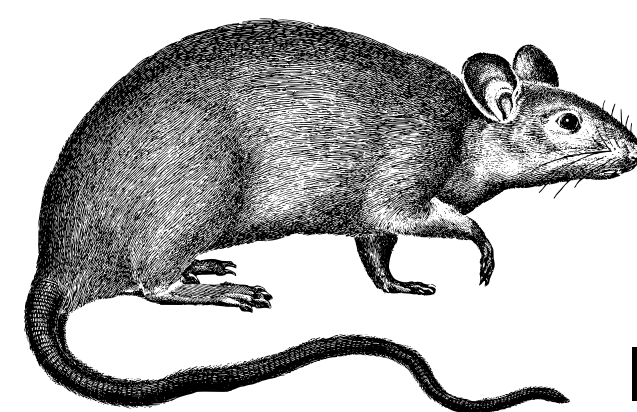




# BioS Reports

Glimpse into the activities of the  
Master's course "Biology in Society"



ISSUE 37

June 2025

ISSN 2940 - 4673

## EXCURSIONS AND OTHER NEWS

Small insights in BioS points of view, field trips, and other stuff we do.

### Lab Rotation: A Podcast for the Senckenberg Museum for Nature

Min Mao, Ezgi Ece Yavuz

*"Hello and welcome to the Senckenberg Museum for Nature in the Japanese Palace, Dresden. We are excited to dive into fascinating science facts and uncover how they shape our daily lives and the whole world."*

This was our opening sentence for an unconventional lab rotation project - a podcast in cooperation with the Japanese Palace. The goal is to establish a new form of science communication, offering every visitor to the Senckenberg Museum, regardless of age, a closer and more engaging way to understand the wonders of the natural world.

We met with Dr. Heiko Stuckas who took us through the exhibition and explained the general concept behind the podcast project. That session made us understand how our rotation fell into a broader cooperation between the Senckenberg Museum, BioS, and the Helmholtz Institute. Afterwards, we also spoke with Nicole Gierig from the TU Dresden PR department and gathered some valuable tips on how to translate science communication to other age groups - thinking about rhythm, style, and what truly gets attention.

We produced two separate podcast episodes on the same topic (how mussels capture CO<sub>2</sub>) specifically designed for children and adults respectively. To improve language accessibility, we generated the podcast in both English and German - the latter is still in progress now. We decided to be teacher-student oriented towards the kids' version so that the material would feel familiar and enjoyable. For the adult version, we leaned more toward an informative radio show, something that could catch the interest of museum visitors without feeling too academic or too simplified.

*'During one of our visits to the museum, we happened to see teachers guiding a group of children through the exhibits. It was a completely new and exciting experience for me. It also gave me a better understanding of the typical age range of young visitors, which really helped me think about how to tailor the podcast for a younger audience. I truly enjoyed everything I saw in the museum and working on the children's podcast was especially fun, since you can really feel the energy and curiosity of young minds while creating something for them.'* (Min)

*'Since this is a joint effort with the Helmholtz Institute, their team will continue to watch how people use the podcast and what kinds of learning styles work best for a museum environment. That added one more level of responsibility to us—the podcast had to be not only informative but also helpful and enjoyable somehow for different kinds of listeners. Next came technical training where we received an introductory lesson on how to utilize the podcast studio equipment, from recording to editing.'* (Ece)

The actual production took place in the podcast studio at SLUB. It was an amazing experience. If you are thinking about starting your own podcast or are interested in podcast production but haven't taken the first step yet, you should definitely visit the studio. It might just be the inspiration you need to get started!

Both of the episodes in English were broadcast live at the Japanisches Palais on June 14, timed to coincide with Lange Nacht der Museen (Museum Night Dresden). You can still listen to them at The Blue Sofa, an interactive listening space where you sit, put on headphones, and listen to us talking about Blue carbon.

If you are also interested in using podcasts as a tool for science communication and would like to create your own, feel free to reach out. We all hope to continue developing the podcast format as a lasting part of the museum experience.

## EXCURSIONS AND OTHER NEWS

### From Lab Coats to Running Shoes: BioS Takes On the REWE Team Challenge

Patience Blossfeld Dodgson

On May 28th, BioS was represented for the first time at the Rewe Team Challenge Race! I was part of the four person team that ran the five kilometers through Dresden. The other "Super Sonic Signals" were Anna-Lina Kerner, Emilie Walde, and Clara Boehme.

The day was warm with fat drops of rain and the occasional sound of thunder, delaying our race by half an hour as all the participants huddled inside the entrance of the mall near the starting line. Yet the rain cleared up, and at 19:30 we lined up to begin at Postplatz.

As we started, most of us kept pace as Clara shot off ahead. She would get the fastest time at 27:09. The race went down Wienerstrasse and under another road, the tunnel echoing the music that was played at various intervals along the racing path. Colored lights shone through the tunnel, and when we got out cheering spectators lined the path. As we approached Lenneplatz, the various obstacles such as puddles and weaving around slower racers broke the team apart.

