

EMERGING LEADERS

Engineering Team, Pratt & Whitney | BY ALISON BUTLER

BUILDING A TEAM TO GO BEYOND



A team of young engineers at Pratt & Whitney's Advanced Coatings Technologies (ACT) facility in Middletown, New York is finding creative and innovative solutions to produce critical jet engine components more effectively and efficiently.

Worldwide, Pratt & Whitney is a leader in the design, manufacture and service of aircraft engines and auxiliary power units. They produce large commercial engines that power nearly 30 percent of the world's mainline passenger aircraft fleet. Their military engines are used by 34 armed forces throughout the world. At the company's ACT facility, many critical components are covered with a specialized coating that increases the life span of the part and enables it to function in the extremely harsh and hot conditions that are inside a jet engine. These parts, which are produced at other sites, vary greatly in size and function, and once coated move on to be assembled at yet another location.

ACT is a critical contributor to Pratt & Whitney's jet engine production supply chain; to ensure that components are of the highest quality and produced in the most effective manner, the company employs a team of engineers to continuously monitor, review and improve the process. The team is made up of five individuals who work in coordination with product teams, at other Pratt & Whitney locations, to support the design of parts and coordinate the manufacturing process including the coating treatment which will eventually be applied to the engine piece. This process includes a manufacturing readiness review, which evaluates a part's performance - how can this portion be designed to be more "manufacturable," what is the capacity, capability, and yield quality standard for this part, and what is the engine function standard for this item? Tens of thousands of parts go through the Middletown facility each month. This team of engineers needs to understand what each process requires, and if there are options in the materials

that can be used which is the best choice for the coating.

Members of the team come from a variety of backgrounds and bring different experiences and skill sets.

Scott Elliott is the Engineering Manager who put together the team that tackles these challenges. He has been with Pratt & Whitney for 21 years and oversees not only this team, but five other engineers and six engineering technicians. ACT was started in 1992 as a joint venture with another local aerospace company. In 2013, ACT became a wholly owned subsidiary of Pratt & Whitney, and its second expansion in 10 years began. The organization has grown from 75 employees to over 230. Elliott was brought in from a facility in Connecticut to lead the engineering team during this period of rapid growth.

Chelsea Travers, Staff Manufacturing Engineer, has been with Pratt & Whitney for eight years, and at the ACT facility in Middletown for five of them. She received her undergraduate degree from Worcester Polytechnic Institute in Massachusetts and worked at Pratt & Whitney's East Hartford, Connecticut, facility before coming to ACT.

Peter Hemme, Senior Manufacturing Engineer, has been with Pratt & Whitney for three years and previously worked for another local aerospace company. Hemme received his Bachelor of Engineering degree from Bucknell University in Pennsylvania. A family friend told him about the opening at Pratt & Whitney right before their expansion.

Tim Quinn, Senior Manufacturing Engineer, has been there three years but has many more years of experience working at other area manufacturers including hands-on experience with machine



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maintenance, and Health & Safety. Quinn did his undergraduate degree at Rochester Institute of Technology (RIT) in western New York and his graduate degree at Clarkson University's Beacon Institute. A friend from RIT told him about the opening at Pratt & Whitney.

Monal Amin, Senior Manufacturing Engineer, specializes in ACT's latest generation plasma coating and comes from Kenya where she worked with fiberglass manufacturing. Amin completed her undergraduate degree at Boston University and has been with the company over three years now.

"I like working at Pratt & Whitney as they place a strong emphasis on innovation because 'going beyond' is not only about furthering the aviation industry,

it's about allowing each employee to feel empowered to make decisions in order to solve complex problems."

In putting the team together Elliott looked for a variety of things. He wanted a diversity of experiences and expertise, and he wanted people who had strong individual engineering skills but who also could work well in a group. "I think this group is definitely greater

than the sum of its parts," Elliott said. "And that's saying a lot because it is made up of some strong and talented parts." He adds that he looks for creativity when scouting engineers because dealing with coatings is complicated and nuanced. "Unlike machining processes, you can't directly measure the output. There is a lot of problem solving that happens to understand root causes. When interviewing I would say, "Tell me about



From left to right: Chelsea Travers, Peter Hemme, Tim Quinn, Scott Elliott, and Monal Amin

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a time you had to solve a problem you didn't know the answer to." Much of what they are working on here hasn't been taught in schools because it is being developed right here, right now. This is the leading edge technology.

Since the facility is still expanding the team is able to actively participate in how the production line is set up. "We were able to

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set up and layout the building we are in," said Travers. "We use Pratt & Whitney's Achieving Competitive Excellence, or ACE for short, system of process certification which adds an efficiency to the process with quality control and product control."

"We have to be ready for the next generation of machines, what that process will look like, while still looking at the machines we have now and reassessing the processes to see if we can get more out of them. We try to maximize utility with tooling designing to get the most out of the machines we have," explains Quinn.

ACT has recently added another building for additional capacity and the latest technologies. Because the team is growing so rapidly it is important that the team members are self-motivated and that they are able to get their hands on the equipment to figure out what works and what doesn't. Elliott explains, "People have assignments here where they can actually work on the machines themselves which speeds up the process. It's a longer learning curve when you can't touch a machine that you are designing a process for."

Amin's specialty is the latest plasma spray process which is just taking off. "Technological advancement is part of our culture." Monal explained, "I joined the company when this new equipment had just been installed, it has been a satisfying journey from getting the equipment and cell up and running to coating production hardware today."

Each team member has or is pursuing an advanced degree, some are in engineering, but some are MBA's. Pratt & Whitney encourages this with their Employee Scholar program that contributes towards graduate school with paid time off for homework and tests, something appreciated by all the team members. The company is also open to new ideas that this advanced learning leads to. Quinn explains, "Pratt & Whitney provides me with the time and capital to learn and drive change, as well as the support to implement the new ideas."



Alison Butler is the Director of Member Engagement, The Council of Industry.



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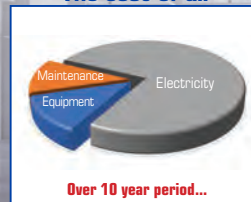


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