

## CAREER STORIES

# How Networking and Internship Experience Helped This Mechanical Engineer Land Her Dream Job

by *The Muse Editor*



*Emilie Murphy, a responsible engineer lead at Northrop Grumman.*

From a young age, Emilie Murphy was fascinated by all things aviation—when she looked up at planes in the sky, she'd think about what it took to build such a machine. “I found it truly incredible to see these giant hunks of metal effortlessly take off and soar into the sky, all the while carrying thousands of pounds of passengers or cargo,” she says. “No matter how many times I see it, it never gets old!”

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This passion and curiosity drove Murphy to take on various college internships in aerospace, including two at [Northrop Grumman](#), a company that aims to solve tough problems in space, aeronautics, defense, and cyberspace. When she finished school, she accepted a mechanical engineering role at the company, where she's now living her dream of working on the cutting edge of aviation development.

“Northrop Grumman has also provided me the opportunity to work in the defense industry, which allows me to feel as though I'm doing my small part to support our country,” she says.

Here, Murphy shares some of the exciting projects she's working on, how Northrop Grumman helps young talent learn and grow, and advice for other women interested in working in aerospace.

## Tell us about your career journey, and what led you to your job at Northrop Grumman.

I attended Boise State University, where I obtained a bachelor of science in mechanical engineering with a minor in computer science and applied mathematics. The summer after my sophomore year of college, I began my first internship in commercial aerospace, designing and creating the engineering drawings for modifications to private aircraft. I was at that internship for two years working on a team of three engineers, which really showed me what it would be like to be an engineer in aerospace.

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What it would be like to be an engineer in aerospace.

Throughout my college experience, I was very involved with my university's section of the Society of Women Engineers (SWE), and became president during my senior year. Participating in the SWE national conference provided me the opportunity to meet with recruiters and be interviewed on the spot by multiple aerospace industry leaders. At a SWE conference, I was selected for an internship with Northrop Grumman, working on the Minuteman III, an intercontinental ballistic missile, out of Hill Air Force Base in Utah.

This experience and support from my managers led directly into a second internship with Northrop Grumman, working in defense aerospace in Palmdale, CA. I completed this summer internship while I was finishing my coursework for a master's in mechanical engineering. Once I completed my thesis in dynamic modeling and graduated with my new degree, I started a full-time position with Northrop Grumman back in Palmdale as a responsible engineer, doing what I truly consider to be my dream job.

## **What are you responsible for in your role?**

As the title of responsible engineer lead suggests, there is a lot that I am responsible for in my role in the field of defense aerospace. I act as the subject-matter expert of every aspect of my system, from component production, installation, and system operation to troubleshooting and data analysis. As the lead responsible engineer of my system, I identify system improvements, manage all development projects, interface directly with the customer, and utilize agile methodologies to manage all team tasking.

Another important component of my role is acting as the lead of our supplier management team. In this capacity, I represent Northrop Grumman to the supplier, guide and shape all system development, and ensure the supplier's deliverables are meeting the needs and goals of the program.

## **What are you working on right now that excites or inspires you?**

I am working on multiple projects right now that I am very excited about. One notable project is a system software update. Countless hours have gone into determining exactly what improvements would provide the most benefit, guiding and shaping supplier development, and completing all program engineering updates in preparation for implementation. This update will increase our system functionality and reliability to allow the program to better meet the goals of the customer.

In addition to these kinds of projects, our team is working to develop automated analysis tools. This type of tool development will increase our responsiveness when we are called upon to find a solution to a problem expediently.

## **How does Northrop Grumman help nurture and develop young talent?**

I have been truly impressed with Northrop Grumman's commitment to develop and mature talent from within. This has been evident to me both as an intern and since I started full time. As an intern, I had the opportunity to work in multiple sectors over two years: defense systems, working with intercontinental ballistic missiles, and aeronautics systems. I was given opportunities to work on diverse projects, from Failure Mode Effects and Criticality Analysis (FMECA) to 3D Computer-Aided Design (CAD) to systems analysis.

Regardless of the program I was working on, I was continuously asked about my interests and career goals. This allowed managers to provide me with tasks to help me gain experience and connect me with other professionals in my areas of interest to grow my network. Therefore, I was perfectly positioned to step into my dream job.

## **What has been the key to your success working in an industry where women are often underrepresented?**

Working really hard, communicating well, and being willing to address tough problems head-on to find the best solution. Because women are underrepresented in engineering, it can often make us feel intimidated and lose confidence in our abilities. For instance, during my first internship, I would enter the airplane hangar and never see another woman throughout

the rest of my day. This was intimidating at first and made me question if I had made the right choice pursuing this line of work. After gaining some experience and becoming more confident in my skills, I have never let these doubts affect my work again.

## What advice do you have for women looking to pursue a career in engineering?

Do it! Keep pursuing that thing you are passionate about and never take “no” for an answer. As women, we have a tendency to quickly count ourselves out and think, “I have most of those qualifications, but I don’t know if I could actually be successful at that job.” It’s important to be confident in your abilities and realize that if that next step you are considering is 100% in your comfort zone, you probably aren’t reaching far enough. Rather, you’re preventing yourself from [taking advantage of] opportunities to learn and grow in your abilities. By leaning into your passion and the skills and experiences that make you unique, you make yourself invaluable to any team you work with.

## How important is internship experience in engineering? How did it benefit you in your career?

I believe internship experience, or lab experience for that matter, is very important in engineering. I found that once I began interning, I was directly applying things I was learning in the classroom to the real world. This not only helped me retain information better, but also fueled my desire to continue learning. Spending those long hours studying became very worthwhile, because I knew I could turn around and use that information in a practical way.

## What does it take to be successful as an engineer at Northrop Grumman?

Being a self-starter. There are so many opportunities to take on new and exciting problems that if you seek them out and take on the responsibility, you will be supported by leadership. So much of the time, we are working to find solutions for problems that have never been solved before. Being a self-starter will provide you with the motivation to do the research and pursue the trial-and-error approach necessary to reach a viable solution.

I am continuously amazed when I go to leadership and say, “What if we did this?” and am met with comments like, “That’s an interesting idea! Let’s do some more research and utilize our technical resources to determine if we can make that happen.” Never have I been told to stick to my lane, doing only the tasks that have been assigned to me.

## What advice do you have for women looking to follow a similar career path as yours?

Take a moment to think about the absolute coolest job you can think of, or the most interesting field you can think of. Got it? Now go for it! I have found that if you just continue to take steps, large or small, in the direction of what you are most passionate about, you will be amazed at what opportunities present themselves.

However, all the opportunities in the world will do you no good if you don’t have the courage to leverage them. It can be very helpful to find mentors, both male and female, who can provide you with insight into their career triumphs and pitfalls, connect you with people in their network, and encourage you to make a leap into a new and exciting role. If you are willing to put in some hard work and are tenacious about your passions, you can achieve anything you set your mind to.



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