The last few meters brought us into the Rudolf-Harbig Stadium, racing past the finish line into a crowd. Everyone collected their participation medals before going out for free beer, bananas, and granola bars. As results came in, we realized that we placed 75th out of 612 women's teams. Considering the sheer amount of participants - TU Dresden alone had 504 - we were more than happy with the results. We were also tired, sweaty, and eager to sleep.



## ANIMALS AND MONEY

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

### The Role of Mine-Detecting Rats in Post-War Economies

Lucas Kullmann

They're small, fast, and possess an extraordinary sense of smell - and they're saving lives. In former war zones around the world, rats are reshaping the science of landmine detection, offering a biological alternative where technology often falls short.

Landmines are widely used weapons causing death and severe injuries. Beyond their immediate lethality, landmines inflict lasting social, ecological, and economic harm. They prevent displaced families from returning home, obstruct humanitarian aid, render vast areas of farmland unusable, and literally undermine entire economies [1,2]. In 2024, 58 countries remained affected by landmines, which continue to shape modern conflicts [3]. In Ukraine alone, 174,000 km<sup>2</sup> of land is already contaminated, presenting immense challenges for recovery [4]. Traditional clearance methods such as metal detectors are slow and costly, with the removal of a single mine ranging from USD 300 to 1,000 [5,6]. Yet a more promising solution may be on the horizon.

The non-profit organization APOPO (Anti-Personnel Landmines Detection Product Development) trains giant African pouched rats (*Cricetomys gambianus*) for landmine detection in several countries [1,7,8]. These so-called "HeroRATs" are native to Africa, where they were also first deployed operationally. Weighing 1-2 kg, they are big enough to be kept on a leash yet light enough to not trigger the mines. Unlike their metal colleagues, rats are also able to detect TNT accurately, thus avoiding false positives. Adapted to various climates and cheaper to train and maintain than dogs, HeroRATs have since been successfully introduced to several other countries [7,9].

Among them is Cambodia, which will subsequently serve as an example to assess the actual economic relevance of HeroRATs. In 2016, manual demining, using brushcutters and human teams, cost USD 1.00 per m<sup>2</sup> in Cambodia. Contrary, the use of HeroRATs with brushcutter support reduced costs by around 67% [10]. In 2023 alone, HeroRATs helped return 13.44 km<sup>2</sup> of land to local communities [11]. Based on 2016 estimates, this corresponds to potential savings of USD 9.01 million. That same year, Cambodia's national demining budget totaled USD 88.74 million [12]. Hypothetically, if HeroRATs had been used, the cleared land could have tripled from 89 km<sup>2</sup> to 269 km<sup>2</sup>.

While HeroRATs offer economic advantages, several factors influence the accuracy of the previous estimates. Open terrain allows for faster detection, whereas rocky or wooded areas slow progress [13]. Additionally, if a rat retires before completing its typical 5-6 years of service, training a replacement costs approximately USD 9,000 [14]. The hybrid model - combining rats with manual deminers - also involves additional costs, including a rat supervisor (USD 500), handler (USD 271), and leasing fees (USD 500 per rat). Still, this method can clear up to four times more land each month - 32,000 m<sup>2</sup> versus 8,000 m<sup>2</sup> [15].

In conclusion, trained rats represent a highly effective tool for landmine clearance, offering a safe, efficient, and economically viable alternative. While the approach still faces certain operational and financial limitations, continued improvement could expand its use and open the door to new applications, such as human rescue operations.

## EXCURSIONS AND OTHER NEWS

### Welcome to Our New BioS Reports Members!

We're happy to welcome three new members to the BioS Reports team! Each of them brings a unique story, fresh view, and a shared passion for making science accessible and engaging.

#### Patience

Patience moved from New Jersey in the USA to Dresden to join the Biology in Society Master's Program. She graduated from Drexel University with a Bachelor's in Science before working in the food industry for five and a half years, then in the pharmaceutical industry for six months. With that experience, she realized the importance of transferring knowledge correctly. A dedicated nerd, Patience loves reading, writing, knitting, and picking up new hobbies. She can also be found going on long walks and has a love of swimming. She joined BioS reports to improve her ability to communicate well.

#### Mariia

Originally from a small village in Ukraine, Mariia has always been drawn to the quiet wonders of nature—watching animals, asking questions, and dreaming of becoming a zoologist. Her journey eventually brought her to Germany, where she continues to explore her passion for biology through the Biology in Society Master's program. Outside the academic world, she finds joy in dancing oriental dance, painting, playing the guitar, reading, and learning new languages. Nature remains her favorite escape and source of inspiration. Through BioS Reports, she hopes to bring science closer to everyday life—making it feel not only understandable, but alive and inspiring.

#### Philine

Philine's fascination with biology began in her grandma's garden, planting seeds and observing tiny creatures. She went on to study Biology in Rostock, where the nearby sea was a welcome bonus. Believing that biology could inspire and reach more people if communicated more engagingly, she decided to join BioS reports.

As a self-proclaimed Instagram granny, she's especially excited to explore reels and other creative content tools. While still missing the sea, Philine has come to appreciate Dresden's local hiking trails, and the chance to swap cooking recipes with fellow students from around the world.

