instill in them the feeling of great and perfect-technique fly strokes. As the season progressed, we would add more

and more strokes to each lap until it looked fairly decent. It is all about simulating the feeling/stroke you want until it becomes second nature.

SW: What is a normal training schedule and volume for your senior athletes and for your age groupers? What is a typical

dryland regimen for your senior groups?
TC: For seniors, we have six swim workouts a week during school, ranging from two hours 15 minutes to three hours, 40,000 to 50,000 yards a week. We also have three dryland workouts a week.

For age groupers, we offer six workouts a week, with practices ranging from one

HOW THEY TRAIN: ZACH PIEDT

BY MICHAEL J. STOTT

Zach Piedt has had quite an autumn. In October, he won two individual South Carolina state high school championships, setting records in the 50 and 100 yard freestyles (20.71, 45.14), and he plans to attend the United States Naval Academy in the fall. Piedt (6-2, 165 pounds) was also part of two winning relays, swimming the fly leg in the 200 medley (21.53) and anchoring the 200 free relay (20.43).

“The meet was clearly the best of his career,” says his YMCA coach, Tim Conley. “Zach was extremely determined and had some lofty goals going into the meet, including breaking the state records in the 50 and 100 free and leading his team to victory.” While his Fort Mill High team finished in second place, Piedt set the table for a promising year with the Upper Palmetto Rays.

Prior to Conley’s arrival, the Rock Hill-based Rays had undergone considerable coaching turnover. To their credit, Conley says the top athletes stayed the course.

Early on, Conley turned to Piedt: “I believe Zach and his desire to excel was the force behind their continued success. His leadership skills far surpass his age. He leads by encouraging, work ethic and example. He never takes it easy on a bad day or even takes a day off.

“He is always up for a challenge, displaying a willingness to improve himself daily. He loves working hard and is always evaluating and making necessary adjustments. He embraces the pain that a hard daily workout can provide.

“As a coach, I know that there are moments of failure in athletics and life. Zach looks at them, perceives where he has failed, evaluates them, learns and moves on, confident he will not fail again.

“This year, we graduate a lot of swimmers from the senior group, so in preparation for that, I have combined the pre-senior level and the senior level three times a week. I did this so Zach and his senior teammates can show the next generation of RAYS what it takes to reach their highest potential and excel in the sport of swimming.”



PROGRESSION OF TIMES

SCY	2010(13)	2011(14)	2012(15)	2013(16)	2014(17)
50 Free	24.90	22.72	21.91	21.14	20.71
100 Free	53.95	49.60	47.64	45.90	45.14
200 Free	1:57.65	1:48.14	1:42.72	1:41.70	1:38.86
100 Fly	1:02.46	57.83	51.63	50.48	49.43

LC	2010(13)	2011(14)	2012(15)	2013(16)	2014(17)
50 Free	29.29	26.27	25.11	24.65	24.21
100 Free	1:03.10	57.12	54.94	53.49	52.57
200 Free	2:15.43	2:03.21	2:00.21	1:58.87	1:55.47
100 Fly	—	1:05.90	1:02.01	57.30	56.41

SAMPLE SETS FOR RAYS SENIOR GROUP (SCY)

1.) 30 x 100 free @ 1:30 (15 random all-out sprints)

Coach Conley: “I call them out 10 seconds before they have to do it; the rest are easy free.”

2.) 8 x 100 free @ 4:00

Coach Conley: “We do this a few times a year to gauge swimmer progress.”
 Or 6 x 100 choice @ 5:00 / Or 4 x 200 free @ 8:00 / Or 4 x 200 IM @ 9:00

Coach Conley: “Every Wednesday that falls on a non-meet week after mid-October, we do test-set Wednesdays.”
 (Total Access Members: click on the link at right to download the entire sample sets.) ❖



TOTAL ACCESS MEMBERS CLICK HERE
 to download sample sets for the
 Upper Palmetto Rays senior group.

hour to one hour 45 minutes. Yardage is from about 10,000 to 22,500 a week.

SW: Why your constant focus on team?

TC: After 18 months (as the Rays head coach), it is still tough to get “the team” together as one unit. We are still a fairly small team with small team issues. The support our athletes give one another in and outside the pool is awesome. Can we do better? Without a doubt.

