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Science Training Encouraging Peace

Kim Kronenberg, Diane M. Robbins, and Allen Taylor

The inauguration of a new U.S. President in Washington offers hope for a fresh approach to the persistent Israeli-Palestinian crisis. But the Biden administration has so much on its plate that it is likely to take a slower approach than prior U.S. administrations to helping resolve this conflict.¹ In the absence of internationally sponsored peace talks or direct negotiations between the Palestinian and Israeli governments, it is the people who must build bridges and foster the foundation for an enduring peace. In this letter, we propose that person-to-person (P2P) science diplomacy can bring positive change, as illustrated by the work of an organization called STEP (Science Training Encouraging Peace).

While traditional science diplomacy engages at a government-to-government level, or via science advisers to governments, P2P organizations are generally non-governmental and work at the grassroots level to build bridges between people from societies in conflict. Using science as common ground, several P2P educational organizations working with young people in Israel and Palestine have proven successful in bridging societal and cultural divides. For example, in 2004, MEET

Kim Kronenberg, M.PH, is the Associate Director of STEP (Science Training Encouraging Peace) and an adjunct professor in Health Communication at Boston University (Boston, MA).

Dr. Diane M. Robins is a board member of STEP, Professor of Human Genetics at the University of Michigan Medical School (Ann Arbor, MI), and a AAAS Fellow.

Dr. Allen Taylor is the director of STEP, Professor of Nutrition, Development, Molecular and Chemical Biology, and Ophthalmology at Tufts University (Boston, MA), and a AAAS Fellow.

(Middle East Entrepreneurs of Tomorrow) was established in partnership with MIT (Massachusetts Institute of Technology), to train high school students from Israel and the West Bank in computer science, entrepreneurship, and leadership, meeting weekly over three years. Another well-established organization, the Arava Institute for Environmental Studies, enrolls college-age and graduate students from primarily Jordan, Palestine, and Israel into programs that teach them to solve pressing environmental challenges while forming friendships. Arava students live together for several weeks, while studying environmental sciences and peacebuilding.

STEP is a newer P2P organization that pairs young Israeli and Palestinian science scholars and helps fund the full length of their graduate education at universities in Israel. STEP focuses on scientific problems that affect these societies across borders such as infectious diseases (e.g., COVID-19), complex health problems (e.g., diabetes and cancer), water sanitation, desert agriculture, and emergency preparedness. STEP's focus on students with limited access to such advanced training helps reduce educational inequities that impede personal and societal growth.

Background

Early in the coronavirus pandemic, there was unprecedented cooperation between Israel and Palestine to reduce and mitigate virus transmission. Israel provided financial support and protective equipment to the Palestinian Authority, Palestinians crossing the border into Israel were tested for the virus, and Palestinian doctors worked alongside Israeli doctors in Israel's hospitals.² But soon thereafter, while COVID-19 cases surged, political events and maneuvers resulted in a refusal of the sides to engage.³ COVID-19 vaccination has been confounded by disagreements over which country or entity would be legally responsible for disseminating vaccines to the Palestinians in the West Bank and Gaza. Despite the need for cooperation, government diplomacy is failing, just as it has failed to deliver a peaceful end to the decades-old conflict. This is where person-to-person (P2P) science diplomacy, such as what is practiced by MEET, Arava, and STEP, has great potential for more success.

P2P programs have proven effective adjuncts to diminishing and ending conflict in many societies, most notably in Ireland. A bill modeled after the Fund for Ireland, called the Nita M. Lowey Middle East Partnership for Peace Act (MEPPA), was signed into law in July 2020. MEPPA provides \$250 million dollars for peacebuilding between Israelis and Palestinians.⁴ This bill acknowledges the

value of P2P programs and their ability to improve relations between Israelis and Palestinians.

This was the mission Dr. Allen Taylor had in mind when he created STEP. Dr. Taylor, Director of the Laboratory for Nutrition and Vision Research at Tufts University in Boston and a AAAS Fellow, based STEP on his graduate school experience of cooperative science, his time at an Israeli university as a Fulbright Senior Scholar, and his decades-long directorship of a medical research laboratory. He started STEP with the active endorsement of the presidents of three universities: Ben Gurion University (Negev, Israel), Al-Quds University (West Bank), and Tufts University (Boston, U.S.), where the administration of STEP is located. The graduate education currently takes place at three universities in Israel. Basing the program in the general region enables the scholars, after graduation, to stay in their home communities with their families where they can demonstrate the benefits of their education and of cooperation with their neighbors. The Israeli location of the STEP program is also necessary at this time because Israeli travel to the West Bank is restricted and Palestinian universities cannot formally enroll Israeli students. In addition, the high caliber of Israeli education is attractive to Israelis and Palestinians alike, while in the West Bank and Gaza, advanced education and training are limited for many medical and scientific disciplines.⁵ Enthusiasm for STEP at participating universities is high, with each academic institution matching STEP contributions dollar for dollar, thus doubling the reach of STEP.

