

Press Release

How are proteins folded?

Dr. Kristina Döring receives 30th Karl-Freudenberg Prize

Weinheim. June 8, 2018. What do proteins do? They provide cells in the body with stability and form, control chemical reactions and send signals. For protein strands to function properly, they need to be folded into a complex form. If one of the strands does not fold properly, the protein no longer functions. Folding assistants or “chaperones” are there to make sure proteins still in the folding process do not clump together with other incomplete proteins but can take the desired form. Biologist Dr. Kristina Döring made scientific discoveries about the influence and behavior of protein chaperones in her dissertation “The nascent interactome of the yeast chaperone Ssb and its interplay with other ribosome-associated chaperones”, providing an important foundation for further research. Misfolded proteins are behind a series of diseases including cancer, diabetes and neurodegenerative diseases such as Alzheimer’s or Parkinson’s. Helping prevent such diseases in the future with medication and medical technology applications is important. All reasons why the 32-year-old scientist will receive the 30th Karl Freudenberg Prize from the Freudenberg Group.

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The prize will be given at the annual celebration of the Heidelberg Academy of Sciences and Humanities. “New discoveries in science and research are the foundation for tomorrow’s innovations,” says Dr. Luis Lorenzo, Head of Freudenberg Technology Innovation. “As an innovative and

global technology Group, Freudenberg supports young scientists and is thrilled to see extraordinary discoveries, such as those of Dr. Döring.”

The young scientist worked in Professor Bernd Bukau’s team for four years and her typical work day involved going to her lab in the morning at the Zentrum für Molekulare Biologie in Heidelberg, raising cells, extracting ribonucleic acid and then evaluating the data and measurements on a computer. “Research work is a constant up and down. The analyses were rarely easy, many experiments failed to produce clear results. However, you also have wonderful moments where you make an unexpected discovery, such as when protein synthesis and chaperone function fully synchronized, generating maximum efficiency and precision in the production of functional proteins,” says Döring. “Fundamental issues fascinate me. I want to understand things in detail, how it all hangs together. Even as a child, I loved looking through a microscope and was very curious.”

The scientist has now been working for the past nine months as the head of sequencing at the Institute for Molecular Infection Biology at the University of Würzburg. “We are a service unit for the university and University Hospital Würzburg and work closely with a wide range of research groups. In the process, you gain insight into various research areas, which is very exciting.” When she is not in the lab, Döring likes to cruise around on her roller blades or dance salsa. Döring can remember exactly where she was when she first learned about winning the prize: “I did not think I would actually win it. The award is a wonderful recognition of my work.”

In 1986, the Freudenberg Group established the Karl Freudenberg Prize for young scientists in the German state of Baden-Württemberg, honoring Karl Freudenberg’s 100th

birthday. The award is given for work in the natural sciences. Nominations are made by members of the Mathematics-Natural Sciences Division at the Heidelberg Academy of the Sciences and Humanities as well by professors and institute chairs in Heidelberg.

About the Freudenberg Group

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