

in Albuquerque: Inspiring New Generations of Women Engineers and Orthopaedists

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Female leaders in the fields of orthopaedic surgery and engineering are sparse. Women comprise only “6.1% of fully-accredited practicing orthopaedic surgeons” and “12.4% of the faculty at engineering schools.”¹ To inspire women leaders in both fields, the Perry Initiative runs more than 40 outreach programs nationwide and has influenced more than 7500 high school, college, and medical students.¹ At The University of New Mexico (UNM) Department of Orthopaedics & Rehabilitation, we host two Perry Initiative programs annually to help change these numbers: the Perry Outreach Program (POP) and Medical Student Outreach Program (MSOP).

Each event provides participants with a unique opportunity to network with local female physicians, residents, fellows, engineers, and colleagues. The POP invites young women in high school to explore careers in medicine and engineering, and the MSOP helps foster a sense of community between new medical students and UNM Orthopaedics. The goal of the POP is to inspire women to pursue careers in orthopaedic surgery and engineering—particularly mechanical engineering—whereas the MSOP is focused mainly on encouraging female students to pursue specialties in orthopaedic surgery. Overall, UNM Orthopaedics has led six POPs since 2013 and two MSOPs since 2016.

Our team of faculty, staff, and volunteers is honored to be among the national sites that host POPs and MSOPs. We are also proud to reach out to young women in the rural state of New Mexico, who might not otherwise be exposed to orthopaedic surgery and

engineering. At the end of both programs, we hope our participants embark with new ideas and insights about lifelong careers in engineering and medicine—careers that are readily attainable.

DIFFERENCES BETWEEN PROGRAMS

At both free-of-charge events, female participants join open discussions, dive into hands-on workshops, and have the chance to directly network with orthopaedic surgeons, healthcare professionals, and engineers—guided by women leaders in both fields. Notably, the POP and MSOP have a few differences.

Perry Outreach Program

- All-day event created by the Perry Initiative in 2009 and held at various locations across the United States
- Recruits 40 female high-school students through a competitive application process overseen by the Perry Initiative
- Representatives from the Perry Initiative fly out to the host city to help lead the program
- Comprises six hands-on activities in orthopaedic surgery and engineering, two lectures, and a questions-and-answers (Q&A) session
- Includes free lunch and breakfast
- UNM-specific workshops include a cadaver component and engineering competition

Medical Student Outreach Program

- Half-day event introduced in 2016 to select sites across the United States
- Recruits 30 medical students through an application process overseen by UNM Orthopaedics
- Self-run by UNM Orthopaedics, with material shipments from the Perry Initiative
- Comprises two hands-on workshops in orthopaedic surgery, one lecture, and a Q&A session
- Includes free breakfast
- Mirrors the program set forth by the Perry Initiative

SIXTH ANNUAL PERRY OUTREACH PROGRAM ON MARCH 17, 2018

At the sixth annual POP, about 40 volunteers and 39 high-school students participated in all-day activities. Our guest speaker from Axogen Inc—the president, Karen Zaderej—opened up our morning lecture with an insightful talk about biomedical engineering and life balance. Afterward, we began the first set of hands-on workshops and helped the high-school students apply arm casts, suture pig feet, and implant intramedullary (IM) nails into fractured femurs (Figures 1 and 2).

After the morning workshops, Dr. Christina Salas led the bone-breaking competition—an innovative engineering component to the program. Participants watched wide-eyed and laughed excitedly as a custom-made device applied load until it broke the bones of the IM nail workshop. 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, repairing a fractured femur using external fixation techniques (Figure 3), and observing a live dissection of a cadaveric hand-and-forearm.

Before the program concluded, all volunteers gathered together to answer any questions posed by participants (and by the participants' parents). The



Figure 1. At the Perry Outreach Program, participants suture pigs feet.



Figure 2. At the Perry Outreach Program, from left to right: Christina Salas, PhD, and Deana Mercer, MD (The University of New Mexico site directors for the Perry Initiative programs) pose for a quick shot with Karen Zaderej (our guest speaker and president of AxoGen Inc) and Robert Schenck Jr, MD (chairperson of the Department of Orthopaedics & Rehabilitation) before joining participants in the intramedullary nail workshop.



Figure 3. At the Perry Outreach Program, participants repair fractures of the femur using external fixation techniques.

young, aspiring women departed with personalized diplomas, goodie bags, mentors, internship opportunities, and a newfound passion for medicine and engineering (Figure 4).

SECOND ANNUAL MEDICAL STUDENT OUTREACH PROGRAM ON SEPTEMBER 16, 2017

Dr. Robert Schenck Jr, Chairman of UNM Orthopaedics, began our second MSOP with an informative talk on the success of women leaders in orthopaedic surgery, work-life balance, and shadowing opportunities (Figure 5). After the morning discussion, the medical students participated in two hands-on workshops: applying techniques using IM nailing and performing external fixation, both for treating fractured femurs (Figure 6). Dr. Mercer captivated all listeners with her story on choosing orthopaedics as a lifelong career, persevering



Figure 4. At the Perry Outreach Program, a group photograph shows all fantastic participants and volunteers.



Figure 5. At the Medical Student Outreach Program, Robert Schenck Jr, MD, speaks with the participants about orthopaedic-related careers.



Figure 7. At the Medical Student Outreach Program, participants and volunteers pose for a fun group photograph after the event.



Figure 6. At the Medical Student Outreach Program, Deana Mercer, MD, helps a medical student in the intramedullary-nail activity.

through residency and fellowship experiences, and overcoming the many obstacles along the way. In conclusion, the volunteers formed a panel discussion and invited all participant inquiries. Before the program ended, each of the participants received a shiny certificate of completion and—of course—posed for a group photograph (Figure 7).

FUTURE

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 fields. UNM Orthopaedics is grateful for the opportunity to continue hosting these much-needed outreach events in our effort to educate New Mexican women on the collaboration between medicine and engineering—and on pursuing your ambitions.

REFERENCE

1. The Perry Initiative. Mission & History. <http://perryinitiative.org/about/mission-statement/>. Accessed May 10, 2018.