



FROM CAMPUS TO CAREER

Stories of alumni journeys, student jobs, and career opportunities during and after BioS.

Alumni Stories: Birte Martens' PhD at the BAM Institute for Materials Science

Ezgi Ece Yavuz

Birte Martens was part of the first cohort of the BioS Master. She discovered the program while writing her Bachelor's thesis in Prof. Reinhardt's lab. Today, she is pursuing a PhD. We spoke with her about the early days of BioS and how the program shaped her path.

Ece: After graduating from BioS, you are now doing your PhD. What is your research about?

Birte: I am currently doing my PhD at BAM, the Bundesanstalt für Materialforschung und -prüfung, a federal institute for materials research. Although BAM mainly focuses on material sciences, there are departments with a strong biological component. My research focuses on the evolution of host-symbiont-pathogen interactions in cockroaches and termites. From an evolutionary perspective, termites are eusocial cockroaches. Many termites have complex, specialized gut microbiota, which seem to have played a role in the loss of the ancestral fat body endosymbiont *Blattabacterium*. This makes this order of insects an intriguing model in the field of insect endosymbioses.

You were among the very first BioS students. What was the program like at the beginning?

We started with 22 students in 2021. After the first semester, we were 21. It was quite intense. As the first cohort, some aspects of the workload were underestimated. The first two semesters were especially demanding. We also did not fully understand how to plan our lab rotations strategically. We had to navigate that ourselves, since there was no previous cohort to learn from.

Why did you choose Biology in Society for your Master's?

I wrote my Bachelor's thesis in Prof. Reinhardt's lab and became interested in evolutionary and ecological questions. When I heard about the new Biology in Society program, it seemed like a good fit. It combined evolutionary perspectives with broader societal and interdisciplinary aspects.

How did BioS shape where you are today?

BioS helped me especially through its science communication courses and its emphasis on good scientific practice and bias awareness. Even though I do not plan to work professionally in science communication, the training broadened my perspective. As a PhD student, you can take similar transferable skills courses. However, thanks to BioS, I already had this foundation. It saves time and gives confidence. The focus on research ethics and bias remains highly relevant in my doctoral work.

What does a typical day at work look like?

I work in Berlin, which is famous for its difficulty in finding housing, so my day starts with about an hour of commuting. At the beginning of my experiments, it was heavier lab work focused on setting up experiments and establishing cockroach breeding systems. Now I am waiting for the second generation to mature, which takes around 60 days. This phase gives me more flexibility. Currently, I can choose between lab experiments, testing new aspects of my project, or focusing on literature review and data analysis. I am officially employed at 67 %, which corresponds to roughly five hours per day. In reality, academic work often exceeds contracted hours. If nothing is urgent, I try to avoid excessive overtime.

When did you decide to pursue a PhD, and how was the application process?

While writing my Master's thesis, also in Prof. Reinhardt's lab, I began applying for positions. I received strong support from my supervisor and colleagues. Several people from the group forwarded me the position I now hold. I was accepted before finishing my Master's thesis and began the bureaucratic process immediately so I could start as soon as possible.

What advice would you give current BioS students?

For students who have not yet started their lab rotations, choose them strategically. Try to align them with what you might want to do after graduation. Do not simply take the first opportunity that appears. Also, take time to reflect on your options. Speak with scientists at the university, as many are willing to discuss career paths and share insights.

Do you have a memorable story from your Master's time?

The introductory excursion week stands out. Being in a remote place without the internet and sharing rooms with people you had just met created strong bonds within the cohort.

SCIENCE UNPACKED - THE BIOS PODCAST

Hana Abdeljalil

Science vs religion: two worlds many believe to be divided. Team faith or team science? Can you be both? In this episode, Hana and Patience delve deep into the worlds of science and religion. Alongside Biologist Prof. Klaus Reinhardt, Lutheran Theologian Prof. Christian Schwarke and Islamic studies Professor Rory Dickson, we explore how these two worlds became divided and how they can be bridged.

ANIMALS AND MONEY

This part of BioS Reports unravels relationships between animals and the economy.

Tangled in the Net: The Future of North Sea Shrimp Fishing

Paul Neher

More than 15 million tourists visit the German North Sea region every year to enjoy its beautiful sandy beaches and wide variety of outdoor activities, particularly in the areas of the German Wadden Sea National Parks of Lower Saxony and Schleswig-Holstein [1,2]. Among the highlights are picturesque harbors with colorful shrimp trawlers, where one must try the famous North Sea shrimps, a local delicacy. The North Sea shrimp, or common brown shrimp (*Crangon crangon*) is the most important crustacean species in the coastal fishery of the German Bight. Germany is one of the largest producers of this high-priced seafood, with annual landings of over 12,000 tons from 2006 to 2015 [3]. However, since 2016, catches have declined to less than 8,000 tonnes per year due to shrinking populations [3].



Coastal villages host annual festivals celebrating shrimp fishing, and many harbors offer guided tours showcasing traditional fishing techniques, making them attractive travel destinations. Yet few tourists realize that most North Sea shrimps travel to Morocco and back before being sold in Germany [4]. This detour is labor-intensive and significantly increases the carbon footprint of shrimp production. Recent research explores automated peeling machines that could enable local processing, potentially shortening supply chains, reducing costs, and improving sustainability [4].

Shrimp fishing in the North Sea faces significant challenges. The primary catch method—beam trawling—is known for its high fuel consumption, high bycatch rate and disturbance of the seabed [5,6]. Bycatch reduction devices such as sieve nets and sorting grids have been introduced to help mitigate the impact on juvenile fish populations [7].

North Sea shrimp fisheries are an essential part of German coastal culture. Despite challenges such as climate change and globalized supply chains, innovations like automated peeling and improved fishing techniques offer prospects for a more sustainable future. Supporting artisanal and small-scale fisheries will be key to preserving the region's cultural heritage while also promoting tourism and local economies.

EXCURSIONS AND OTHER NEWS

Student Work Sprouting at the Plant Conference

Patience Blossfeld Dodgson

Every year, botany departments from various universities in the region host the Central German Plant Physiology Conference. This year, for the 24th conference, it was TU Dresden's turn.



From February 27th to February 28th, TU Dresden's Plant Physiology department hosted a student conference for Middle Germany's various plant scientists. Guests came from Jena, Halle, and Leipzig to present their research to a group of about fifty students and professors, gaining feedback and experience with presenting their research.

Topics ranged from the evolutionary history of the RuBisCO complex to engineering plants to produce secondary metabolites through guttation. Students presented their successes, failures, and their work in progress and received plenty of interest, comments, and useful feedback. There were talks on findings, the development of methods, and even a presentation from TU Dresden's own Dr. Susann Auer on making sure that experiments are reproducible. Many commiserated with her words, as they had also struggled to find clear information on methods from key papers. Most presenters were doctorate students, though there were plenty of master's and bachelor's students and a couple of professors as well. There were regular coffee breaks and a Friday night dinner to allow everyone to meet, discuss, and potentially make new friends.

I personally had the privilege to speak to Bachelor's students from Leipzig who were researching algae, and with a PhD student from Dresden. Many more people intermingled, with younger students gaining advice from older and others making contacts. The 25th conference will be held next year in Leipzig. All students who work with plant biology are encouraged to come.

