



In Search of A Giving World

A star trek: Harvard surgical nurse, to world-class immunologist in Manhattan, to Baby Fae consultant in Loma Linda, to member of the University church.

by Gayle Saxby

ON THE LAST DAY OF 1940, SANDRA NEHLSSEN was born into a family that was rich in many ways, though her parents had little money. When she left home to begin nurse's training at Chicago's Augustana Hospital, she looked forward to visits home when she would sit again at her parents' feet, their knees touching her shoulders, and pour out her heart to them. They, in turn, would pour their hearts out to her. Always they would laugh together.

After finishing nurse's training, Sandra wanted to see a bit of the world. She went to the new state of Hawaii and found a job on the surgical floor at Queen's Hospital in Honolulu. One of her patients there, Wally Boquist, was a nuclear physicist who was testing bombs in the South Pacific. He suggested to Sandra that she move to Boston and look for work in a large teaching institution, but he also told her

that his employees in American Samoa were sick, and that no medical personnel lived there. Before three hours had passed, Sandra was aboard a plane bound for Samoa.

While there, Sandra learned that during World War II, American soldiers had brought a virus to the area that had caused the deaths of many of the native Polynesians. The heart valves of those who had survived the virus were badly deformed. Several physicians landed there two weeks into Sandra's stay, and with her as first surgical assistant, they performed closed-heart surgeries in a bombed-out army barracks.

After traveling a bit more, Sandra moved to Boston as Boquist had suggested. She signed up for an advanced nursing degree program at Boston University and landed a job as staff nurse in the operating room at Peter Bent Brigham Hospital. There she participated in the earliest open-heart surgeries performed, as well as in numerous kidney transplants. After each surgery, she would ask to be the patient's private duty intensive-care nurse. She worked two shifts four or five days a week; all the while

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she attended evening classes.

After Sandra had worked in Boston for two years, witnessing the evolution of transplantation and open-heart surgery, she learned that Frank Veith, the chief surgical resident at Brigham, was about to set up a transplantation unit and research laboratory in New York. She asked him if he would need an assistant there; he was not sure he would be able to pay one. She went to New York and worked for him without pay for two weeks, until he found money for her salary.

Sandra became the senior supervisor of the surgical research laboratory in the Cornell Division of Bellevue Hospital, where Veith taught her surgical procedure. In the laboratory she transplanted the kidneys and some 300 other organs of rats. Meanwhile, she was studying for a premedicine degree at New York University, but by the time she completed it, she knew she wanted to become a research scientist, not a physician. She also knew she wanted to work in the field of immunology, as people were doing transplants, but no one knew much about how to make those transplants work yet.

In April of 1964, Sandra fractured her back, hips, skull, and pelvis in a horseback riding accident. The orthopedic surgeon who treated her was about to take a sabbatical to study with Sir Peter Medawar, the Nobel laureate of 1960. Later, when he returned from his sabbatical, he urged Sandra to allow him to talk to Medawar about taking her on as his student. "He's the best in the world," he told her.

She laughed. "The Nobel laureate? Take on little Sandi Nehlsen? Ha!"

Take her on he did, however. She became Medawar's only pupil from 1968 to 1971 at the

National Institute for Medical Research near London. There she received her Doctor of Philosophy degree in Immunology.

While in England, Sandra was active in the United Church, just as she had been in the First Congregational and Lutheran churches while growing up. When she returned to the States, however, she stopped attending church. She believed profoundly, but something was missing in the churches she'd come to know.

In New York she did postdoctoral work at Sloan-Kettering Institute, and then, in 1978, became the director of the Transplantation Immunology Division of Montefiore Medical Center and Albert Einstein College of Medicine.

In June of 1984, Sandra spent three and a half weeks in China teaching the immunology of renal transplantation along with physicians and nurses from around the U.S. On this trip, Sandra met Ralph Harris from the Loma Linda University Medical Center in Loma Linda, California, who regaled her with tales of his

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On the flight back to the U.S., Harris also told Sandra, confidentially, that a pediatric cardiac surgeon at Loma Linda, Leonard Bailey, wanted to put a baboon heart into a human infant. Sandra had always believed that cross-species (xenograft) transplantation was the answer to the need for organ donors; she agreed to be a consultant on the case. She spent July and August in Loma Linda, then from New York continued to help the hospital prepare to perform xenograft surgery.

Late one October evening in 1984, Bailey

called Sandra from Loma Linda. "How are the experiments going?" he asked her. "Are they done?"

