

Brian Backer

At Sterling, our highly experienced team members and their passion for what they do are central to who we are. This month, we spoke with Brian Backer, Chemical Research and Development (CR&D) Scientist, to learn more about his role in chemical synthesis and Sterling's new spray drying technology.

Can you describe your background and current role at Sterling?

My educational background was mainly focused on biology. I received my Bachelor of Science at St. Cloud State University in Biomedical Sciences. There, I started working on synthesis for research projects, which laid the ground work for my current role in chemical synthesis. After receiving my B.S., I attended Washington State University for graduate school, where I continued to focus predominantly on chemical biology, but also began to become more involved with medicinal chemistry. While there, I worked on a variety of projects involving vaccine development, cell imaging, pro-drug linker development, and cell culture methods for cancer environments.

For my post-doctoral research, I moved to Mississippi where I focused on bioanalytical studies and pharmacokinetics, specifically working on antidotes for toxicity and mass causality with chemical warfare agents. In August 2021, I moved to Germantown to join the Sterling team, where my focus is on chemical synthesis of APIs. I had always retained an interest in synthesis, and I like how this role enables me to apply a breadth of knowledge from my background. My key objective in my role is to take a process that is super robust and install safety nets to transform it into something that delivers consistent, high-quality results.

What types of projects do you work on in your role at Sterling?

I work on a diverse range of projects across Sterling, so my day-to-day can look quite different. I often work with different types of compounds to achieve a specific structure or form. This can vary a lot, as I work with compounds intended to target different types of diseases, and I must then look at the subtleties of data to ensure the best approach. I also work on a formulation process, where my goal is to streamline a customer's historical processes by implementing a new instrument or approach to achieve the same specification or better. Another large project I'm involved with at Sterling requires frequent collaboration across our US and UK sites, as we can accomplish more when we are connected together and regularly collaborating rather than working in silos.



Fast Facts

ROLE

Chemical Research & Development Scientist I

JOINED STERLING

August 2021

EDUCATION

PhD, Washington State University

SPECIALISATIONS

Medicinal chemistry, research and development, spray drying, API synthesis

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Can you tell us more about the spray drying project?

Since implementing the spray dryer at Sterling, our goal has been to understand how we can harness it to produce higher yield, consistency and efficiency relative to customer's historical processes. Because it is a relatively new process within the industry, at this point we are focusing more on developing and implementation of it, in other words figuring out how it works. It is possible that it could have regulatory and compliance implications down the road.

There are a variety of potential use cases for spray drying, including a lot of interesting solid state chemistry work. It enables us to gain a greater understanding of mixtures and each component within them. By controlling droplet size you gain control of the material and are able to control the morphology. Looking toward the future, we are hoping to utilise spray drying on a larger scale, purchasing additional equipment that will enable us to do cGMP processing work for customers.

How do you collaborate with customers in your role?

The client interactions I have are absolutely fantastic. Because partnership is ingrained in our culture, there is a clear understanding across our customers that our Sterling team is an extension of their own. We all take the time to understand the obstacles in a project, and work together to figure out how to overcome them.

Given that I work on a range of projects, the ways in which I collaborate with customers also varies. A lot of the time, customers come in with an older process they want to make more robust and consistent. Other times, customers come to us with specific ideas of the product they want to achieve, but require our assistance to produce it. I also work with those who are interested in comparing their older equipment to more modern, specialised instruments that can improve the process. I really enjoy the variety of projects I work on, and the variety of customers with whom I collaborate.

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How does internal collaboration across Sterling factor into your role?

Our team is full of specialised team members from a range of different backgrounds, all with the understanding that collaboration is critical in the highly technical work we do. This range of expertise enables us to work together to overcome challenges and deliver our customers the best possible results. To foster stronger collaboration, Sterling has developed a cell system where engineers, CR&D scientists, analytical chemists and other key team members remain in consistent communication on a day-to-day basis to understand where to direct efforts and set up appropriate procedures.

The culture at Sterling is really positive and collaborative, and it is my favourite part about working here. The entire team is focused on motivating one another, and no one is ever working in isolation. Everyone works together. Everyone is positive. Everyone is friendly. I think that this strong culture is evident not only within our organisation, but also in our interactions with customers, as we all work in partnership towards the same objective.



Dudley, Northumberland, UK
+44 (0) 191 250 0471

Cary, North Carolina, US
+1 (919) 678 0702

Germantown, Wisconsin, US
+1 (262) 251 5044

Deeside, Wales, UK
+44 (0) 124 498 0850