

Hosting the Perry Outreach Program and Medical Student Outreach Program in Albuquerque: Promoting Women Leaders in Engineering and Orthopaedic Surgery

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Jenni Buckley, PhD, and Lisa Lattanza, MD, founded the Perry Initiative in 2009. Drs. Buckley and Lattanza named the non-profit organization in honor of Dr. Jacquelin Perry, one of the first female orthopaedists in the 1950s.¹ The Perry Initiative runs more than 30 annual outreach programs and aims to inspire young women to pursue orthopaedic-surgery and engineering careers. Why? Because the percentage of female leadership in each field is low—women “make up only 6.1% of fully-accredited practicing orthopaedic surgeons” and “only 12.4% of the faculty at engineering schools are women.”¹

At The University of New Mexico (UNM) Department of Orthopaedics & Rehabilitation, we are honored to host two Perry Initiative programs right here in Albuquerque: the Perry Outreach Program (POP) and the Medical Student Outreach Program (MSOP). We have hosted five POPs since 2013 and hosted our first MSOP in 2016. Owing to the success of our previous POP events, the Perry Initiative selected our site to host the MSOP, a recently created pilot program.

Differences Between the Programs

At both events, participants must first submit to a selective application process for acceptance. Both events include open discussions, hands-on workshops, and direct networking with orthopaedic surgeons and engineers—guided by women leaders in both fields. Additionally, they are free for participants. Notably, the POP and MSOP have a few differences.

The POP is a long-standing annual event held in various locations across the United States and recruits mainly high-school students. The program exposes young women

to medicine and engineering fields, and 40 local students are accepted to this all-day event. The program includes six hands-on workshops, an engineering competition (created by Christina Salas, PhD, and her team at the UNM Orthopaedics Biomechanics & Biomaterials Laboratory), and two lectures. Two representatives from the Perry Initiative fly out to New Mexico to lead the program.

The MSOP is a new program (introduced in 2016) and recruits only female medical students, allowing direct exposure to orthopaedic surgery. A total of 30 UNM medical students participate in this half-day event. The program—consisting of two hands-on workshops and two lectures—is self-run by UNM Orthopaedics (with help and supplies provided from afar by the Perry Initiative).

Ultimately, the goal of each program is to inspire women to pursue careers in the two male dominated fields of engineering and orthopaedic surgery. The methods and emphasis, however, to achieve these are slightly different. The POP invites young women in high schools throughout New Mexico to explore careers in medicine and engineering. The MSOP helps foster a sense of community between new medical students and UNM Orthopaedics and provides a unique opportunity to network with UNM physicians, residents, fellows, and colleagues. At the end of both programs, we hope our participants leave with new ideas and insights into a lifelong career—a career that women and men can pursue with equal success.

Hosting the Fifth Annual Perry Outreach Program on March 4, 2017

At the fifth annual POP, a total of 28 volunteers (ie, physicians, residents, fellows, orthopaedic technicians, physician assistants, medical students, engineering students, and department staff members) and 41 high-school students embarked on a journey with drills, bones, and cadaveric specimens. Our guest speaker from Axogen Inc—Crystal Simon, PhD—started the day with a talk about biomedical engineering and the dynamic relationship between physicians and engineers (Figure 1A). Afterward, we began the first set of hands-on workshops and helped the high-school students apply arm casts, suture pig feet, and drill intramedullary (IM) nails into fractured bones (Figure 1B).



Figure 1. At the Perry Outreach Program, (A) Crystal Simon, PhD, discusses how to succeed as a biomedical engineer and (B) Orlando Merced-O'Neill (blue scrubs) shows two participants the proper way to apply suturing techniques.

After the morning workshops, Dr. Salas directed the bone-breaking competition—an innovative engineering-related addition to the program, featured for the first time last year. Participants watched wide-eyed as engineering volunteers placed the bones (which the participants had repaired earlier during the IM nail workshop) inside a testing device that applied force until breakage occurred—a device that Dr. Salas and her team designed and created (Figure 2). The winning group repaired a bone that withstood 250 lb!

With new understanding of how the type of surgical repair affects the strength of the repaired bone, students transitioned into the final set of hands-on workshops: repairing fractures of the distal radius, performing external fixation, and observing a live dissection of a cadaveric hand-and-forearm.

Before the program concluded, we rallied all volunteers for a final question-and-answer session and invited the participants (and their parents) to inquire about any topic in either field. Questions ranged from how to successfully apply to medical school to how to persevere in a male-dominated profession. The young, aspiring

women departed with personalized diplomas, goodie bags, mentors, internship opportunities, and a newfound passion for medicine and engineering (Figure 3).



Figure 2. At the Perry Outreach Program, Christina Salas, PhD leads the engineering competition and discusses the device constructed in her UNM Orthopaedic Biomechanics & Biomaterials Laboratory.



Figure 3. At the Perry Outreach Program, a group photograph shows all fantastic participants and volunteers.

Hosting the First Annual Medical Student Outreach Program on September 17, 2016

Janel Pietryga, a senior medical student at UNM, began our first annual MSOP with an informative talk on physician-shadowing opportunities and available student groups at UNM North Campus. Christopher Hanosh, MD—an assistant professor at UNM Orthopaedics—complemented Janel's lecture with a lively discussion on work-life balance as a practicing surgeon (Figure 4). The entire group consisted of 27 medical students and 10 volunteers (ie, physicians, fellows, residents, and staff members).

After the morning lectures, the medical students participated in two hands-on workshops: applying techniques using IM nailing and performing external fixation, both for treating fractured femurs (Figure 5).

Erica Gauger, MD, and Brandee Black, MD captivated all listeners with their stories on choosing orthopaedics as a lifelong career, persevering through residency and fellowship experiences, and overcoming the many obstacles along the way.

Following the lectures, the volunteers formed a panel discussion and invited all participant inquiries. The medical students asked about daily life, how to raise kids while working as a surgeon, and the timeframe required to complete a fellowship in orthopaedics. Before the program ended, each of the participants received a shiny certificate of completion and a book published by the Ruth Jackson Orthopaedic Society (Figure 6).



Figure 4. At the Medical Student Outreach Program, Christopher Hanosh, MD, asks the students about their current interests regarding surgical professions.



Figure 5. At the Medical Student Outreach Program, Brandee Black, MD, helps medical students in the intramedullary-nail activity.



Figure 6. At the Medical Student Outreach Program, participants and volunteers pose for a group photograph before heading home.

Moving Forward

Thanks to these two amazing programs created by the Perry Initiative, many young women of New Mexico can reap the benefits of networking and participating in medical- and engineering-related workshops. UNM Orthopaedics is grateful for the opportunity to host such fantastic outreach events in our effort to actively educate the women of our state on the essential collaboration between medicine, engineering, and pursuing your ambitions in both fields.

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Reference

1. The Perry Initiative. Mission & History. <http://perryinitiative.org/about/mission-statement/>. Accessed March 10, 2017.