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Putting Young People at the Heart of Science Diplomacy

Vaughan C. Turekian

THE year 2012 was a difficult one for young people around the world. A debt crisis and a weak global economy caused historically high levels of youth unemployment, accompanied by anger and hostility in parts of Europe. Across much of the Arab world, the youth, who had served as key protagonists in ushering in the Arab Spring just a year earlier, grew disillusioned by the slow pace of political and economic progress. Young people in such historically iconic places as Athens, Cairo, and Rome threw rocks and bottles to express deep dissatisfaction and hopelessness about their futures.

At the end of the year, a man gunned down twenty children (and six brave teachers and staff members) in Connecticut. The news brought a president to tears and filled a nation with profound grief and interminable questions concerning how to protect schoolchildren from such acts of violence.

The condition of our young people—how we feed, educate, train, and inspire them—will determine the future of our societies. Whether it is dealing with threatened lives or extinguished dreams, science and science diplomacy offer great promise in building a more secure future and providing hope for the next generation by reducing the vulnerability and suffering of children and young people around the world. While "science diplomacy" usually suggests images of high-level geopolitics involving Cold War superpowers and adversaries, in today's

world, the term is often best used to build links with friend and foe alike by addressing important societal challenges.

Among these, the challenges of the young are paramount. One of the most important roles for the international scientific endeavor is to facilitate the long-term well-being of the next generation, whether by creating technologies that spawn new industries and jobs for people looking for employment, by increasing food production and developing more efficient distribution to feed the hungry, or by finding new cures and treatments for the ill and injured.

I was recently directly exposed to children's vulnerabilities to health and the hope that an international science regime offers. My personal experience demonstrates the potential of science diplomacy. During the last week of the year, my son, Chip, was born with a congenital heart defect known as transposition of the great arteries, or TGA. The defect, in an otherwise healthy baby, caused non-oxygenated blood to circulate through his body. It was, in the words of his doctors, "not compatible with life." Just six days after birth, he underwent open-heart surgery that would provide the needed repair. Called the arterial switch, the surgery itself demonstrates the international nature of health research and its role in affecting the lives of the very young. TGA was first anatomically described and understood in the late eighteenth century by a Scottish scientist and pathologist who served as physician extraordinary to the British monarch, King George III. The surgery was first developed in Canada by William Mustard, a cardiac surgeon, and first performed successfully by Adib Domingos Jatene, a Brazilian surgeon of Lebanese ancestry.

But while the discovery and cure for Chip's disease highlight the successes of a global science and health enterprise, his survival also is a story about the advantages of being born in a country that has long attracted and welcomed the world's best talent. These educated and trained professionals have been drawn to the top American universities, medical centers, and laboratories looking for opportunities to practice and perfect their skills. By luck of birth, Chip arrived in a place where a British-trained Iranian-American neonatologist immediately diagnosed his condition and performed a rapid intervention to save his life, allowing the time needed for transport to one of the top medical and research facilities in the world, the Children's National Medical Center in Washington, DC.

Once there, Chip was cared for by a dedicated team of nurses, many of them from the Philippines, until an Australian-born and -trained surgeon and his team, which included medical personnel from India and China, could perform the fix. They used surgical techniques that are constantly being improved to ensure better outcomes based on research funded by the U.S. National Institutes of Health.

The Children's National Medical Center attracts not only top global talent, but also large investments of international funding—including a substantial gift from the government of Abu Dhabi—to catalyze cutting-edge research to save the lives of young people like my son. Chip is alive today and has a bright future owing to his birthplace. In the United States, outcomes like his have become the rule, not

the exception, because of investments in a transparent, merit-based science and technology system. These investments are what have given hope and opportunity to those in the United States by both birth and destination.

In the weeks since Chip was discharged, I have delved deeper to learn about the international footprint of the hospital that served as home for the first two weeks of his life. I learned that seven years ago, during the height of the U.S. war in Afghanistan, Richard Jonas (the Australian-born surgeon who performed the heart surgery on Chip) used his skills to save a young boy from a tribal region in Afghanistan. Umer Mohammed, who was suffering from a severe congenital heart defect, was brought to the United States for surgery. The Army medic who first came across the boy during his deployment in Afghanistan stated, “It’s sort of beyond words to bring a child from remote Afghanistan to Washington, D.C., to undergo open heart surgery. This effort doesn’t just help Mohammed, but it helps build good relationships with the people in that region, in Afghanistan.” Sometimes mending hearts can also help mend relationships.

Speaking at a college graduation, President John Kennedy told the young people who were entering a world facing the risks of nuclear war, “Our most basic common link is that we all inhabit this planet. We all breathe the same air. We all cherish our children’s future. And we are all mortal.” As today’s global foreign policy leaders confront the challenges of and threats to the young generation—who often must confront unemployment, sickness, violence, and despair—they should look to science and its potential to help find solutions. They will discover that when working for the hopes and aspirations of young people, good science can be good diplomacy. **SD**