

TEACHING THE TEACHERS

BY ANNE KESSEN LOWELL



A

unique partnership is spreading Mallinckrodt Institute of Radiology (MIR) talent and technique across five thousand miles to Chile. Sharlene Teefey, MD, associate professor of radiology, is concluding the first year of a three-year grant from the Radiological Society of North America's (RSNA's) "Teach the Teachers" program, and the program is already showing impressive results.

An international partnership

The RSNA, in 2000, established the International Radiology Education Program Grant to “teach the teachers from emerging nations.” The RSNA sought to fund programs that would increase the knowledge base and improve teaching practices in radiology in developing countries. Teefey submitted her proposal in 2001 and was selected from a highly competitive pool of applicants.

The MIR Teach the Teachers program began with an international connection and flourishes in part because of the worldly experience and outlook of Teefey and her colleagues. The seeds of the program were sown 25 years ago, when a young Chilean doctor named Isidro Huete completed a fellowship in neuroradiology at MIR. His fellowship not only provided the renowned training of the MIR program, but also opened the door to friendships and professional connections that would eventually result in an international partnership.

Huete returned to Chile and joined the staff of the Universidad Catolica in Santiago, the capital of Chile and home to about 40 percent of the country’s population. Universidad Catolica is a private hospital and boasts one of the country’s most prestigious medical schools. When Huete was named chairman of diagnostic radiology in 1983, he set out to build a department with strong subspecialty expertise—a difficult task in a country with no radiology fellowship programs. So he began

Left: Flying over the Andes, the world’s largest system of high mountain ranges. The Andes extend into seven South American countries, including Chile.

to work with his former colleagues at MIR. Fernando Gutierrez, MD, associate professor of radiology at the Institute, visited Universidad Catolica to lecture and teach, and Universidad Catolica sent residents to MIR for training.

When the Teach the Teachers opportunity arose, Teefey, Huete, and Gutierrez jumped at the chance to expand the impact of their to-date informal program and to solidify the relationship between the two universities. There were many reasons to select Chile and Universidad Catolica for the program: The university has high-quality facilities and equipment that accommodate a good teaching program and brings doctors from other South and Central American countries for training. Teefey also recognized the tremendous need in Chile for training in radiology expertise—there are only 500 radiologists in all of Chile to serve 15 million people.

The program set ambitious goals:

- Send four MIR faculty per year to Universidad Catolica to teach two-week blocks in a subspecialty
- Bring a total of eight Chilean second-year and third-year residents to MIR for three-month rotations
- Attract radiologists from other Central and South American countries to come to Universidad Catolica during the MIR visiting faculty program.

Sanjeev Bhalla, MD, assistant professor of radiology, made the inaugural visit to Santiago as the first MIR visiting faculty in March 2002. Leaving behind the signs of early spring in St. Louis, Bhalla encountered the cool fall climate of the southern hemisphere. His reception at Universidad Catolica could not have been warmer, however. Bhalla,



Left: Sharlene Teefey, MD



Below: Fernando Gutierrez, MD (foreground, left) presents a noon conference in a reading room that was temporarily converted to a lecture hall.



Gutierrez prepares for morning rounds with Universidad Catolica residents and faculty.

whose specialty is chest radiology, found himself immersed in twelve-hour days of nonstop teaching. “I didn’t really know what to expect,” says Bhalla. “But Doctor Huete just threw me in; he introduced me to the faculty on a Monday morning and said, ‘Let’s get going.’”

Even with somewhat limited second-language skills on both sides of the lectern, Bhalla was able to communicate effectively. “The scientific language was the same. The same search patterns and the same diseases show up on the CT [*computed tomography*].” Aside from increased incidence of tuberculosis in Chile and a higher rate of

Chilean residents Alvaro Burdiles and Luis Muse during their rotation at MIR

gastric disease caused by dietary and smoking habits, United States and Chilean radiologic health issues are fairly similar. However, Bhalla discovered that the Dominican Spanish he picked up in New York City would not always serve him well, as when he learned that the word *guagua* does not mean *bus*, as he thought, but means *baby* in Chilean Spanish.

The highlight of Bhalla’s experience was the chance to practice the craft of teaching for hours every day. “The trip really cemented my desire to teach,” he says. “And much to my surprise, the teaching went both ways.” Bhalla found the Chilean residents to be outspoken participants in the conferences, responding to each case with an experience of their own and offering new perspectives.

The program’s impact

Teefey hopes the MIR Teach the Teachers program will have a broad and lasting impact on the Universidad Catolica training program and on radiology training throughout Chile. With an overwhelming clinical workload, faculty members at Universidad Catolica are eager to learn how to manage teaching and clinical duties more effectively. Chilean residents, future teachers themselves, have the most to gain from early exposure to the MIR faculty.