When I got to Rock Hill, I created the slogan, “OWYD = OWN WHAT YOU DO.” The purpose of the slogan was accountability. Be accountable for your actions, your training, your technique and, ultimately, your success. The biggest area is to support your teammates. Everything in life is easier with someone by your side encouraging you!

“When a swimmer knows the ‘why,’ it is easier to get them to buy in. When a swimmer buys into the training and their coach, the sky is the limit.”

—Tim Conley, head coach, Upper Palmetto YMCA

SW: At the 2014 YMCA Long Course Nationals, your men were eighth, women 30th and 10th overall. What do the girls need to do to get on par with the boys?

TC: BELIEVE that they can! Every day since arriving here, I have watched the girls train harder and harder, and their successes show it. Michelle Case, now at Campbell University, really embraced challenging herself and other girls in the group. We miss her, but her determination has rubbed off.

SW: At the end of the 2015 long course season, you will lose a lot of swimmers. What have you done to ease that transition?

TC: We rearranged the entire practice schedule so that the top two groups under the top senior group train three times a week together. Swimmers sometimes believe that higher levels are unattainable because they just don’t see them. We have some of the

top seniors in the state, and I wanted the next generation of the team to see there is no magic potion or wand, but that success is a direct result of daily hard work.

SW: What’s been the impetus for your heavy involvement in the South Carolina Swimming LSC?

TC: My goal has always been to elevate swimming in South Carolina. I enjoy our LSC because I see the changes we are mak-

ing, and I get to talk shop with coaches throughout the state. ♦

Michael J. Stott is an ASCA Level 5 coach whose Collegiate School (Richmond, Va.) teams have won seven state high school championships. In December, his girls team broke the school’s previous record of 67 consecutive meets without a loss. As of press time, the streak reached 72.

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BY J.R. ROSANIA
 PHOTOS BY EMMI BRYTOWSKI
 DEMONSTRATED BY MAUREEN RANKIN

Medicine ball exercises have become mainstream in sports and fitness programs over the last 10 years. They allow you to use resistance while performing many different traditional and functional exercises.

Most medicine ball programs focus or incorporate core-training exercises. Swimmers can perform many functional core exercises that are specific to swimming patterns.

This month's dryside article shows four core exercises that are specific to streamlines, strokes and kicking. The ball provides resistance throughout the exercise, offering power, speed and rotation in swim-specific movements.

Perform each exercise two to three days a week. Complete three sets of 15 reps per exercise. Use a medicine ball that is between four and 10 pounds. ❖

MEET THE TRAINER



J.R. Rosania, B.S., exercise science, is one of the nation's top performance enhancement coaches. He is the owner and CEO of Healthplex, LLC, and has finished the Ironman Triathlon 18 times. He also serves as Swimming World Magazine's fitness trainer and was named one of "America's Top Trainers" by Men's Journal and Vogue magazines. Check out Rosania's website at www.jrhealthplex.net.

MEET THE ATHLETE



Maureen Rankin is a nine-time All-American swimmer from the University of Arizona and former coach who now swims Masters. She also is an Athletic & Lifestyle model for Sports & Lifestyle Unlimited as well as the circulation manager for Swimming World Magazine.



1 THROW-DOWNS

Standing on a platform or bench, begin with the medicine ball overhead. Keeping your arms fairly straight, throw the ball down to the floor and catch it on the way up. Repeat.

2 THROUGH-THE-LEGS

From a seated position, begin to bicycle your legs and place a med ball through the legs. Alternate sides.



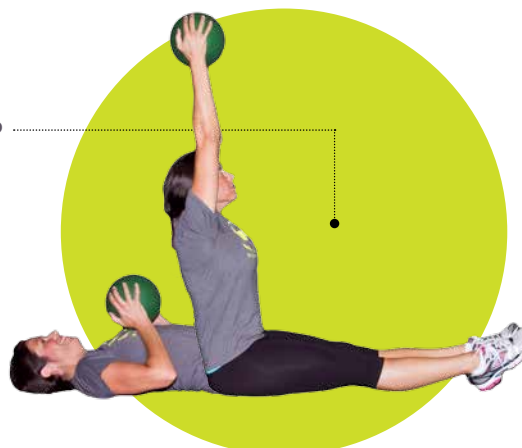
3 WALL ROTATION SLAMS

Standing next to a wall, hold the med ball at your chest. Rotate and slam the ball against the wall and catch it off the rebound.



