Giants In Orthopaedic Surgery

Giants In Orthopaedic Surgery: Jacquelin Perry MD, DSc (Hon)

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Note from the Editor-in-Chief: In “Giants In Orthopaedic Surgery,” a columnist explores the life and achievements of an orthopaedic surgeon who changed our profession, by interviewing other surgeons whose lives the “Giant” touched through mentorship or collaboration, or by using other historical sources that provide similar insight. We welcome reader feedback on all of our columns and articles; please send your comments to eic@clinOrthop.org.

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RJOS is named for Ruth Jackson MD, the first woman certified by the American Board of Orthopaedic Surgeons in 1937 [6]. Thirty years ago, she and five other women identified the need for a society of female orthopaedic surgeons to address common issues encountered by the increasing number of women surgeons in training, practice, and academia. As such, Dr. Jackson secured her place as an orthopaedic pioneer. Among this group was Jacquelin Perry MD, DSc (Hon). Dr. Perry was the second President of the RJOS, but this was not her first foray as a founding member of an orthopaedic society. In 1966, Dr. Perry was one of the 35 spine specialists, and solitary woman, to establish the Scoliosis Research Society [7].

Amy L. Ladd MD, Professor in the Department of Orthopaedics at Stanford University, currently serves as the President of the RJOS. She still marvels at how Dr. Perry exemplified focusing on patient care without being deterred by politics or other distractions.

“She was very practical, yet so insightful,” Dr. Ladd said. “Her approach was a methodical analysis to improve patient care and everyone around her. She could be very intense

and stern, but the endgame was improvement. She didn’t let anything distract her from this.”

Dr. Perry’s long and highly productive career spanned seven decades. As an author of more than 400 publications, her commitment to teaching and improving the lives of patients remains legendary. Considered a relentless problem solver, Dr. Perry’s inquisitive mind, intellect, and no-nonsense approach found solutions where others did not even see problems.

Her dedication to musculoskeletal health and disease reflected her educational background in physical education, physical therapy, and orthopaedic surgery. A pioneer in gait and motion, she analyzed normal and abnormal conditions, rehabilitation exercise, and sports.

Dr. Perry’s orthopaedic career would seem to have no missteps, only a series of strides in a progression to innovation and discovery in surgery, clinical care, education, and research. As one of the first internationally prominent women in orthopaedic surgery, she helped promote and develop other women in the field through the RJOS, and more recently, in science through the Perry Initiative. Her humility would cause her to argue

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otherwise, but she more than earned the title of the “Grand Dame of Orthopaedics.”

— Marlene DeMaio MD, MC, USN (retired)

A young Jacquelin Perry knew by the age of 10 that she wanted to be a physician [4]. The work she went on to do throughout her lengthy and distinguished career — a career that stretched until the day before she died — changed lives and altered medical practice (Fig. 1).

Confucious said, Find a job you love and you will never work a day in your life. Her humble nature, despite countless achievements, awards, and acknowledgements, prove no greater example of this phrase. In 2010, Dr. Perry implied that she had “profited from several timely opportunities, and ... grabbed each one” [6].

Lisa Lattanza MD and Dr. Perry met while working together at the biomechanics lab at Centinela Freeman Regional Medical Center in Inglewood, California. Dr. Perry was the research consultant at the time. By then, Dr. Perry had long been considered a world-renowned orthopaedic surgeon. Despite this acclaim, she always felt like she had not done anything special.

“I think a lot of that came from the fact that she was always doing what she loved, and felt like it was an honor to be taking care of patients and teaching people,” Dr. Lattanza said.

Although she would never admit it, countless patients and physicians have benefited from Dr. Perry’s clinical and surgical care, research, writing, teaching, and mentoring.

On Course

Dr. Perry earned her bachelor’s degree in physical education from the University of California, Los Angeles in 1940 [6]. In her senior year, she was introduced to physical therapy, and the timing of that introduction proved serendipitous.

“The Army announced that its physical therapy school had become a civil service program,” Dr. Perry wrote. “My one-unit classes on Greek and Latin roots helped me pass the vocabulary entry exam. Thus, my future began” [6].

From 1940 to 1941, she received physical therapist training at Walter Reed Army Hospital and went on to practice in the U.S. Army for 5 years [1, 4].

“As a physical therapist during World War II, she was getting orders from physicians that she did not think were correct,” Mary Ann Keenan MD, a former colleague of Dr. Perry and current Director of Neuro-Orthopaedics Education at the University of Pennsylvania, said. It was at this moment Perry made the decision to

attend medical school and become an orthopaedic surgeon.