Just how does the Universidad Catolica radiology department compare to MIR? Mallinckrodt Institute’s 165 clinical staff (including faculty,



residents and fellows) see approximately 600,000 diagnostic radiology cases per year; Universidad Catolica's 18 faculty members see nearly 200,000 cases, equating to almost three times the average MIR caseload per clinician. The Chilean system takes some of this burden from the physicians by relying on highly-trained technologists, who receive five years to six years of training as compared to a typical two-year training period for technologists in the United States. Nonetheless, Universidad Catolica faculty have much less time to devote to teaching than do their United States counterparts.

Teefey and her colleagues are focused on a long-term relationship with Universidad Catolica. According to Huete, "what the faculty bring from MIR, they leave with us, such as an excellent background in organized teaching and conferences. But beyond the teaching methods, the materials are very helpful. With that we are building a teaching library, complete with case summaries and overheads," which can be a tremendous resource for an overtaxed faculty. Teefey is already planning for postgrant exchanges of faculty, perhaps recruiting retired radiologists to serve as visiting faculty at Universidad Catolica.

The other half of the United States-Chile exchange has been equally rewarding for Mallinckrodt Institute and Universidad Catolica participants. Four second-year and third-year Chilean residents have spent three months each at MIR so far. Alvaro Burdiles, MD, recently completed two months in mammography and one month in CT. If Burdiles reaches his goal of obtaining a fellowship in breast imaging, he will be the first fellowship-trained mammographer at the Universidad

Catolica. In his short time at MIR, Burdiles was impressed not only by the amount of information conveyed in the teaching program but also by the combination of efficiency and friendliness in faculty-resident interactions.

Burdiles says that his training at MIR "will make me a better radiologist, a better professional, and a better person. I've learned to make a good differential diagnosis, my accuracy is higher, and I am more confident. It has been a dream come true to study here."

Rewarding results

Teefey agrees that the program has already proven successful. "The one-on-one interactions have been so significant—it is a give-and-take on both sides." But does the program measure up to the more objective evaluation criteria imposed by the RSNA?

Early indications suggest a resounding yes. Participants at Universidad Catolica were given tests before and after the MIR program, requiring them to evaluate 20 radiology cases. The Chilean faculty's scores increased from 75 percent of cases correctly evaluated before the two-week program to 86.7 percent following. Second-year and third-year resident scores improved from below 50 percent on the pre-test to 80 percent on the post-test.

Similar results were achieved by the Universidad Catolica residents completing rotations at MIR. The first two residents to report results improved their accuracy from 55 percent or less to a range of 70 percent to 80 percent. Huete plans to continue assessment of the MIR-trained

FACTS AND FIGURES

- **Location:** Southern South America, between Argentina and Peru; borders the South Atlantic Ocean and the South Pacific Ocean.
- **Capital City:** Santiago
- **Population:** 15.5 million
- **Area:** 292,135 square miles, including Easter Island (Isla de Pascua) and Isla Sala y Gomez
- **Official language:** Spanish
- **Government:** Republic



faculty and residents at Universidad Catolica to measure the impact of the program over the long term.

Two other objectives of the program will take longer to evaluate but are of great importance to Teefey and her team. With so few radiologists in Chile, many areas of the country—which stretches 2,650 miles and encompasses a range of climates from arid desert to high mountain range—are underserved. Universidad Catolica trains several residents every year for the National Health Service. Those residents will be assigned to a more remote hospital and will be completely on their own with little opportunity to con-

Main campus of Universidad Catolica in Santiago—the hospital is located behind the university.

sult other radiologists. To date, six of the National Health Service residents have been taught by MIR faculty. Radiologists from other Central and South American countries are also being trained at Universidad Catolica, and Teefey hopes the program can strengthen the extremely limited resources of poorer countries such as Bolivia, Colombia, and Honduras.

Seeking an opportunity to make a difference in health care in less developed countries is second nature to MIR's dedicated Teach the Teachers team. Individually, they have worked in Micronesia, Zimbabwe, Ghana, and rural Puerto Rico. Building bridges to developing countries is especially important in today's volatile international environment,

says Teefey—a sentiment echoed by Washington University in St. Louis Chancellor Mark Wrighton. "Washington University is committed to creating new knowledge that benefits the entire world," he says. "Programs like Doctor Teefey's 'Teach the Teachers' program in Chile stem from our exceptional faculty and the exciting research that is being carried on both here in St. Louis and in locations throughout the world where our researchers work hand-in-hand with international colleagues. With our distinguished history and strong support from graduates and friends around the world, Washington University is poised to further increase our impact on our rapidly changing world." 

