

## IT'S ALL ABOUT RELATIONSHIPS

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In 1952, the Air Force Office of Scientific Research (AFOSR) was established to manage the basic research investment of the US Air Force. To be

perfectly clear, basic research is the fundamental understanding of science that eventually, usually in the far term, enhances the optimization of applied research and technology development. Most basic research is focused purely on the science, and not the potential array of future applications. Most basic research funded by AFOSR is done by universities. It is peer-reviewed, presented, published, and shared world-wide in the public domain. Basic research

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Dr. Mark S. Maurice received his Bachelor of Mechanical Engineering (1982), M.S. in Aerospace Engineering (1986), and Ph.D. in Aerospace Engineering (1992) all from the University of Dayton.

From 1980 to 1993, Mark worked in the Aeromechanics Division of the Air Force Research Laboratory (AFRL) Air Vehicles Directorate at Wright-Patterson AFB, OH, designing wind tunnel and water tunnel components, and developing non-intrusive diagnostics for a range of subsonic, supersonic, and hypersonic facilities. In 1993, he became the Chief of Aeronautical Engineering at the European Office of Aerospace Research and Development (EOARD), a detachment of the Air Force Office of Scientific Research (AFOSR), in London, UK. In this capacity he served as a scientific liaison to seek out new collaborative opportunities between AFRL and those doing similar research in Europe, Africa, the Middle East, and the Former Soviet Union. In 1997, Mark returned to AFRL for a two-year assignment as the Assistant to the Chief Scientist for the Air Vehicles Directorate, to develop and implement technical corporate research strategy in aeromechanics, flight control, structures, vehicle subsystems, and multidisciplinary integration technologies.

Presently, Mark is Director of the International Office at AFOSR in Arlington, VA. This office works together with AFOSR Detachments in London, Tokyo, and Santiago to discover world-class basic research of interest to AFRL, and to develop collaborative relationships between AFOSR funded researchers in the U.S., and researchers world-wide.

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is performed world-wide, and AFOSR funded research is significantly enhanced by the interactions of world-class scientists sharing ideas and collaborating with each other.

To facilitate this interaction, AFOSR established the European Office of Aerospace Research and Development (EOARD), now located in London, UK. EOARD discovers research opportunities, sponsors overseas workshops and conferences, sponsors overseas research grants, and brings overseas scientists together with their US counterparts. When the office was established in 1952, the Iron Curtain was firmly in place. Consequently, EOARD activity was almost entirely confined to Western Europe and Israel for the remainder of the Cold War. Nonetheless, by the early 1960's EOARD managed a portfolio of more than 450 research grants within its area of responsibility (AOR).

Working with close Allies that are culturally similar is not difficult. Throughout the 1980's, my first decade as an Air Force researcher, EOARD's reports were circulated widely, offering countless opportunities for scientific collaboration in an environment with a clear view of who our common friends were, and who our potential adversaries were.

By the early 1990's, the world was a different place. For the first-time, EOARD had potential access to considerable scientific talent in Eastern Europe, and throughout the Former Soviet Union (FSU). At the same time, AFOSR was opening the Asian Office of Aerospace Research and Development (AOARD) in Tokyo, Japan to increase collaboration in the Asian/Australian region, where S&T was growing at a significant pace.

Two very different regions of the world, with different cultures, economies, and politics proved a single lesson: that it's all about relationships.

The collapse of the Iron Curtain proved that basic research has no political bounds. EOARD resources once dedicated to Western Europe alone were now spread almost world-wide between the two overseas offices, and EOARD was inundated with requests to send Eastern European and FSU scientists to visit AF research locations in the US, and the scientists in the US were inundated with invitations to visit research facilities in Eastern Europe and the FSU. Close, personal friendships developed so quickly, that it was as if the Cold War never happened. As far as bringing this newly available science into the AFOSR portfolio, significant cultural differences were trumped by economic necessity. Nearly all of the currencies in Eastern Europe and the FSU were inflating rapidly, and government funding to research institutes in those countries was declining rapidly in real terms. Consequently, the survival of many institutes depended on them finding outside resources. Incredibly, these institutes managed to adapt to Western contracting and business practices almost immediately, and attracted grants and contracts from EOARD, as well as others world-wide. Just a few of these hurdles EOARD dealt with at the time included poor connectivity between phone and fax systems, communicating and reporting in English, marked differences between content and expectations of research proposals and conference presentations, incompatibilities between banking systems, and the legalese of US government international contracting.

Despite the challenges, friendships translated to patience, and countless relationships that were developed then, continue to exist today. At a recent Russian/AFOSR workshop in St. Petersburg, Russia, a researcher attending from Moscow explained how fifteen years ago,

small EOARD grants allowed the people on his research team to be paid \$100/month in addition to the \$30/month that they were paid by their institute. Consequently, he credits EOARD with saving his laboratory and retaining his staff. Today, his current EOARD grant still pays \$100/month to each person on his team, which is actually very low compared to his institute salary. (Moscow is now ahead of Tokyo as the world's most expensive city). Nevertheless, his team is very happy to continue to meet with their friends and counterparts in the US. They will likely continue to share ideas, collaborate, and publish together for years to come.

In Asia, the story was very different, but the outcome was the same. AOARD was established in 1992, but unlike Eastern Europe and the FSU at the time, well developed Asian nations were not attracted to AOARD's small research grants simply for the money. Consequently, for several years, AOARD worked to develop relationships in Asia, and the portfolio of activities very slowly grew. Then, around the year 2000, AOARD found that supporting workshops and initiatives that bring US and Asian researchers together on a recurring, regular basis for long-term collaboration through joint research grants develops close relationships more quickly, and is highly successful. AOARD activity rose slowly, but exponentially over the past 18 years, and the total activity of the office now exceeds the activity of EOARD.

Consequently, the strategy to leverage world-class research world-wide is simple. It's all about building relationships. If you build a good relationship, you automatically build international good will, strengthen partnerships, promote interoperability, avoid technological surprise, and perhaps most importantly, accelerate S&T achievement.

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