With the help of the G.I. Bill, Dr. Perry entered the University of California, San Francisco (UCSF) [6]. In 1950, she earned a degree in medicine from UCSF, and she completed her residency there in 1955. After residency, Dr. Perry earned certification as an orthopaedic surgeon through the American Board of Orthopaedic Surgery, making her one of the first women certified in the profession [2, 9].

“I don’t think she worried about being a woman,” Dr. Keenan recalled. “She said, ‘It really doesn’t matter if you’re first, it matters if you’re good.’”

Polio and Postpolio Work

In 1955, Rancho Los Amigos Rehabilitation Center recruited Dr. Perry to launch its physical therapy program [3, 4, 10]. While at Rancho, Dr. Perry treated patients with severe spinal and respiratory muscle paralysis. Her patients could not tolerate the anesthesia needed for surgical stabilization [6].

“The patients’ collapsing spine prevented sitting, and aggravated an already limited ability to breathe,” she said [6].

While working alongside Dr. Vernon Nickel on these cases, the pair

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developed the halo for spine, head, and neck immobilization, which aided in upright positioning for polio patients, and became widely used in hospitals [3, 4, 10].

“She was always in a situation where she had to be the one finding the answers,” Dr. Keenan said, reflecting on Dr. Perry’s early days at Rancho Los Amigos. “There weren’t set procedures, so she had to set them herself.”

Although the introduction of the Salk vaccine greatly decreased the number of new polio patients, Dr. Perry continued working with this patient population. When they started showing symptoms of fatigue, joint pain, and muscle weakness, [3, 4], her focus shifted to treating postpolio syndrome. Dr. Perry attributed postpolio syndrome to the weakening of overworked nerves and muscles in fighting the polio infection [3, 4]. She advised her patients to avoid strain, reduce their physical activity, and adapt as they had done before [4, 9].

Dr. Perry always had a unique way of working with her patients, according to Dr. Lattanza. “By that, I mean she looked at the patient as a whole person — not just with regard to their disability — but who they are, what their goals are, what’s important to them,” she said.

Dr. Keenan echoed this sentiment, adding that Perry strived to put together

a complete patient picture, taking into account their needs and wants.

“I think many orthopaedic surgeons would tend to think very mechanically, and she really taught me how to think functionally,” she said.

Change of Course

In the late 1960s, a cerebral artery stenosis forced Dr. Perry to pursue a new direction in her professional career [3, 9].

“She dealt with those kinds of adversities with a great deal of grace,” Dr. Keenan said. “It freed her up to be thinking more, rather than being caught up in the demands of a clinical practice.”

Although she could no longer perform operations, Dr. Perry continued to search for something worthwhile. In 1968, she founded the Pathokinesiology Laboratory at Rancho Los Amigos to analyze the biomechanics of walking [4].

This focus on gait analysis led to an eventual international reputation as a leading authority on walking biomechanics, a reputation that continues through her textbook, *Gait Analysis: Normal and Pathological Function*, which was first published in 1992, and revised in 2010 [4, 9].

“Dr. Perry’s pioneering work in the field of orthopaedic surgery and

motion analysis has had a lasting impact on diagnosis and treatment of gait disorders,” Jessica Rose PhD, Director of the Motion & Gait Analysis Lab at Lucile Packard Children’s Hospital said. “Applying her keen analytic approach, Dr. Perry promoted evidence-based medicine early on and advanced orthopaedic care of complex gait disorders.” The initial work was so successful that she applied it to other movements, such as sports and physical therapy exercise; a novel approach at that time.

Parkinson’s disease took its toll in the last decade of her life, but her mind remained sharp as she continued writing.

“She is one of the most brilliant minds that I’ve ever known, but what’s different is that she was always able to apply that,” Dr. Lattanza said. “I think her singular passion for helping patients and her thirst for knowledge ... are probably what drove her to be as successful as she was. She would never define success by the number of awards she got or the number of papers that she’s written. She was the type of person who defined success by how she helped her patients, and ultimately, I think that’s what made her different from other people. Whenever you saw her working in the lab or with a patient or giving a lecture she was absolutely the most excited, passionate, happy person in the room. She loved doing all of it.”

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Impact as a Mentor

Considered the “Grand Dame of Orthopaedics,” Dr. Perry was often recognized and honored for her distinguished contributions to the field of orthopaedic surgery. But it was her work as a mentor to countless students and colleagues that perhaps deserved the most praise. Mark M. Hoffer MD was an orthopaedic resident at Rancho Los Amigos in 1967 and became Dr. Perry’s postresidency fellow in 1968. In 1969, he was named Chief of the Children’s Orthopaedic Service at Rancho, where he held the position until 1992. Dr. Perry remained a mentor and advisor throughout his time there. They collaborated on more than a dozen clinical papers together, and shared the Kappa Delta Award in 1977 for their study on dynamic electromyography as an aid in planning tendon transfers in children with cerebral palsy [5].

