

Encouraging Participation of Women in Orthopaedic Surgery and Engineering at the Third Annual Perry Outreach Program in New Mexico

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Another year, another wonderful event. Thanks to the dedication of the Perry Initiative and local volunteers, the University of New Mexico (UNM) Department of Orthopaedics & Rehabilitation hosted the Perry Outreach Program on Saturday, March 14, 2015. Forty female high school students from New Mexico underwent a selective application process to participate in both hands-on workshops and open discussions in orthopaedic surgery and engineering. The program—led by volunteers such as surgeons, residents, and medical students—came to a close with a question-and-answer (Q&A) session. Our next generation of biomedical professionals departed with goody bags, internship opportunities, and a better understanding of the essential collaboration between surgeons and engineers.

At 9:15 AM, when parents had trickled (almost reluctantly) away and their daughters had assembled (most eagerly) in a conference room, the day began. Dr. Deana M. Mercer started the morning lecture with three themes: the power of knowledge, cultural boundaries pertaining to women, and time management. Although many people think of a practicing surgeon's day-to-day life as a blur of lab coats and stethoscopes, few appreciate what goes beyond the operating room—and Drs. Mercer, Selina R. Silva, Jessica C. McMichael, and Elizabeth A. Mikola were more than willing to share the details. Hands shot up like fireworks: “What’s a typical day like?”; “Why did you go into orthopaedics?”; “How many hours do you have to work?”; “How old were you when you finished with school?” Regardless of how personal the question, the doctors did not sugarcoat responses. Above all, the idea of balance in family and personal life was stressed to the young audience.

Perhaps with a new perspective on what it meant to be an orthopaedic surgeon, the participants filed out of the conference room at about 9:45 AM to begin the morning workshops. Three groups rotated between hands-on exercises in external fixation, dissection of a cadaveric

hand, and suturing on pig feet. The young women repaired a broken femur using an external fixation set and compared the procedure with internal fixation. In the dissection workshop, the students learned why the “funny bone” is anything except funny and identified the ulnar nerve that causes the infamous pain (Figure 1).



Figure 1. Dr. Deana M. Mercer (left) leads the dissection workshop, with high school participants learning to locate and expose the ulnar nerve of a cadaveric hand.

Participants were also taught the importance of suturing techniques, using both practice boards and pig feet. Amidst the sounds of whizzing drills and intakes of breath, one could also make out the buzz of constant chatter from doctors and medical students explaining procedures and responding to inquisitive looks.

After more than 2 hours of training, a buffet of pizza, salad, and lemonade met its doom when faced with ravenous participants and volunteers. As satisfied stomachs and smiles settled in the conference room, Dr. Christina Salas described her role as a biomedical engineer and the important relationship between engineers and orthopaedic surgeons. She then introduced Dr. Elizabeth L. Dirk, a professor in the UNM School of Engineering. Similar to that of a surgeon, the world of an engineer is unknown to those outside the profession. However, as Drs. Salas and Dirk illuminated, little advancement would have occurred or continue to occur in modern medicine without original investigations. This essential research—dedicated to providing the right implants and devices for the right procedure—provided yet another career path for the young women to consider.

The students left the conference room at 12:45 PM and began the afternoon workshops of intramedullary (IM) nail fixation, casting, and repairing complex fractures of the proximal femur. In the module on IM nail fixation, expressions of joy or terror while wielding a hammer were calmed to concentration thanks to the firm instruction given by medical students. Casting on the upper extremity may have seemed simple, but the actual attempt perhaps enlightened such a notion (Figure 2). Finally, to show an alternative method to IM nail fixation, synthetic femur bones were repaired using screws and plates. As usual, time escaped without warning—only the arrival of curious friends and family members signaled that the day was coming to a close.



Figure 2. Instructors of the casting workshop, Avelena J. Ortega, RN, (left) and Austin R. Grace, MA, (right) respond to student questions about the procedure.



Figure 3. Outside the Domenici Center for Health Sciences Education, a total of 36 participants of the Perry Outreach Program (standing) and 9 of the volunteers (kneeling) pose for a group photograph.

Before leaving, the young women had a Q&A session with all volunteers and an awards ceremony for successful completion of the program. Questions such as “What can I do to prepare for medical school?” and “How do I find mentorship opportunities?” had a unanimous answer: extracurricular involvement beyond the classroom and continued contact with the Perry Initiative. Afterward, each participant shuffled to the front of the room with a big grin and received an official certificate and a goody bag. And nothing says “It’s a wrap!” quite like assembling for a group photograph set under a lazy-blue, New Mexican sky (Figure 3). The high school students returned home with can-do attitudes, and the day ended with the Perry Initiative goal—“Inspiring women to be leaders in orthopaedic surgery and engineering”—accomplished.

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