4 STREAMLINE SIT-UP

Lying on your back with legs straight—and holding a med ball on your chest—do a full sit-up and streamline the med ball and arms overhead. Lower and repeat.



UP & COMERS

AGE GROUP SWIMMER OF THE MONTH

BY JASON MARSTELLER

MADISON HOMOVICH

Madison Homovich, 14, trains at North Carolina Aquatics, where she recently moved up to the senior group, coached by Sean Quinn. Previously, she trained with age group coach, Kathy McKee.

“Maddie has talent and works hard, but I think one of the main things is Maddie loves what she is doing,” McKee told *Swimming World*. “She loves swimming both practices and competition. She just loves and thrives on challenges.”

Last year, Homovich qualified for the Junior Pan Pacific Championships in the 400 meter free, and she was the high-point award winner at junior nationals. While in Hawaii, she took fifth in the 400 (4:14.42) and ninth in the 800 (8:42.95). Homovich also already has 2016 Olympic Trials cuts in the 400-800 free, 200 fly and 400 IM.

“Maddie is coachable and also has lofty goals,” McKee said. “She is very process-driven, and she knows that to achieve these goals, there are things she must do and be willing to commit to what it takes.”

And if she has a swim that isn't what she wants, “she quickly puts it aside and focuses on the next swim. She doesn't dwell on what goes wrong, but learns from it and moves on quickly.” ❖



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PHOTO PROVIDED BY KRISTIN KARKOSKA

WHAT IS ONE OF YOUR BIGGEST STRENGTHS?

“I think that I'm very good at understanding the sacrifices that need to be made to achieve my goals. I'm a very goal-driven person, which is a good skill for anyone to have, but I feel that I'm good at embracing the work that it will take to reach my goals.”

WHAT'S THE TOUGHEST CHALLENGE YOU'VE HAD TO FACE IN SWIMMING?

“Definitely one of my biggest challenges was this past summer when I swam junior nationals and (senior) nationals back-to-back. Swimming as many events as I did at juniors, and then swimming most of those same events again at nationals was both mentally and physically challenging. However, I did learn a lot about myself and my swimming from that situation, which will only help me work toward my goals in the future.”

WHAT ARE YOU LOOKING FORWARD TO MOST IN 2015?

“I've been working a lot on my breaststroke

to help improve my IM, which is exciting. I'm looking forward to spending time with my NCAC teammates at the upcoming meets. I'm also very excited to see all the friends I've made from other states at the meets where I've competed, and to go to OTC in April for the first time with the rest of the national junior team.”

WHO IS YOUR SWIMMING IDOL...AND WHY?

“Chip Peterson. I train with Chip, and he is such an amazing role model to me and everyone around him. He has had a lot of obstacles to overcome in the past several years, but he's never given up. I've been told many times to be prepared for when something that you can't control doesn't go your way, and Chip provides a great example of how to deal with situations like that. He has shown me that when things don't go your way, you should never give up.”

HELP WANTED FOR SUMMER SWIM CAMPS

LONGHORNS SWIM CAMP

The Longhorns Swim Camp at The University of Texas at Austin is seeking mature, motivated and team-oriented individuals to be part of its 38th year!

Exciting opportunity to work with world-renown staff: Eddie Reese, Carol Capitani, Kris Kubik and Roric Fink. Guest coaches/speakers include Olympians Ian Crocker, Brendan Hansen, Kathleen Hersey, Colleen Lanné-Cox, Garrett Weber-Gale, Jimmy Feigen and Whitney Hedgepeth.

Five one-week sessions (May 31-July 3). Room, board, parking, \$550/session salary, up to \$300 travel expense help and NIKE camp apparel package provided. Applicants must agree to work in an alcohol/drug-free environment and must have completed at least 60 hours of college coursework. Competitive swimming and/or teaching/coaching/camp experience required. References, First Aid, CPR and/or Lifeguarding/Safety Training for Swim Coaches must be submitted.