“She was my resource for academic advice when I became Chief of Orthopaedic Surgery at the University of California at Irvine, and then again when I moved back to the University of Southern California/Orthopaedic Hospital family,” Hoffer wrote in an email. “She was always my teacher and orthopaedic parent, rather than a mere colleague.”

Dr. Perry’s mentorship went beyond lessons in orthopaedics, extending into

Fig. 1 Dr. Perry was one of 35 spine specialists, and the lone woman, to establish the Scoliosis Research Society in 1966. Photo courtesy of the Scoliosis Research Society.

lessons of integrity (Fig. 2). When they first met, Dr. Lattanza felt intimidated by the legendary orthopaedic surgeon. Despite this apprehension, Dr. Lattanza hung on Dr. Perry’s every word in an effort to learn as much as she could.

“One time, after [a] research meeting, I was walking out to my car to go to another clinic, and she was walking out to her car at the same time,”

Lattanza said. “She came up to me and said, ‘What are you doing here?’ I thought, ‘Okay, here’s the part where she tells me I should get a job at a coffeehouse, and that I don’t belong in medicine.’”

Contrary to Dr. Lattanza’s worst fears, Dr. Perry simply wanted to offer some advice.

“She said, ‘You either need to go to medical school or you need to get your

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Fig. 2 This photo shows Dr. Perry helping students identify landmarks on the femur at the Perry Outreach Program at UCSF. Republished with permission from The Perry Initiative.

PhD.’ I was blown away,” Lattanza said. They talked for several minutes in the parking lot. “In that instant she became my mentor. I talked to her about this many times since then and her response was, ‘I guess I should watch what I say. I had no idea that something like that would have such an impact on somebody.’”

Dr. Rose also explained that Perry was instrumental in her decision to pursue an academic career, and inspired her to investigate mechanisms underlying neuromuscular deficits in children with cerebral palsy.

“To this day, when faced with a scientific challenge, I consider how she would approach it,” Dr. Rose said. “Dr. Perry’s innovation and intelligence were an inspiration to all. As an engaging role model she encouraged entry of young women into the fields of orthopaedic surgery, biomechanics,

and physical therapy, and promoted the pursuit of research and academic careers.”

The Perry Initiative

In 2009, in an effort to inspire young women to become leaders in the fields of orthopaedic surgery and engineering, Jenni Buckley PhD, and Dr. Lattanza founded The Perry Initiative [9].

“Our goal was to mentor generations of young women — to have an impact on them,” Dr. Lattanza said.

Drs. Buckley and Lattanza were colleagues at UCSF when they started brainstorming about how to make a bigger impact, and expose more young women to their respective careers. They created The Perry Initiative shortly thereafter.

The first workshop hosted 18 young women for four consecutive Saturdays in 2009. They conducted simulated surgeries, fixed sawbones, and biomechanically tested their own constructs, Dr. Lattanza explained. During the course of that 4-week period, a transformation occurred.

“Most of them came in never having done anything like this, never having been exposed to anything remotely similar ... [they] started on the first day shy and timid, and by the end of seminar were fighting over who gets to make the cut, or hammer, or saw, and so we decided that wouldn’t this be cool if we could do this in a lot of other places?” Dr. Lattanza said.

Approximately 3000 women have participated in the Perry Outreach Program for high-school students, and the Medical School Outreach Program, for first- and second-year medical students since their inception. Currently, the Perry Initiative is reaching approximately 1200 students per year at nearly 30 sites nationwide. Drs. Buckley and Lattanza are also keeping data to measure the impact that the initiative is having on the participants.

“The response from the students has been universally positive, and it is not unusual for us to hear that attending our outreach program was a life-changing experience for them,” Dr. Buckley said.

According to Dr. Buckley, among those participants who are now in

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college (high school participants of college age), 84% were enrolled in Science, Technology, Engineering, and Math (STEM) majors, with 62% in the biosciences and 20% in engineering. These rates are 4 to 5 times the national average. The students reported that our outreach program had a definite influence on their decision to pursue a STEM major.

Dr. Buckley explained that their goal is that every young woman in the country will be able to make it to a Perry Initiative program.

“Having Dr. Perry as our namesake gives us the opportunity to keep her history and her values alive with the next generation of women in orthopaedics,” Dr. Buckley said. “There is not a week that goes by that I do not explain to someone whom Dr. Perry was and what she stood for.”

Perry got the chance to see the Perry Initiative in action, and attended several of the Perry Outreach programs.

At one in particular, Dr. Buckley recalled, Perry coached a student on how to install a femoral intramedullary nail.

“The student got it, and Dr. Perry had the biggest smile on her face. It was a beautiful moment,” she said.

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