"Yes, we're all done now," she told him. "I have the results of the last test."

"Good," Bailey said, "because I have a baby and six baboons downstairs."

Sandra caught a flight from New York shortly after midnight that night, and, once in Loma Linda, began working around the clock preparing for the surgery. Six days later, Baby Fae received her new heart.

Throughout the process of preparing for the surgery, Sandra had felt in the Medical Center a warmth akin to that which she'd felt in her home while growing up. Also, Waldo Concepcion, a resident working on the Baby Fae case, had almost insisted that Sandra attend the Loma Linda University church with him, and when she did, she sensed she had found something she had been

looking for—a community of faith that embodied the kind of ideals she had always lived by. Her parents had not had much money when she was growing up, but they had always given of themselves liberally. They had taken in needy children, worked for their community,

taken under their wings friends of Sandra's who were from less loving homes, and even, when there was no money to buy fabric or clothes, torn up their own clothes to make outfits for Sandra and her sister.

Sandra, too, had lived her life this way, and thought it was the way the world ought to be. In Loma Linda she thought she had found a corner of the world that was that way. She was troubled, then, at the thought of leaving and going back to New York.

After the surgery, however, she was offered a job as director of the medical center's immunology center. Three months later, she resigned her position at Montefiore/Albert Einstein and took up her new duties at Loma Linda University. A while later, her husband Bud Cannarella, a professional photographer in New York, joined her and became a vice president of the Loma Linda University Medical Center.

Through a series of experiences, Sandra soon realized that the institution was not perfect. One physician informed her, rather ominously, that "The only thing worse than a non-Adventist is a rebel Adventist." The statement was a personal attack, but this didn't concern her as much as did the fact that it belied a "malignancy" within the institution.

On the other hand, Sandra reveled in the fact that working, worshiping, and caring for

one another were parts of a whole in her new community. Throughout her life she had been troubled by people who acknowledged their faith only on Sunday mornings. At Montefiore/Albert Einstein she had been enriched by the way friends and colleagues of the Jewish faith had

woven their belief into every aspect of their lives, and this had come close to what she wanted in a worshiping community. In Loma Linda, however, she felt even more that people there were trying to live all the messages of the Bible in everything they did. The value placed on giving through service to humanity, the inclusion of a healthful lifestyle, and a day of true rest each week—these factors all blended together to create for her the atmosphere she had known and sought since her childhood.

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In 1989, after several months of Bible studies, Bud and Sandra were baptized into the Seventh-day Adventist Church. Sandra continues her active and successful research at Loma Linda University Medical Center. She sees an integration of her religion with her furious pace of research and teaching (she sleeps only three to four hours a night.) "Maybe I think I'm indestructible," she says. "I certainly rest. I rest in different ways than other people, I guess. Sabbath is absolutely to me a blessing I needed because of the way I live. It truly is peaceful and I feel cleansed and refreshed and ready to go."

Ready to go, indeed. Sandra's 70 publications in scholarly journals included frontier work on immunosuppressants (the chemicals that keep surgical patients from rejecting transplanted organs) and the effects of moderate exercise on immune responses.

"I find that doing creative things is very satisfying and also very restful," she explains. "Sometimes it's creating an experiment in my head. Sometimes it's sitting down with clay and creating sculpture. And sometimes it's a walk through nature, because my sculpture is nature, too. . . . I also love music. I had a really hard time trying to decide among science and music and art. Every scientist I know is some-

how involved in art or music or both. I live all of them together. I never separate them. Never. I can't. And that's how I feel about religion."

Some of Sandra's research reflects her commitment to a wholistic view of life. When she left home, she always missed the fun, the loving, the touching, the hugs, the laughter. When she got into immunology in New York she was so convinced of the fact that there was a link between laughter and the immune response that she started fooling around (in an informal way, because she was doing mostly clinical work) in the lab. She and co-workers would watch films, and see what crying or laughing did to the immune response.

When Sandra went to Loma Linda, she met Lee Berk, Bill Eby, Stanley Tan, and others who had already started work on the effect of laughter. They sat down and had long discussions, including passages in the Bible that supported what they were doing. Then when they actually did the science, when they put numbers to it, they said, "We cannot deny this." Somebody cracks a joke, says something that makes him or her feel warm, and in five to 10 minutes, the response can be measured in real, hard, cold figures. She thinks it's "so neat" that the research is coming out of Loma Linda, that "we're" really leaders in the area.