The University of Texas at Austin is an Equal Opportunity/Affirmative Action Employer. All qualified applicants will receive consideration for employment without regard to race, color, religion, sex, national origin, disability, age, citizenship status, Vietnam era or special disabled veteran's status or sexual orientation.

For more information/application, check our employment section at www.LonghornswimCamp.com. Completed applications accepted until positions filled.

MICHIGAN SWIM CAMP

The Michigan Swim Camp at the University of Michigan is looking for individuals seeking an opportunity to work with Olympic coach Mike Bottom and staff.

Four one-week sessions (June 7-11, 21-25, July 26-30, Aug. 2-6). Room, board, local telephone plus \$520/week salary and \$125 travel expense help.

Applicants must be 21 years or older, have attended at least two years of college and have experience as a competitive swimmer and/or coach. References, CPR and First Aid certification are required.

Candidates must be willing to work in an alcohol/drug-free environment.

For more information and an application, call 734-647-0862, fax 734-763-6543, email: danitans@umich.edu, or write to: Danielle Tansel, Michigan Swim Camp, 1000 S. State St., Ann Arbor, MI 48109.

NAVY SWIMMING CAMP

COACHES WANTED: two sessions (June 15-19 and June 21-25, 2015).

Unique opportunity to spend time in Annapolis in 2015! Room, board and staff shirts are included. Salary is based on experience. Current student-athletes are encouraged to apply as well. Looking for people who are optimistic, enthusiastic, passionate about swimming and who work well with people of all ages.

Additional opportunities to earn more money at the 2015 Navy clinics on June 19th and 20th.

Send email/letter and resumé with references to: Bill Roberts, Navy Swimming Camp, 566 Brownson Road, Annapolis, MD 21402 or navyswimmingcamp@usna.edu.



EXCITING TIMES AT GOLDEN GOGGLES

BY JASON MARSTELLER



The Golden Goggles certainly proved to be an exciting event for USA Swimming in New York City in November. **Katie Ledecky** and **Michael Phelps** were named the Female and Male Athletes of the Year, while **Bruce Gemmell** earned Coach of the Year honors.

The **U.S. women's 800 free relay** took home the top award for Relay Performance of the Year, while open water swimmers **Haley Anderson** and **Andrew Gemmell** snagged the Perseverance Award for winning gold medals at the Pan Pacific Championships after a change of venue from Australia to Hawaii.

Maya DiRado, who won a gold medal in the 200 IM at Pan Pacs, earned Breakout Performer of the Year honors.

For the first time, a pair of distance swimmers claimed Race of the Year honors, as **Ledecky's** world record-smashing 1500 free and **Connor Jaeger's** 1500 free victory were recognized.

The event had a lot of social media chatter, mentioning everyone's amazing attire as well as some interesting anecdotes from the year:



► **Katie Ledecy gets marriage proposal in Australia**

Nick Zaccardi @nzaccardi
Missy Franklin storytelling Katie Ledecy's marriage proposal from Pan Pacs ...

► **Johnny Weir and Ryan Lochte looking like twins**

Johnny Weir @johnnygweir
Hell Yeah! I ♥ ryanlochte. @ New York Marriott Marquis

► **Caitlin Leverenz wearing a dress her mom made**

Erin Quinn @erinquinn11
How sweet and cool that @cleverenz mom designed and made her dress for #GoldenGoggles

► **Katie Ledecy leading the 800 free relay**

Erin Quinn @erinquinn11
Relay of the Year goes to...Women's 2x200FR Relay @ PanPacs! #Goldengoggles ❖



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PARTING SHOT



[PHOTO BY MELISSA LUNDIE]

PICTURED > Michael Thomas (right) reacts to his victory in the men's 200 yard IM on the second day of the Speedo Winter Junior Championships, Dec. 10-13, at Federal Way, Wash. Trailing by 59-hundredths at the final turn, Thomas split 24.64 on the freestyle leg to win by 21-hundredths of a second over Michael Andrew (left), who demonstrates good sportsmanship after their hard-fought battle.