P2P programs differ in their design and in their target populations. While programs such as MEET and Arava train groups of students together in classrooms, STEP focuses on pairs of students. STEP fellows must be willing to work closely on a project with a partner (one Israeli and one Palestinian per pair), meeting at least weekly, often daily, and they must continue working together for the full length of their graduate studies. STEP's target population is graduate students, an age group selected for several reasons. In Israel, the required army service means that students are older when they start graduate education. And many of the Palestinians who participate as STEP fellows are already professionals. This more mature age group is already committed to overcoming barriers and is beginning to assume leadership roles in their professions and in their communities, where they can also provide expertise to governments and medical professionals and act as bridges between their societies. As a leader, professional, and educator, each STEP fellow has the capacity to improve the lives of dozens or hundreds of local citizens.

MEET, Arava, and STEP are all designed to address academic, cultural, and societal challenges facing their target communities. For STEP, faculty from participating institutions help address these challenges by serving as academic and personal advisers to the STEP pair. STEP also employs a regional representative to

recruit applicants and help those with different cultural and academic backgrounds, especially Palestinians, who may be unfamiliar with and intimidated by the Israeli academic system. All three of these P2P programs also try to ensure gender parity. This semester, for example, seven out of ten STEP fellows are women. The support of women in science is particularly important in religious communities in Israel and Palestine where women have narrowly prescribed roles. STEP, with its university partners, has also offered childcare support for female students, and when needed, students can access extra academic courses, or on-campus housing to mitigate the stress of daily cross-border commutes.

Results

P2P science diplomacy programs succeed in advancing science, supporting individual careers, and training cross-cultural ambassadors. MEET alumni, for example, matriculate into science programs at major global universities and show ongoing interest in working with people from the other nationalities. Likewise, many Arava alumni engage in outreach programs that enhance Jewish-Arab networking in the Middle East while also pursuing careers in environmental science. STEP is a smaller and newer program currently supporting five pairs of STEP fellows annually; thirteen master's and doctoral degrees have already been completed with multi-year funding. But the impact of STEP alumni is already far-reaching. STEP fellows have published in major scientific journals, present at international conferences, and are pursuing careers as doctors, nurses, university professors, information technology experts, high school teachers, dentists, forensic pathologists, and researchers. Their professional skills have also enabled them to serve their communities during the coronavirus pandemic. For example, STEP fellows and mentors have worked as emergency responders or retooled their labs for coronavirus testing. In addition, STEP alumni and faculty are serving as COVID-19 researchers and as government spokespersons and advisors, many advocating for equitable vaccine distribution to Israelis and Palestinians alike, proving that those who have worked together and are committed to each other's humanity are the most likely to advocate for and influence policy change to benefit both societies.

Future directions

There are many challenges to sustain and grow programs such as MEET, Arava, and STEP. The volatile politics in the region means that programs leaders must always have their ears to the ground and be flexible. Border crossings and visas remain difficult for Palestinian students, problems that are exacerbated by COVID-19. Moreover, students may be pressured by their families and communities not to work with the “enemy.”

But perhaps the greatest challenge P2P programs face is financial. STEP donors are often taken aback at the cost of higher education and question the value of their donations, even though in Israel, the cost of graduate education at about \$12,000 per person per year is roughly 20% of what it is the U.S. But the cost-effectiveness of education is clear, especially when conducted on the ground, on a P2P basis. Each graduate of these programs reaches dozens if not thousands of people on both sides of the border, a multiplier effect that shows that the expense of a graduate education is far more cost-effective at fostering coexistence as compared to the cost of continued conflict.

In conclusion, the decades of conflict between Israelis and Palestinians, abetted by government responses and inaction, have resulted in Israelis and Palestinians only seeing each other as threats. P2P models of science diplomacy function at the grassroots level, without direct government involvement, advancing science while building relationships that lay the groundwork for a lasting peace. **SD**

Disclaimer

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Endnotes

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