Bridging Innovation Interview: Nick Rotker

Looking for an example of leveraging networks to make positive change? Look no further than Massachusetts' very own Nick Rotker, Bridging Innovation lead for MassChallenge Rhode Island partnership and current Department Manager of the newly formed Underwater and Acoustic System Department at The MITRE Corporation.

A musician, husband, father, Electrical Engineer, and part time LinkedIn enthusiast, Nick demonstrates that being personable and professional to those around you is a key to true success.

Educational Journey and Career Path

Nick attended the University of Vermont for his undergraduate degree. He intended to study music, though with a little encouragement from his parents, left with a degree in Electrical Engineering. He continued his studies at Tufts University, receiving a master's degree in Electrical Engineering. During this time, he interned with MITRE's Electronic Systems Innovation Center where he had planned on staying upon graduation.

Finding a Niche and Running with It

Due to hiring restrictions caused by the 2008 financial crisis, MITRE was unable to offer Nick a full-time position upon graduating from Tufts. Nick left MITRE to work for a small sonar company in New Hampshire leading their acoustic signal processing algorithm development. Regarding his career growth at MITRE, Nick stated that "Being forced to leave MITRE was the best thing that ever happened to me". Though feeling like he got into underwater work by accident, Nick entered a new domain that paved the way for his return to MITRE several years later. Armed with new experience in underwater and acoustic systems, he set out to bring this capability to MITRE. But first he started in the Air Force Division, focusing on tracking and fusion for the company's experimental radar. After several years, he saw his opening to conduct undersea research when he was awarded his first research project in the MITRE Innovation Program (MIP) to adapt the radar fusion work to the maritime domain.

Creating a Work Program from Scratch (Flexibility is Key…)

At this point, Nick was the "new kid in town", and getting into the Navy program didn't come easy. He set out to develop friendships, make inroads, and create "small wins" until relationships were established. He continued gaining traction in the MIP, giving him the flexibility to attend conferences and other events, "showing up" until industry stakeholders expected to see MITRE. MITRE "hadn't had a seat at the table", but he "pounded the pavement" while producing research. Flexibility from MIP was key, allowing him to move quickly, changing directions on what they were working on. "Having flexibility is a positive", he said. "We wouldn't have this department in MITRE Labs today if it wasn't for that ability to make those decisions quickly. If something came up, *'Be in DC tomorrow!'*, for example, having a lack of flexibility would have made this impossible." This type of thinking feeds into the whole innovation ecosystem.

It's all about Networking

When asked how to scale or replicate the culture he has created, Nick responded with one word: networking. "It is all about networking" he said. "Being Persistent; you are going to get told '*no*' a lot. You have to just keep moving forward and find those pathways…If you hit a wall in something you are trying to do, you can turn to someone else that has the key to that door and it is then opened."

One way Nick exemplifies this is by always talking with the person sitting next to him on an airplane. "I could name 10 impactful connections I now have by talking to those people", he said. On one trip to D.C., an employee from the Naval Undersea Warfare Center (NUWC) sat next to him. A relationship was formed and has grown over the years to the point where MITRE and NUWC regularly work together on various projects.

Partnerships and Teaming

Nick believes in the power of learning and leveraging those around you. "If your skills are not strong in one area", he said, "then by partnering or teaming with someone that has those skills, you will get there quickly. By finding those people that complement our skills, it can enable progress. It takes a lot of self-awareness to find those self-deficiencies. Be aware of your limitations."

Nick acknowledged that it isn't always easy to carve a new path or enter a new business opportunity. "Sometimes you will have to make sacrifices – work with someone or do something that isn't on the critical path – to get there." At MITRE, for example, Nick would often help out fellow staff on various projects across multiple sponsors which might have been perceived as delaying his push for underwater work. The end result however was growing his internal MITRE network and making those connections that he could later leverage to help him with his long term vision of growing an undersea work program and departmet.

Enter Stage Left: Bridging Innovation

Nick had "peripherally met Russ [Graves] a few times and worked with a few folks who had worked with Russ at MassRobotics. Russ was working with an "undersea" company and needed some SMEs to evaluate the validity of their work. Nick obliged and gave his honest report to Russ. This led to Nick becoming Russ' "go-to guy for anything Maritime", and he began participating with MassChallenge and MassRobotics in 2015.

When MassChallenge opened their Rhode Island operations, Nick offered to be MITRE's "lead". He and his wife were already living in Rhode Island as she completed her medical residency, so it seemed like a good fit. Though MassChallenge had already selected their annual cohort by the time Nick became involved, he began developing a relationship with the Director Hope Hopkins. Given the large presence of Navy work and companies in the region he suggested that they "copy what was done for the Safety and Security Track" in MassChallenge Boston and apply it to the Naval industry in Rhode Island. "That

was a huge opportunity for both MassChallenge and the Navy", Nick said. He brought together Navy and industry partners to form an advisory counsel to the BlueTech track, with last year being the pilot. Nick is now working with them to expand that program beyond pilot; bringing in more Navy sponsors and collaboration with the growing NavalX Techbridges located in the area. Nick is trying to replicate the success the Air Force had with their "safety and security" track by replicating it for the Navy and after last year's pilot program, he is working to make that a permanent fixture.

> *"Bridging Innovation has shown that no one company can solve these things on their own," Nick said. "How might we push the boundaries or get exponential improvement by leveraging multiple diverse companies?"*

Next on the Horizon

At MITRE, Nick is currently leading the growth of MITRE's undersea work program along with his partners across the corporation to enable a diverse sponsor base. He is growing his team and testing/prototyping capabilities to position MITRE to be a leader in the undersea and acoustic community going forward. They are currently exploring the repurposing of a large water tank on the Bedford campus – formally called "the Ice Chest" – to build a functioning test facility for undersea, acoustic, and Unmanned Undersea Vehicle (UUV) research. With the ultimate goal of having an open facility that fosters growth, collaboration, and innovation in the maritime sector. With that resource, just watch his network grow.